NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana

Effective Date:

February 28, 2022

Prepared by:

Galiano Gold Inc
1640-1066 West Hastings Street
Vancouver, BC V6E 3X1

Qualified Persons	Company
Richard Miller, P.Eng.	Galiano Gold Inc.
Greg Collins, MAusIMM(CP)	Galiano Gold Inc. (Former)
Eric Chen, P.Geo.	Galiano Gold Inc. (Former)
Alan Eslake, FAusIMM	Asanko Gold Ghana Ltd.
Mario E. Rossi, FAusIMM	GeoSystems International Inc.
Malcolm Titley, MAIG	CSA Global Ltd.
Benoni Owusu Ansah, P.E.	Knight Piésold Ltd.

Richard Miller, P.Eng.
CERTIFICATE OF QUALIFIED PERSON

This Certificate of Qualified Person has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects Part 8.

a. Name, Address, Occupation

Richard Miller, P.Eng.,
Suite 1640 – 1066 West Hastings St., Vancouver, British Columbia, Canada
Vice President, Technical Services, Galiano Gold Inc.

b. Title and Effective Date of Technical Report

NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana.
Effective Date: February 28, 2022 (the Technical Report).

c. Qualifications

BASc Mining and Mineral Process Engineering, University of British Columbia, Canada, 1987
P.Eng., Engineers and Geoscientists British Columbia (EGBC)

I have practiced my profession continuously since 1987 and have worked at copper, diamond and gold mines in Canada, South Africa, Namibia, Guinea and Turkey in the progressive capacities of Mining Engineer, Project Manager, Mine Manager and General Manager. I have also held corporate positions as Manager Mining, Director Mine Engineering (Open Pit) and VP Technical Services, in which I have had overseeing involvement in mine engineering and technical services matters at various operating mines and development projects.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 for the sections of the technical report that I take responsibility.

d. Site Inspection

October 14 2021 to October 21 2021.

e. Responsibilities

I am responsible for Sections 1.1, 1.2, 1.7, 1.9 to 1.12, 2, 3, 4, 5, 15, 16, 18, 19, 20.1 to 20.8, 21, 22, 24, 25.1, 25.2, 25.6, 25.9, 25.10, 26.4, and 27 of this Technical Report.

f. Independence

I am not independent of Galiano Gold Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g. Prior Involvement

I started employment with Galiano Gold Inc in October 2021 in the capacity of Manager, Mining and in December 2021 was appointed to Vice President, Technical Services for Galiano Gold Inc. In both of these capacities I have had oversight of planning and execution of technical programs supporting the Asanko Gold property, reviewed short and long term mining plans, had communications with and attended meetings with discipline leads at site and at the corporate level.

h. Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

"Signed and sealed by Richard Miller"

	March 29, 2022
Richard Miller, P.Eng.	Date

Gregory Collins, MAusIMM(CP)
CERTIFICATE OF QUALIFIED PERSON

This Certificate of Qualified Person has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects Part 8.

a. **Name, Address, Occupation**
Gregory Collins, P.Geo.,
#1640-1066 W. Hastings Street, Vancouver, British Columbia
(former) Vice President, Exploration, Galiano Gold Inc.

b. **Title and Effective Date of Technical Report**
NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana.
Effective Date: February 28, 2022 (the Technical Report).

c. **Qualifications**
B.AppSc Geology (Hons), Queensland University of Technology, Brisbane, Australia, 1992
MAusIMM CP (Geo) and SEG Fellow.

I have practiced my profession continuously since 1993 and have worked on exploration projects for gold, copper, zinc-lead-silver, and uranium in Australia, Mongolia, China, Russia, and Indonesia in the progressive capacities of Geologist, Chief Geologist, and Exploration Manager. I have also held the corporate position of VP Exploration, in which I have had overseeing involvement in exploration/mine geology matters at various exploration projects and operating mines.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 for the sections of the technical report that I take responsibility.

d. **Site Inspection**
February 10, 2021 to May 5, 2021, with regular visits thereafter every quarter for approximately 3 weeks each visit. Most recent visit from October 12 to November 4, 2021.

e. **Responsibilities**
I am responsible for Sections 1.3, 1.4, 6, 7, 8, 9, 10, 11, 12, 23, 25.3, 25.4, and 26.3 of this Technical Report.

f. **Independence**
I am not independent of Galiano Gold Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g. **Prior Involvement**
As Vice President of Exploration, I had oversight of planning and execution of exploration programs on the Asanko Gold property; developed, reviewed and presented exploration programs and budgets; regularly met and communicated with exploration teams onsite to ensure smooth program execution. I coordinated and collaborated with other departments on related programs involving exploration efforts, such as metallurgical and geotechnical drilling, and resource infill drilling.

h. **Compliance with NI 43-101**
I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. **Disclosure**
As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

“Signed by Gregory Collins”

	March 29, 2022
Gregory Collins, MAusIMM(CP)	Date

Eric Chen, P.Geo.
CERTIFICATE OF QUALIFIED PERSON

This Certificate of Qualified Person has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects Part 8.

a. Name, Address, Occupation

Eric Chen, P.Geo.,
#1640-1066 W. Hastings Street, Vancouver, British Columbia
(former) Vice President, Technical Services, Galiano Gold Inc.

b. Title and Effective Date of Technical Report

NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana.
Effective Date: February 28, 2022 (the Technical Report).

c. Qualifications

BSc. Geology, Peking University, China, 1991
P.Geo., Engineers and Geoscientists British Columbia (EGBC)

I have practiced my profession continuously since 1991 and have 30 years of experience working at gold, copper, base metal projects and mines, both open pit and underground, in Canada, Mexico, United States, Turkey, China and Ghana, in the capacity of exploration and resource geologist, with progressive responsibilities as Superintendent, Manager, VP Mineral Resources, and VP Technical Services.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 for the sections of the technical report that I take responsibility.

d. Site Inspection

Regular site visits since March 2021 (average 1 visit per quarter, 10-15 days per visit). Dates for most recent visit to site: 16th to 30th September 2021.

e. Responsibilities

I am responsible for Sections 1.6, 12.1, 14.0, 14.4, 14.5, 14.6, 14.7, 14.8, 25.5, and 26.2 of this Technical Report.

f. Independence

I am not independent of Galiano Gold Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g. Prior Involvement

As VP Mineral Resource (Aug 2020 to Aug 2021) and VP Technical Services (Aug to Dec 2021) of Galiano Gold Inc., I had oversight of planning and execution of technical programs supporting resource and reserve development, grade control and reconciliation, and other relevant mining studies on the Asanko Gold property.

h. Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

“Signed and sealed by Eric Chen”

	March 29, 2022
Eric Chen, P.Geo.	Date

Alan Eslake, B.App.Sc.
CERTIFICATE OF QUALIFIED PERSON

This Certificate of Qualified Person has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects Part 8.

a. Name, Address, Occupation

Alan Eslake, B.App.Sc..
100 Winbourne Road, Hazelbrook 2779, NSW Australia
Chief Metallurgist, Asanko Gold Ghana Limited

b. Title and Effective Date of Technical Report

NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana.
Effective Date: February 28, 2022 (the Technical Report).

c. Qualifications

B.App.Sc. (Materials), University of Technology, Sydney, 1992
Fellow, Australasian Institute of Mining and Metallurgy (FAusIMM)

I have practiced my profession continuously since 1992 and have worked in numerous commercial metallurgical laboratories and operating mine sites. Experienced with gold and base metals in global locations including New Zealand, PNG, China, Chile and Turkey.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 for the sections of the technical report that I take responsibility.

d. Site Inspection

Site based since December 2020.

e. Responsibilities

I am responsible for Sections 1.5, 1.8, 13, 17, 25.7, 25.8, and 26.1 of this Technical Report.

f. Independence

I am not independent of Galiano Gold Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g. Prior Involvement

I have been employed by Galiano Gold Inc. / Asanko Gold Ghana Limited in the capacity of Chief Metallurgist since December 2020. Areas of focus have included production enhancement projects and supervision of both internal and external testwork programs.

h. Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

“Signed by Alan Eslake”

	March 29, 2022
Alan Eslake, B.App.Sc	Date

Mario E. Rossi, FAusIMM
CERTIFICATE OF QUALIFIED PERSON

This Certificate of Qualified Person has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects Part 8.

a. Name, Address, Occupation

Mario E. Rossi,
2385 NW Executive Center Dr., Suite 100, Boca Raton, FL, 33431, USA
Principal Geostatistician, GeoSystems International, Inc.

b. Title and Effective Date of Technical Report

NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana.
Effective Date: February 28, 2022 (the Technical Report).

c. Qualifications

Mining Engineer, Universidad Nacional de San Juan, Argentina, 1985
Master of Science, Geostatistics, Stanford University, 1988
Fellow, Australian Instutute of Mining and Metallurgy (AusIMM)
Registered Member, Society for Mining, Metallurgy &Exploration (SME)

I have practiced my profession continuously since 1985. I have worked in over 100 different mining projects at various stages of development and operations around the world, including precious and base metals, multi-element deposits (Au, Ag, Cu, Fe, Pb, Zn, etc.), laterite-type deposits, sedimentary deposits (uranium, coal), Iron hematite and magnetite deposits, and industrial minerals such as limestone, nitrate, iodine, lithium and graphite deposits. I have over 30 years experience in resource modeling for epithermal-type gold deposits, including Birimian-style Au deposits. These include Ashanti Gold (Ghana); Yaoure Au deposits (Ivory Coast); Salobo (Senegal); Chaarat Au deposit (Kyrgyzstan); and several others that are similar in style to the Esaase and Abore deposits.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 for the sections of the technical report that I take responsibility.

d. Site Inspection

I have visited the site from March 18 through April 1, 2021

e. Responsibilities

I am responsible for Sections 14.1, 14.2, and 25.5 of this Technical Report.

f. Independence

I am independent of Galiano Gold Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g. Prior Involvement

I have had no prior involvement with Asanko Gold Mines or Galiano Gold Inc.

h. Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

“Signed by Mario Rossi”

	March 29, 2022
Mario Rossi, FAusIMM	Date

Malcolm Titley – BSc, MAusIMM, MAIG
CERTIFICATE OF QUALIFIED PERSON

This Certificate of Qualified Person has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects Part 8.

a. Name, Address, Occupation

Malcolm Titley, MAIG
Suite 2, First Floor, Springfield House, Horsham, West Sussex, United Kingdom, RH12 2RG
Principal Consultant, CSA Global

b. Title and Effective Date of Technical Report

NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana.
Effective Date: February 28, 2022 (the Technical Report).

c. Qualifications

BSc Geology and Chemistry, University of Cape Town, 1979
Member, Australian Institute of Geoscientists
Member, Australian Institute of Mining and Metallurgy

I have practiced my profession continuously since 1981 and have over 20 years operating experience at gold, iron ore and copper mines in Australia, Papua New Guinea and Ghana, in the progressive capacities of Geologist, Chief Geologist, Pit Superintendent and Mine Manager. I have practiced as a consultant to the mining industry for over 20 years, primarily focused on mineral resource estimation and reporting, due diligence and feasibility studies and operations support and business improvement. My consulting experience includes time as a Managing Director.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 for the sections of the technical report that I take responsibility.

d. Site Inspection

Regular site visits during the period November 2017 to January 2020 (on average 1 visit per quarter, minimum of 7 days per visit). Dates for most recent visit to site: 16th to 22nd January 2020.

e. Responsibilities

I am responsible for Sections 14.3 and 25.5 of this Technical Report.

f. Independence

I am independent of Galiano Gold Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g. Prior Involvement

I was QP for the December 2017 Nkran, Akwasiso and Dynamite Hill deposits Mineral Resource Estimate. I was also an independent consultant to Asanko Gold Ghana providing business improvement support services through my independent company Maja Mining Limited during the period 1st March 2018 until December 2020.

h. Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

"Signed by Malcolm Titley"

	March 29, 2022
Malcolm Titley, MAIG	Date

Benoni Owusu Ansah, P.E.
CERTIFICATE OF QUALIFIED PERSON

This Certificate of Qualified Person has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects Part 8.

a. Name, Address, Occupation

Benoni M. Owusu Ansah, P.E., MGhIE, MASCE, MGGS, MGhIGS
No. 20 Second Close, Airport Residential Area, Accra, Ghana
Civil/Projects Manager, Knight Piésold, West Africa

b. Title and Effective Date of Technical Report

NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana.
Effective Date: February 28, 2022 (the Technical Report).

c. Qualifications

I have over 15 years of professional experience as a Civil Engineer with specialization in geotechnical, environmental, and structural engineering. My experience spans from prefeasibility, feasibility, detailed design to construction, and ‘forensic’ engineering of Tailings and Water Storage Dams, Harbours, Airports, and structural foundations. I have engineering design, construction and management experiences with various large-scale projects in Ghana, Cameroun, Congo DRC, Cote d’Ivoire, Burkina Faso, Mauritania, Sierra Leone, Congo, Togo, Mali and Guinea. I am currently a Civil/Projects Manager with Knight Piésold and undertake engineering designs as well as construction quality control and quality assurance for several mines. I am the Engineer of Record for the design and construction of the Tailings Storage Facility for the Asanko Gold Mine.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 for the sections of the technical report that I take responsibility.

d. Site Inspection

Regular site visits from 2019 through 2022 for various engineering design, constructions, and dam safety audits. Date of most recent visit to site was January 3rd, 2022. A full day was spent on site providing technical guidance for the Stage 6 Expansion of the TSF and discussing future TSF developments with site management.

e. Responsibilities

I am responsible for Section 20.9 of this Technical Report.

f. Independence

I am independent of Galiano Gold Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

g. Prior Involvement

I was part of the engineering team for mine start-up construction, including Stage 1 of the existing TSF and Process Plant development. I have supervised/managed the construction of Stage 2 expansion to the TSF. I have served as the Lead Design Engineer and Projects Manager for Stage 4 through Stage 6. I provide ongoing support for life of mine TSF development. I am the Engineer of Record for the design and construction of the Tailings Storage Facility for the Asanko Gold Mine.

h. Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

“Signed by Benoni M. Owusu Ansah”

	March 29, 2022
Benoni M. Owusu Ansah, P.E.	Date

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1 SUMMARY

1.1 Introduction

Galiano Gold Inc. (the "Company" or "Galiano Gold") is a gold mining company listed on the TSX and NYSE, with headquarters at 1640-1066 West Hastings Street, Vancouver, British Columbia (https://www.galianogold.com/). The Company's flagship project is the jointly owned Asanko Gold Mine ("AGM"). Galiano Gold and Gold Fields Limited (JSE & NYSE: GFI) jointly each own a 45% interest in Asanko Gold Ghana Limited ("AGGL"), with the Government of Ghana retaining a 10% free-carried interest. The AGM concessions are owned 100% by Asanko Gold Ghana Limited.

The AGM is a large scale, multi-deposit gold asset, which is managed and operated by Galiano Gold. The mine was built in 2015, with first gold poured in January 2016, and commercial production commencing in April 2016. The AGM has produced an average of approximately 230,000 ounces (oz) of gold per year between 2017 to 2021 and had a record gold production of approximately 251,000 ounces in 2019. AGGL holds the largest land package on the highly prospective and underexplored Asankrangwa Gold Belt.

The AGM is a multi-deposit complex with two main deposits, Nkran and Esaase, six satellite deposits and a carbon-in-leach (CIL) processing plant with a current operating capacity of approximately 5.8 Mtpa.

This report is a National Instrument 43-101 (NI 43-101) Technical Report that summarizes the AGM and its updated Mineral Resources effective February 28, 2022. This NI 43-101 Technical Report for the Asanko Gold Mine, Ashanti Region, Ghana, with an effective date of February 28, 2022 ("Report") updates all material information on the AGM, is addressed to Galiano Gold, supports the disclosure of updated Mineral Resource estimates and supports the scientific and technical content in Galiano Gold's Annual Information Form filing.

As at the effective date of this Report, Galiano Gold is not in a position to declare Mineral Reserves on the AGM property as a result of current metallurgical uncertainty of the Esaase material. AGM is in the process of investigating options for mitigating the issues, which will subsequently lead to a revised optimized mine plan. At that time, Galiano Gold will prepare an updated technical report supporting the new life of mine plan, based on Mineral Reserves.

Any references to "ore" apply to production during time periods when Mineral Reserves were stated.

The Report supersedes all previous technical reports.

1.2 Property Description and Ownership

Ghana is located in West Africa, sharing boundaries with Togo to the east, Cote d'Ivoire to the west, Burkina Faso to the north and the Gulf of Guinea to the south.

The country is known to hold a significant portion of West Africa's gold deposits and has long attracted investors looking to trade and invest in its mineral riches. According to recent global statistics on gold production, Ghana is the world's eighth and Africa's largest gold producer. In addition to gold, the country has other mineral resources such as manganese, bauxite, and diamonds. At the moment, gold is Ghana's most important export commodity, followed by cocoa and timber products.

The AGM tenements are in the Amansie West and South Districts, of the Ashanti Region of Ghana, approximately 250 km NW of the capital Accra and some 50 km to 80 km southwest of the regional capital Kumasi. The concessions cover an area of approximately 476 km^2 between latitudes 6º 19'40" N and 6º 28' 40" N; and longitudes 2º 00' 55" W and 1º 55' 00" W.

The AGM concessions are owned 100% by Asanko Gold Ghana Limited. All mineral tenements are in good standing with the Government of Ghana.

AGGL holds 7 mining leases, 9 prospecting licences and 1 reconnaissance licence which collectively make up the AGM property and span over a 40 km length of the Asankrangwa Belt. The AGM is made up of a series of contiguous concessions in the Obotan and Esaase area. These concessions cover a total area of 476 km^2 and are summarized in Table 1-1.

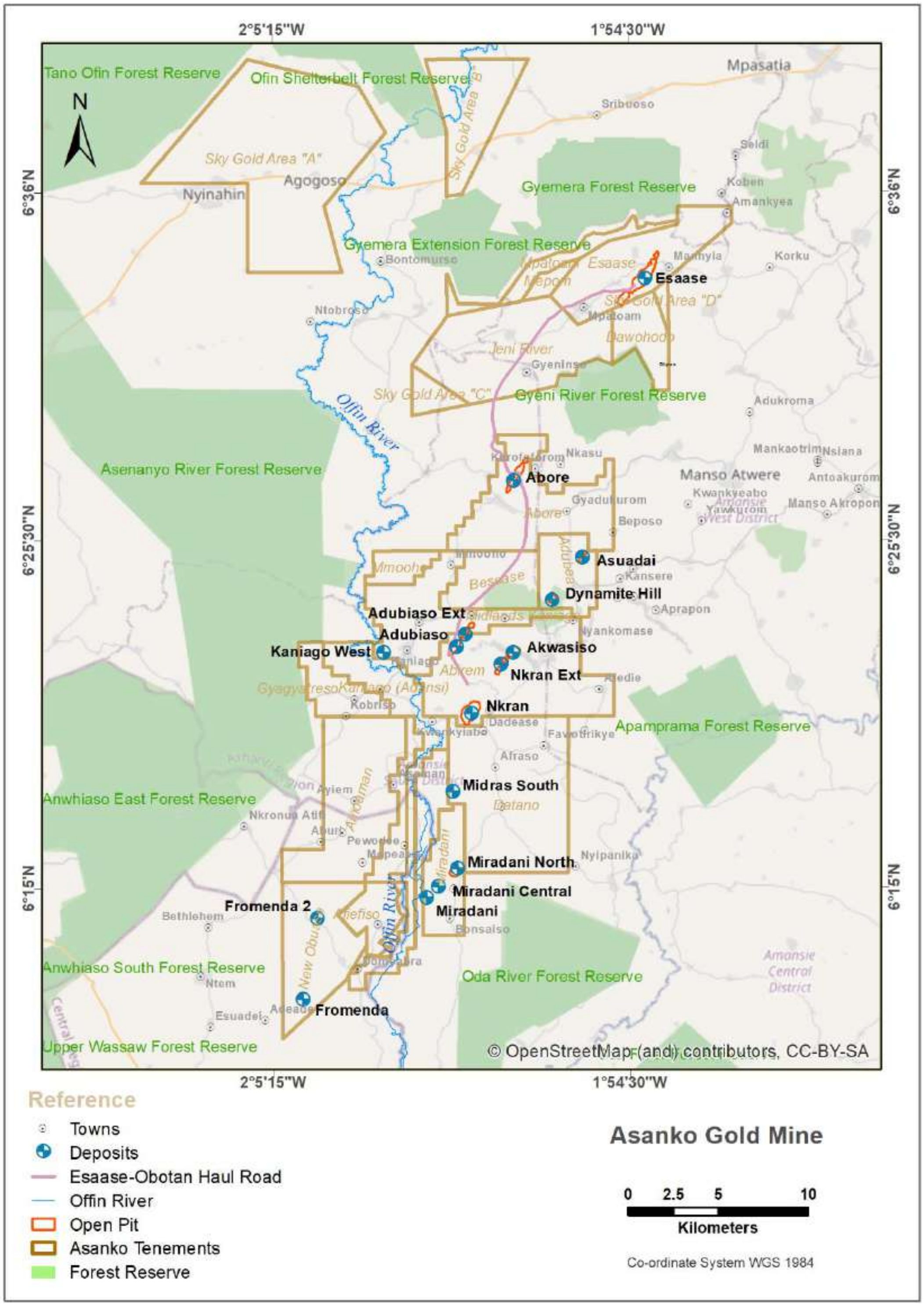


Figure 1-1 Location of the Asanko Gold Mine Tenements

Source: Asanko Gold Mine, 2021

Table 1-1 Asanko Gold Mine Mining Lease and Prospecting Concession Areas

Name	Mincom Ref#	Licence area (km^2)	Type	Status/ Expiry date	Ownership
Abore	PL 6/352	28.47	Mining Lease	Valid-ML 4/2030	Asanko – 100 %
Abirem	PL 6/303	47.13	Mining Lease	Valid-ML 3/2026	
Adubea	PL 6/310	13.38	Mining Lease	Valid-ML 4/2030	
Miradani	PL 6/122	14.98	Mining Lease	Valid-ML 5/2025	Asanko – 100 %
Esaase	PL 6/8 Vol 8	27.03	Mining Lease	Application, All relevant documents and payment made for renewal of ML. Awaiting Ministerial Approval.	
Jeni River	RL 6/21	27.37	Mining Lease	Application, All relevant documents and payment made for renewal of ML. Awaiting Ministerial Approval.	
Kaniago	PL 6/307	25.5	Prospecting	Application, All relevant documents and payment made for renewal of PL. Awaiting Ministerial Approval	Asanko – 100 %
New Obuase	PL 3/84	33.67	Prospecting	Application, All relevant documents and payment made for renewal of PL. Awaiting Ministerial Approval	
Datano	PL 6/32	53.78	Mining Lease	Valid-ML 5/2030	
Mepom	Pl 6/245	2.37	Prospecting	*Note 1*	Asanko – 100 %
Dawohodo	PL 6/43	10.00	Prospecting	Valid-PL 12/2023	
Sky Gold	RL 6/86	91.50	Reconnaissance	Application, All relevant documents and payment made for renewal of RL. Awaiting Ministerial Approval. *Note 2*	Asanko – 100 %
Kaniago	PL 6/289	25.27	Prospecting	Application, All relevant documents and payment made for renewal of PL. Awaiting Ministerial Approval	Asanko – 100 %
Besease	PL.6/120	15.55	Prospecting	Valid-PL 12/2023	
Mmooho	PL 6/352	5.70	Prospecting	Valid-PL 12/2023	
Gyagyatreso	PL6/32	10.83	Prospecting	Application, All relevant documents and payment made for renewal of PL. Awaiting Ministerial Approval	
Amoaman	PL6/380	43.47	Prospecting	Valid-PL 11/2022	

Note 1: Mepom License renewal pending since 2012. In process of being merged with Esaase ML
Note 2: License conversion from RL to PL pending since 2012.

All concessions carry a 10% free carried interest in favour of the Ghanaian government and as a result, the Ghanaian government holds a 10% interest in AGGL. All mining leases are also subject to a 5% Net Smelter Return (NSR) royalty payable to the Government of Ghana. In addition, the Adubea mining concession is subject to an additional 0.5% NSR royalty to the original concession owner. The Esaase mining lease is also subject to an additional 0.5% NSR royalty to the Bonte Liquidation Committee (BLC). The Akwasiso deposit on the Abirem mining lease is also subject to an additional 2% NSR royalty payable to the original concession owner.

1.3 Geology and Mineralization

The geology of Ghana is largely underlain by the West African craton. The craton consists of the Man-Leo (or Kénéma-Man) shield in the south (extending from Ghana to Senegal) and the Archaean Reguibat Shield in Mauritania to the north. They are separated by overlying younger sedimentary rocks of the Taoudeni Basin (see Figure 1-2).

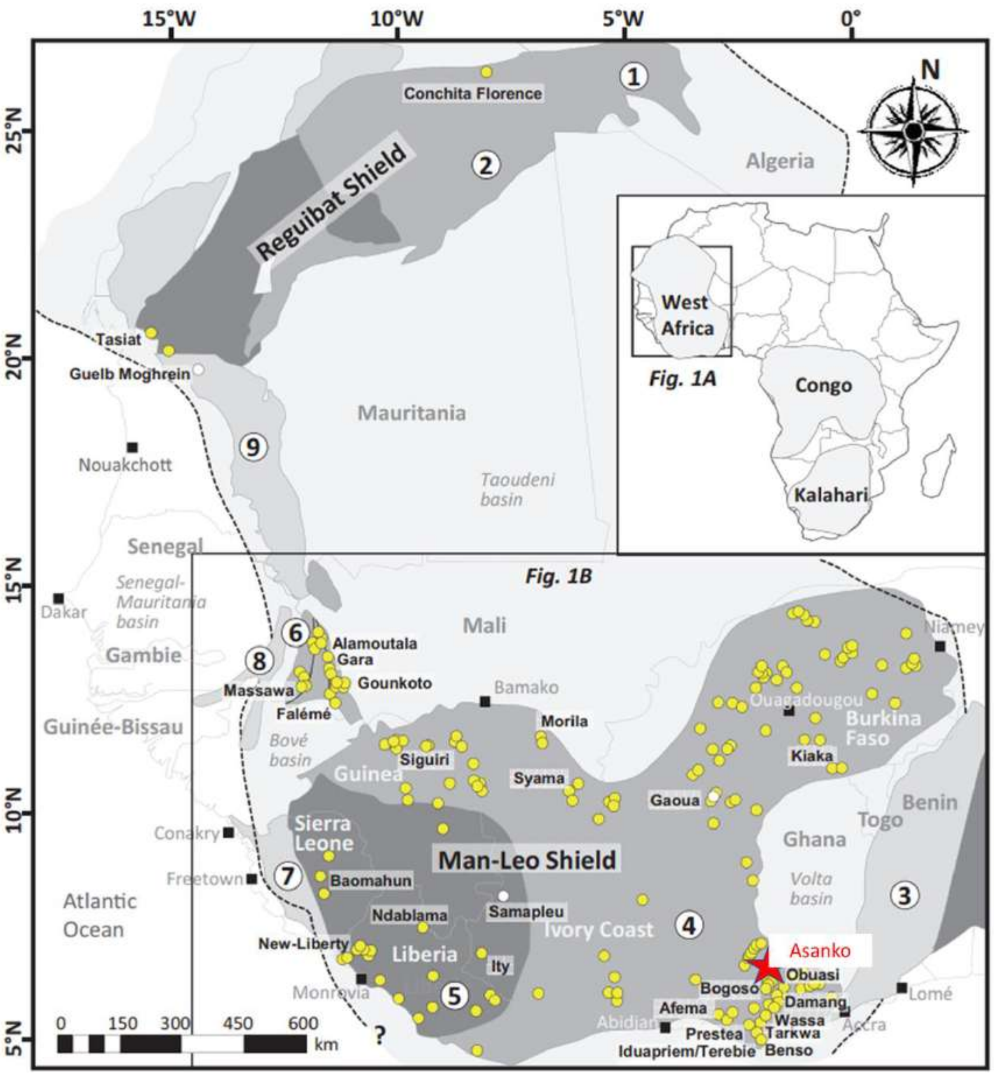


Figure 1-2 Simplified Map of the West African Craton, with Associated Gold Deposits (Modified from Goldfarb et al, 2017)

Note: Numbers 1 to 9 outline the different Archean, Proterozoic, and Hercynian domains: 1 = Eglab, 2 = Yetti, 3 = Daomeyan, 4 = Baoulé-Mossi, 5 = Kenema-Man, 6 = Kédougou-Kénébia Inlier, 7 =Rokelides, 8 = Bassarides, 9 = Mauritanides

At the regional scale, the AGM deposits are in the Paleoproterozoic Birimian Supergroup within the Man-Leo Shield in the southeast West Africa Craton. The Birimian Supergroup rocks consist of five NNE-trending greenstone belts composed of calc-alkaline or tholeiitic volcanic rocks separated by wide intervening sedimentary basins formed during two major orogenic phases between 2.25 to 2.15 Ga and 2.12 to 2.06 Ga. Magmatic episodes affecting the Birimian Supergroup rocks include Tonalite-Trondhjemite-Granodiorite emplacement (2.17-2.21 Ga), Granodiorite and Granite intrusions (2.12 and 2.09 Ga), and Granite intrusions (2.11 to 2.07 Ga).

Orogenic gold mineralization in the Birimian Supergroup occurs as quartz-vein-hosted and disseminated sulphide most developed between 2.2 Ga and 1.8 Ga. Peak gold mineralization in the West African Craton occurred at approximately 2.15–2.10 Ga and produced very large (>10 Moz) gold deposits associated with regional northeast–southwest trending shear zones.

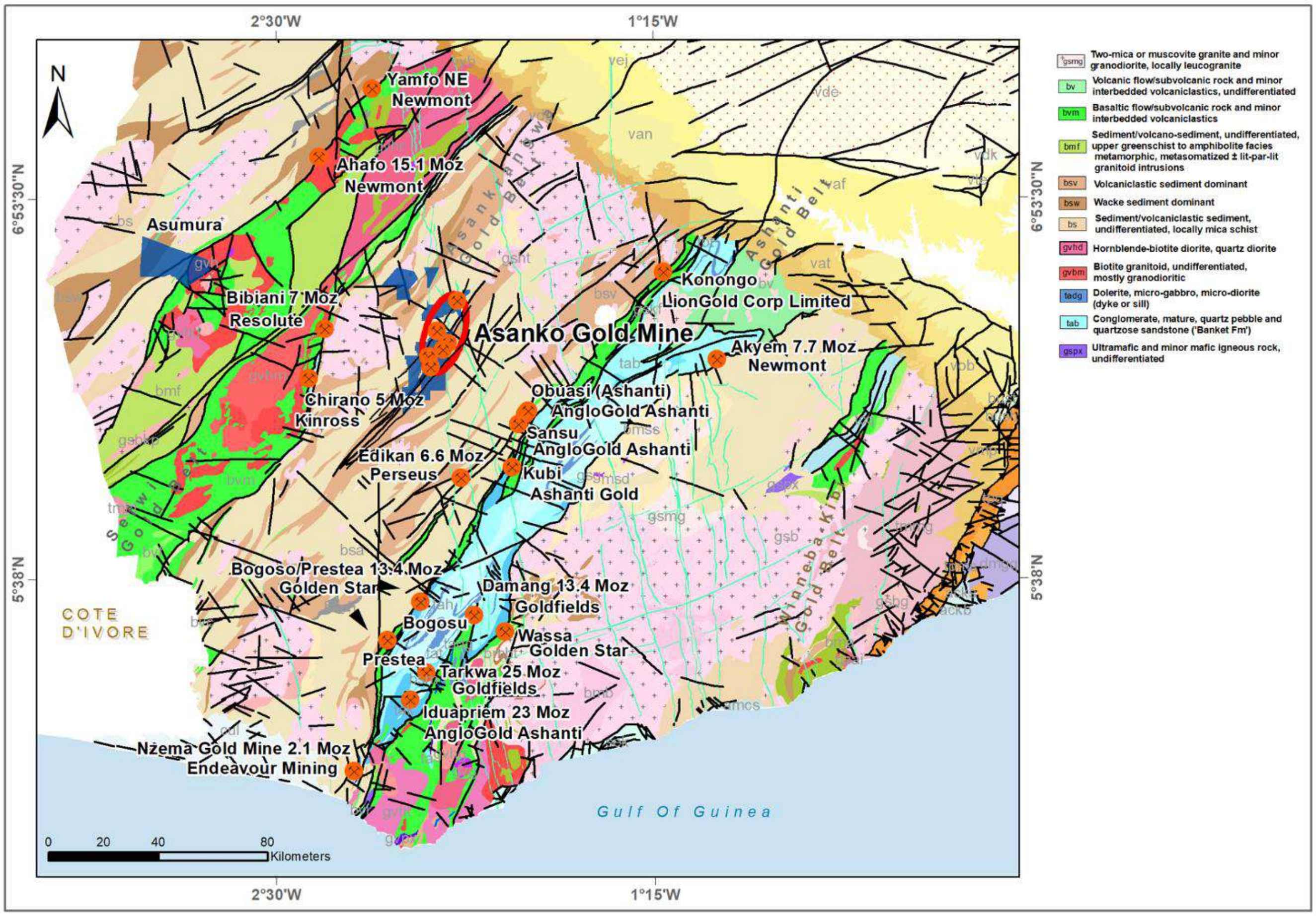


Figure 1-3 Regional Geology of Southwest Ghana Around AGM Concessions

Source: Ghana Geological Survey; CJM, 2014

At the local scale, the AGM deposits are in the Asankrangwa Gold Belt, a complex of northeast-trending shear zones along the central axis of the Kumasi Basin, which is one of the intervening basins between the greenstone belts. The Kumasi Basin is heavily faulted and consists of an isoclinally folded sequence of metasedimentary rocks. The basin is bound to the southeast by the Ashanti Fault/Shear and the Bibiani shear to the northwest. The regional 35-40° trending Nkran Shear, a zone of about 15 km in width, traced on a northeast to southwest trend for some 150 km hosts the Nkran, Asuadai, Dynamite Hill, and Akwasiso deposits. The parallel Esaase Shear Corridor hosts the Esaase, Adubiaso, and Abore deposits. The Miradani Shear Corridor hosts the Miradani deposit.

At the property scale, the AGM deposits are hosted along a 7 km wide and 50 km long segment of the Asankrangwa structural corridor locally coincident with magnetic lows and jogs along the NE trending shears. Quartz veins and disseminated sulphides are hosted in rocks ranging from granite and tonalite to sandstone, siltstone, and shale. Structural controls on gold mineralization include linking, conjugate, and tensional quartz veins associated with D2 shears.

1.4 Exploration and Drilling

Systematic exploration at the Asanko Gold Mine concessions includes regional generative and near mine programs, targeting new gold deposits as well as further delineation of Mineral Resources.

Multiple soil geochemical surveys have been undertaken on the AGM licences by various explorers. Since 2017, a total of 1,246 surface geochemical samples (grab, soil, stream sediment) have been taken across the AGM concessions with the focus on generation of greenfield targets.

Geophysical surveys over the property have included regional aeromagnetic imaging of the Ashanti Belt and adjacent Kumasi Basin by the Ghana Geological Survey, as well as induced potential (IP) ground geophysical surveying and airborne VTEM and magnetic survey centred over specific targets.

Surface drilling at the AGM includes reverse circulation (RC), diamond drill hole (DDH) and reverse circulation with diamond tail (RCD). Drilling for Mineral Resource delineation focused on Nkran, Esaase, Miradani North, Dynamite Hill and Abore, although extensive drilling has also been undertaken at Akwasiso and Adubiaso. To date, a combined total of 4,773 aircore, DDH, RC, and RCD drill holes totalling 652,425 m have been drilled at the AGM deposits.

1.5 Metallurgical Testwork and Recoveries

1.5.1 Esaase

The 2021 testing (ALS report A22281) returned recovery results for the bulk composites that align with those from the 2018/19 testwork programs. As such, no change has been made to the recovery estimates as per the Asanko Gold NI 43-101 Technical Report (2020) for the purpose of constraining the current Mineral Resource estimate.

These recovery estimates, based on lithological source/type, are calculated according to the equations in Table 1-2. The recovery estimates are of sufficient confidence to determine reasonable prospect for eventual economic extraction; however, in light of recent plant performance of the Esaase material, further understanding of the Esaase metallurgical variability is required to have sufficient confidence to declare Mineral Reserves.

Table 1-2 Head Grade Recovery Model Correlations

Material Source	Head Grade Recovery Correlation	M (slope)	C (coefficient)
Upper (Fresh/Trans)	y = 9.600ln(x) + 82.260	9.60	82.26
Cobra (Fresh/Trans)	y = 15.532ln(x) + 56.020	15.5	56.02
Central (Fresh/Trans)	y = 6.202ln(x) + 85.792	6.20	85.79
Python (Fresh/Trans)	=upper	9.60	82.26
Other (Fresh/Trans)	=upper	9.60	82.26
Material Type		**Residue Value Au (g/t)**	
Esaase Oxides*		0.10	
Recovery Discount Factor (due to Soluble Gold Losses & Carbon Losses)		0.5%	

Note: * *A fixed residue grade has been applied to the Esaase Oxide material*

Although the variability composites testing completed in 2021 (A22281) indicated an upside to these recovery estimates, the results are not applied herein. The rationale behind deferring reliance on the higher recoveries obtained in the testing is twofold:

1. Current plant performance is yielding lower recoveries than previously modelled in equivalent spatial locations within the Esaase deposit. The deviation between actual plant performance and modelled recovery will need to be further examined to determine the cause and the extent to which this may persist within the deposit
2. The variability testing, although indicative of an upside to 90.1% average recovery, may require revised plant operating protocols

The Company is working to better understand the cause(s), magnitude and impact of the observed lower recovery, and to quantify the magnitude of benefits from a series of opportunities that have been identified. Previous metallurgical testwork demonstrated significant improvements in gold recovery from preg-robbing material through kerosene or diesel pre-conditioning, followed by addition of fresh or regenerated activated carbon.

1.5.2 Nkran

Past gold recoveries from processing of the Nkran ore (2017 to 2019) averaged 94%. By way of confirmation testing, a suite of 7 diamond drill (DD) (half split of HQ diamond core) intervals were dispatched to ALS, Perth. Lithologies tested included granites (2), sandstones (4) and siltstone (1).

The simple average recovery from these tests was 95.3%. Allowing a 0.3% discount for operational losses, the resultant 95% recovery confirms the past processing results (94%) may be applied for further Nkran material processing.

1.5.3 Abore

A suite of metallurgical testwork was undertaken in 2021 on 7 DD core composites at ALS, Perth. The objective was to confirm that recoveries would align with those of past performance. Resolute mining and processing activities in 2002 returned overall recovery of 95%.

A total of 124 m of core was dispatched, with each interval composite averaging 18 m in length. Six of the composites were classified as granite while the seventh as a blend of granites (27%) and sandstones (73%). Granites constitute an estimated 85% of the Abore fresh ore zone tonnage.

The average recovery from these tests stands at 93.3% which includes a deduction for losses in processing. Taking into account past production recoveries realized by Resolute in the oxide and transitional zones yield overall recoveries of 95%. 94% recovery value is considered reasonable for the overall Abore recovery.

1.5.4 Miradani North

A total of 259 x 1 m core samples from 11 drill holes were delivered to ALS, Perth in June of 2021. Samples were selected based on available HQ drill core and considered mineralized lithologies which are predominantly in the intrusives (granites/tonalites) and the sediments along its peripheries (sandstones, siltstones, and intercalations of the two).

Results averaged 97.2% for oxide, 94.0% for transition, and 93.4% for fresh material. An overall value of 94% recovery value is concluded for the Miradani North material.

1.5.5 Akwasiso

Akwasiso represents a smaller scale version of Nkran, with mineralization hosted in shears on siltstone/sandstone contacts, and around and within the granitic intrusive. Strong alteration zones are associated with higher grades around the sandstone-granite contact. Mineralization is hosted in the sandstone unit with gold occurring within quartz-carbonate veins, similar to the other deposits in the belt.

Akwasiso is currently being fed to the process plant as a minor tonnage contributor along with the predominant Esaase mill feed. A 94% gold recovery value is attributed to this small satellite deposit.

No new testwork was conducted for the Akwasiso deposit.

1.5.6 Dynamite Hill

Dynamite Hill ore had been processed between November 2017 and August 2019. This was complementary to the main mill feed sourced from the Nkran pit and was at no stage processed in isolation.

Overall plant recoveries averaged 94% during this period, regardless of the Dynamite Hill component. The attributable recovery from future mill feed is therefore assumed to be in line with past production at 94%.

No new testwork was conducted for the Dynamite Hill deposit.

1.5.7 Adubiaso

Adubiaso ore had been mined and processed through the Resolute plant from November 1999 to December 2000. The ore was complimentary mill feed to that of Nkran ore. Over the period Adubiaso ore accounted for an average of 34% of the mill feed tonnage.

During this period, gold recoveries were slightly greater than 96%. A slightly conservative gold recovery of 94% has been applied for future performance from this pit.

No new testwork was conducted for the Adubiaso deposit.

1.6 Mineral Resource Estimates

The effective date of the Mineral Resource is February 28, 2022, and comprises eight deposits, which have been combined into a global Mineral Resource table (Table 1-3).

Table 1-3 Summary of the Mineral Resource at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

	Measured			Indicated			Measured + Indicated			Inferred		
	Tonnes	Grade	Au Contained	Tonnes	Grade	Au Contained	Tonnes	Grade	Au Contained	Tonnes	Grade	Au Contained
Deposit	**(Mt)**	**(g/t)**	**(koz)**	**(Mt)**	**(g/t)**	**(koz)**	**(Mt)**	**(g/t)**	**(koz)**	**(Mt)**	**(g/t)**	**(koz)**
Nkran				12.1	2.09	814	**12.1**	**2.09**	**814**	1.3	2.23	96
Esaase	10.9	1.25	437	11.7	1.27	475	**22.6**	**1.26**	**912**	0.6	1.22	25
Akwasiso				1.7	1.31	69	**1.7**	**1.31**	**69**	0.2	1.46	7
Abore	3.2	1.46	150	5.1	1.23	203	**8.3**	**1.32**	**353**	1.1	1.55	55
Adubiaso				1.6	1.80	90	**1.6**	**1.80**	**90**	0.2	1.38	9
Asuadai				1.6	1.29	67	**1.6**	**1.29**	**67**	0.0	1.17	1
Miradani				7.1	1.28	293	**7.1**	**1.28**	**293**	2.6	1.21	102
Dynamite				1.9	1.39	85	**1.9**	**1.39**	**85**	0.3	1.26	14
Stockpiles	9.5	0.72	221				**9.5**	**0.72**	**221**			
Total	**23.6**	**1.06**	**808**	**42.7**	**1.53**	**2,096**	**66.4**	**1.36**	**2,904**	**6.4**	**1.49**	**309**

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion up to and including February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software at gold price of $1,600/oz. Mining, G&A, processing costs, and process recovery are dependent on deposit and detailed in the respective deposit sections.*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

The Mineral Resource estimates for the Esaase and Abore deposits have been prepared by Mario E. Rossi, FAusIMM, SME, IAMG, and Principal Geostatistician of Geosystems International Inc. Mr. Rossi is independent of Galiano Gold in accordance with the application of Section 1.5 of National Instrument 43-101.

The Mineral Resource estimate for Nkran has been prepared by Malcolm Titley, MAIG, MAusIMM who is a Principal Consultant of CSA Global. Mr. Titley is independent of Galiano Gold in accordance with the application of Section 1.5 of National Instrument 43-101.

The Mineral Resource estimates for Akwasiso, Miradani North, and Dynamite Hill have been prepared by Eric Chen, P.Geo. who is Galiano Gold's former Vice President of Technical Services. The Mineral Resource estimates for Adubiaso, Asuadai and Stockpiles have been prepared by others and reviewed and accepted by Mr. Chen. Mr. Chen is not independent of Galiano Gold in accordance with the application of Section 1.5 of National Instrument 43-101.

1.7 Mineral Reserves

At the time of the effective date of this Report, there remains an uncertainty in the variability of metallurgical recovery of gold from the Esaase deposit. Although all metallurgical testwork to date indicate predictable trends in the recovery of gold from the Esaase deposit, recent mill feed consisting of primarily Esaase material has demonstrated lower recovery. As a result, the Company has concluded that there is insufficient confidence in the understanding of the Esaase metallurgical variability to estimate Mineral Reserves.

Given the uncertainty of metallurgical performance on the Esaase material, Galiano Gold has decided not to state Mineral Reserves for all deposits. Any plant feed in the short term will have significant Esaase material present and overall recovery would therefore be difficult to predict.

Only the Esaase material is believed to be performing adverse to expectations. Recovery of gold from Nkran and all other satellite deposits remain of sufficient confidence, but will be subject to additional metallurgical testwork. Upon conclusion of the planned metallurgical testwork, Galiano Gold will prepare an updated technical report supporting an optimized life of mine plan, based on Mineral Reserves.

1.8 Mineral Processing

The existing AGM process plant located at Obotan is capable of processing approximately 5.8 Mtpa of total mill feed. Esaase material is being processed at present with supplementary feed from Akwasiso.

The key process operating criteria are shown in Table 1-4 and the process block flow diagram in Figure 1-4.

Table 1-4 Process Plant Operating Criteria

Parameter	Units	Value
Crushing plant running time	Hours/annum (hpa)	5,957
Crushing plant feed rate	Tonnes per hour (tph)	975
Milling and carbon in leach (CIL) plant running time	hpa	7998
Milling and CIL plant feed rate	tph	725
Life of Mine (LOM) Au head grade	g/t	1.38
LOM gravity gold recovery	%	50
Run of Mine (ROM) feed size (F_{100})	mm	800
Semi-autogenous (SAG) mill feed size (F_{100})	mm	270
SAG mill feed size (P_{80})	mm	90
Leach feed size (F_{80})	µm	106
CIL retention time (8 stages)	hr	17.4
CIL slurry feed density	% w/w	50.2
CIL feed gold grade	Au g/t	0.69
LOM average CIL cyanide (NaCN) consumption	kg/t	0.45
LOM average lime (CaO) consumption	kg/t	0.98
Elution circuit type		Split AARL
Elution circuit size	t	5
Frequency of elution	batches/day	2

Note: AARL – Anglo American Research Laboratories

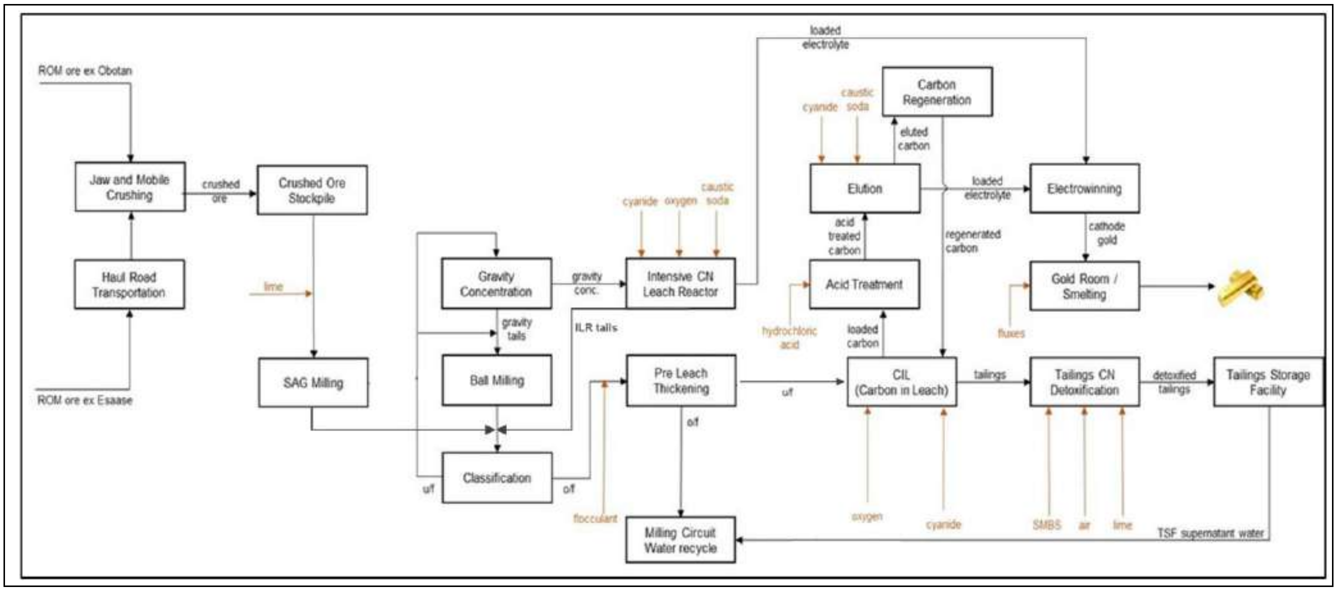


Figure 1-4 Process Plant Block Flow Diagram

1.9 Infrastructure

The process plant commenced production in early 2016 and was erected close to the Nkran deposit and several satellite orebodies. The plant is currently processing approximately 5.8 Mtpa of material.

Current site infrastructure at Obotan includes:

- An established mining operation with various structures, including offices, stores, workshops and fuel storage facilities
- A process plant with various structures, including offices, stores, workshops and reagent storage / mixing facilities
- An administration block, training facilities, exploration offices, core storage area, clinic and analytical laboratory
- Senior and junior accommodation facilities located to the west of the Nkran pit
- Tailings Storage Facility
- Waste rock dumps at Nkran, Akwasiso, and Dynamite Hill
- Multiple operating boreholes for water supply
- Water treatment plant (construction in progress)
- A 161 kV incoming power line from the Asawinso substation
- Mobile communications facilities. A Vodafone tower is located at the Obotan camp and MTN connectivity is also available.

Current infrastructure at Esaase includes:

- An exploration camp and office
- A geological core shed
- Basic camp requirements such as a clinic, offices, kitchen, accommodation, potable water services, power supply, IT connectivity, radio communications and sewage system

- Mine service facilities, including mobile equipment workshops, wash bays, fuelling stations, and administrative buildings
- Water treatment plant
- Waste rock dumps
- Community services including hospital and community boreholes
- 33 kV overhead power line supplied by the Electricity Company of Ghana (ECG).

1.10 Environmental

Two key regulatory permits were required for the AGM as follows:

- The Mine Operating Permits (MOP) issued by the Minerals Commission in respect of mining leases
- The Environmental Certificate issued by the EPA in respect of mining operations.

Following the required engagements, regulatory site visits, and submission of the relevant documentation, the AGM has successfully obtained and renewed its Mine Operating Permits since commencement of operation in 2016 and is currently operating under the 2021 MOPs issued on January 12th, 2021 in respect of the following leases, all of which form part of the operational complex of the Asanko Gold Mine:

- LVD 7299/2013 located at Abirem
- LVD 21721/2012 located at Adubea
- LVD 21722/20 located at Abore
- LVD 3969A/90 located at Esaase
- LVD 8979A/95 located at Miradani
- LVD 5174/2012 located at Datano

The latest Environmental Certificate for the AGM (gold mining and mineral processing) was issued on July 30th, 2021 and is valid for three years following which it will be due for renewal.

The AGM is currently implementing a preventative approach to environmental management with the primary objective of avoiding negative environmental impacts from the operational activities, whilst maximising positive benefits. Where inevitable, the AGM seeks to minimize such negative impacts through appropriate mitigation measures. This approach fulfils the aspirations of the corporate policy on the environment, environmental performance management systems, and various impact-specific environmental action plans.

The AGM's reclamation objective is to ensure that the site is left in a condition that is safe and stable where long-term environmental impacts are minimized and any future liability to the community and future land use restrictions are minimized.

The final post-mining land use will be determined in consultation with the EPA, other Ghanaian government institutions, stakeholders, and local communities. Natural soil covers and vegetation will as far as possible be re-established over the disturbed areas.

1.11 Risks and Opportunities

The following risks have been identified:

- Recent plant performance from predominantly Esaase fresh and transitional material has shown lower gold recoveries compared with the 2021 and prior metallurgical testwork as described in Section 13
- Variable nature of stockpiles: ability to accurately predict grades and recoveries in large continuous volumes of material

- Escalation of labour and material costs
- Gold price volatility

The following opportunities have been identified:

- Recovery upside - 2021 metallurgical testwork (A22281) for Esaase material demonstrated that an average recovery of above 90% is achievable. This program yielded slightly higher recoveries compared to previous metallurgical testwork at Esaase. It is indicative of upside potential to the current Esaase recovery estimates
- Metallurgical testwork has demonstrated that pre-treatment of Esaase carbonaceous material yields significant improvement in recovery in bench scale CIL tests. Additional work is required to investigate the applicability of kerosene pre-treatment in the plant environment
- Mass pull of the gravity concentrate can be increased with minor operational adjustments, which could yield better overall plant recovery
- Optimization of carbon management practices to introduce fresh or regenerated carbon to early stages of CIL is expected to partially mitigate effects of preg-robbing as demonstrated in previous metallurgical testwork
- Nkran Deeps (Underground potential) – Mineralization at Nkran remains open down plunge and extensions of the deposit would likely be amenable to underground mining methods. Additional deep drilling has commenced to explore the underground potential at Nkran.
- Miradani Deeps (Underground potential) – A well-defined steeply northeast plunging shoot is evident in longitudinal section through the deposit. This high grade +80 gold gram meters (gm.m) shoot remains open at depth. Further drilling has commenced to explore for extensions and repetitions to this high grade zone.
- Other exploration prospects as described in Section 9 provide additional opportunities to add to the Mineral Resources.

1.12 Conclusions and Recommendations

The AGM is a large scale, multi-deposit gold asset that is managed and operated by Galiano Gold. Since declaring commercial production, the AGM has produced on average 230,000 oz of gold per year, with record production of approximately 251,000 oz in 2019. AGGL holds the largest land package of the highly prospective and underexplored Asankrangwa Gold Belt.

As at the effective date or the report, the AGM comprises of eight deposits which contain 2.9 Moz Au of measured and indicated Mineral Resources, and 0.3 Moz Au of inferred Mineral Resources.

As at the effective date of this Report, Galiano Gold is not in a position to declare Mineral Reserves on the AGM property as a result of current metallurgical uncertainty of the Esaase material. AGM is in the process of investigating options for mitigating the issues, which will subsequently lead to a revised optimized mine plan. At that time, Galiano Gold will prepare an updated technical report supporting the new life of mine plan, based on Mineral Reserves.

This will be facilitated by the fact that the AGM is an established operation with a processing plant, site infrastructure, permits, and organizational capability already in place to readily support a future LOM.

Additional work programs are taking place concurrently to optimize capital and operating costs, ensure best practices in relation to the size and scope of the operations, infill drilling to improve the confidence in the Mineral Resource estimates, and drill mid- and long-term exploration prospects to accelerate addition of new Mineral Resources and provide more flexibility in mine planning.

2 INTRODUCTION

2.1 Terms of Reference

The Company is a gold mining company listed on the TSX and NYSE, with headquarters at 1640-1066 West Hastings Street, Vancouver, British Columbia (https://www.galianogold.com/). The Company's flagship project is the jointly owned Asanko Gold Mine. Galiano Gold and Gold Fields Limited (JSE & NYSE: GFI) jointly each own a 45% interest in Asanko Gold Ghana Limited, with the Government of Ghana retaining a 10% free-carried interest. The AGM concessions are owned 100% by Asanko Gold Ghana Limited.

The AGM is a large scale, multi-deposit gold asset, which is managed and operated by Galiano Gold. The mine was built in 2015, with first gold poured in January 2016, and commercial production commencing in April 2016. The AGM has produced an average of approximately 230,000 ounces of gold per year between 2017 to 2021 and had a record gold production of approximately 251,000 ounces in 2019. AGGL holds the largest land package on the highly prospective and underexplored Asankrangwa Gold Belt.

The AGM is a multi-deposit complex with two main deposits, Nkran and Esaase, six satellite deposits and a carbon-in-leach processing plant with a current operating capacity of approximately 5.8 Mtpa.

This Report is a National Instrument 43-101 Technical Report that summarizes the AGM and its updated Mineral Resources effective February 28, 2022. This Report updates all material information on the AGM, is addressed to Galiano Gold, supports the disclosure of updated Mineral Resource estimates and supports the scientific and technical content in Galiano Gold's Annual Information Form filing.

As at the effective date of this Report, Galiano Gold is not in a position to declare Mineral Reserves on the AGM property as a result of current metallurgical uncertainty of the Esaase material. AGM is in the process of investigating options for mitigating the issues, which will subsequently lead to a revised optimized mine plan. At that time, Galiano Gold will prepare an updated technical report supporting the new life of mine plan, based on Mineral Reserves.

Any references to "ore" apply to production during time periods when Mineral Reserves were stated.

The Report supersedes the following historical reports:

- NI 43-101 Technical Report for the Asanko Gold Mine, Ghana (Amended and Restated) in June 2020
- Definitive Feasibility Study (DFS 2017) prepared by DRA Projects (Pty) Limited on behalf of Asanko Gold Inc (Asanko Gold)
- Amended NI 43-101 Technical Report in December 2017. Amendments involved changing the Mineral Resource gold price from US$2,000 per ounce (/oz) to US$1,500/oz, and to remove the Inferred Resource from the economic analysis.
- NI 43-101 Technical Report prepared by DRA Projects (Pty) Limited on behalf of Asanko Gold Inc in June 2017

2.2 Qualified Persons

The list of Qualified Persons involved in the compilation of this Report are shown below:

Name:	Richard Miller, P.Eng.
Company:	Galiano Gold Inc.
Date of Last Site Visit:	October 14 to 21, 2021
Sections:	1.1, 1.2, 1.7, 1.9 to 1.12, 2, 3, 4, 5, 15, 16, 18, 19, 20.1 to 20.8, 21, 22, 24, 25.1, 25.2, 25.6, 25.9, 25.10, 26.4, 27
Details of Visit:	Mr. Miller visited the property from October 14 to 21, 2021. During this personal inspection of the property, he participated in sustainability, operational and technical services meetings, 2022 budget presentations, and attended technical trips to see existing infrastructure and each of the mining areas.

Name:	Greg Collins, MAusIMM(CP)
Company:	Galiano Gold Inc. (Former)
Date of Last Site Visit:	October 12 to November 4, 2021
Sections:	1.3, 1.4, 6, 7, 8, 9, 10, 11, 12, 23, 25.3, 25.4, 26.3
Details of Visit:	Mr. Collins' initial site visit was from February 10 to May 5, 2021. During this personal inspection of the property, he visited all main exploration sites, drill rigs, logging and sample preparation facilities. He also participated in budget presentations and site based operational meetings. Most recent visit to site was October 12 to November 4, 2021 to conduct similar work.

Name:	Eric Chen, P.Geo
Company:	Galiano Gold Inc. (Former)
Date of Last Site Visit:	September 14 to 30, 2021
Sections:	1.6, 12.1, 14.0, 14.4, 14.5, 14.6, 14.7, 14.8, 25.5, 26.2
Details of Visit:	Mr. Chen most recently visited the property on September 14 to 30, 2021. During this personal inspection of the property, he participated in LOM and budget reviews, and conducted reviews of the grade control process, reconciliation, short-term planning, pit mapping, grade control modelling, sampling procedures, and mine geology data management. He also reviewed Esaase drill core re-logging, geology and geometallurgical modelling, metallurgical sampling and recovery modelling for the AGM deposits.

Name:	Alan Eslake, FAusIMM
Company:	Asanko Gold Ghana Limited
Date of Last Site Visit:	Resides on Site
Sections:	1.5, 1.8, 13, 17, 25.7, 25.8, 26.1
Details of Visit:	Mr. Eslake has been site based since December 2020. His areas of focus include production enhancement projects and supervision of both internal and external metallurgical testwork programs.

Name:	Mario E. Rossi, FAusIMM
Company:	GeoSystems International Inc.
Date of Last Site Visit:	March 18 to April 1, 2021
Sections:	14.1, 14.2, 25.5
Details of Visit:	Mr. Rossi visited the property from March 18 to April 1, 2021. During this personal inspection of the property, he participated in operational and technical services meetings related to the Esaase deposit; visited the Esaase mine operation; viewed mineral exposures in the pit; visited the core storage facility; and had discussions regarding data used in the geologic and resource models, as well as the reconciliation (production) data from the mine. He also visited other Asanko Gold deposits in the area, specifically Abore and Nkran.

Name:	Malcolm Titley, MAusIMM, MAIG
Company:	CSA Global Ltd.
Date of Last Site Visit:	January 16 to 22, 2020
Sections:	14.3, 25.5
Details of Visit:	Mr. Titley most recently visited the property from January 16 to 22, 2020. During this personal inspection of the property, he participated in operational and technical services meetings and focused on analysis and site personnel training for end-of-month reconciliation processes and results. Mr. Titley completed technical trips to review sampling and geology mapping process at each of the mining areas.

Name:	Benoni Owusu Ansah, P.E., MGhIE, MASCE, MGGS, MGhIGS
Company:	Knight Piésold (West Africa)
Date of Last Site Visit:	December 16, 2021
Sections:	20.9
Details of Visit:	Mr. Ansah conducts regular visits since 2019 for various design, construction, and safety audits, with most recent visit on December 16, 2021. During this personal inspection of the property, he provided engineering and construction QAQC to support the ongoing TSF Stage 6 Expansion. He also observed performance of the active TSF (Stage 5 Basin) relative to design/operation intent.

2.3 References and Information Sources

All references and information sources are listed in Sections 3 and 27.

Mineral tenure, legal and environmental information on the Asanko Gold Mine was prepared by subject matter experts under the supervision of Frederick Attakumah, Executive Vice President and Managing Director for Asanko Gold Ghana Limited. This information provided the basis of the expert report referenced in Section 3.1.

2.4 Units, Currency and Abbreviations

Unless otherwise stated, all currencies are expressed in US dollars (US$), with metric units applied throughout this Report.

'Section' and 'Item' have been used interchangeably in this Report.

Abbreviations and units are shown in Table 2-1.

Table 2-1 Abbreviations and Unit of Measurement

Abbreviation/Unit of Measurement	Description
%	Percent
% w/w	% of Solids Mass In Liquid Mass
°	Degrees
°C	Degrees Celsius
µm	Micron
2.5H:1V	2.5 Horizontal: 1 Vertical
3D	Three-Dimensional
AAGM	Akrokerri-Ashanti Gold Mines
AARL	Anglo American Research Laboratories
AAS	Atomic Absorption Spectrometry
AB	Air Blast
ABR	Abore
AC	Activated Carbon
ADU	Adubiaso
AERC	African Environmental Research and Consulting
AG	Auger
Ag	Silver
AGA	Anglogold Ashanti
AGF	Associated Gold Fields
AGGL	Asanko Gold Ghana Limited
AGM	Asanko Gold Mine
AHP	Analytical Hierarchy Process
AIG	Australian Institute of Geoscientists
AKW	Akwasiso
ALS	Australian Laboratory Services (Pty) Limited
ANCOLD	Australian National Committee on Large Dams
ARD	Acid Rock Drainage
As	Arsenic
ASU	Asuadai
Au	Gold
AusIMM	Australasian Institute of Mining and Metallurgy
BAIS	Best Applicable Industry Standards
BD	Bulk Density
BGM	Bonte Gold Mines
BIF	Banded Iron Formation
BLC	Bonte Liquidation Committee
BLEG	Bulk Leach Extractable Gold
BOCO	Base of Complete Oxidation
BV	Bed Volume
CGSC	Corporate Geoscience Group
CIC	Community Information Centres

Abbreviation/Unit of Measurement	Description
CIL	Carbon In Leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	Centimetre(s)
CMP	Composite
CN	Cyanide
CNWAD	Weak Acid Dissociable Cyanide
COEF	Coefficient
COG	Cut-off Grade
C_{org}	Organic Carbon
COS	Coarse Ore Stockpile
CP	Competent Person
CRM	Certified Reference Material
CSL	Compacted Clay Liner
CSV	Comma Separated Value
CTS	Central Technical Services
Cu	Copper
CV	Coefficient of Variation
DC	Diamond Core
DD	Diamond Drill
DDH	Diamond Drill Hole
DFS	Definitive Feasibility Report
DH	Drill Hole
DI	Diorite
DMP	Dust Management Plan
EBSZ	Eastern Bounding Shear Zone
ECG	Electric Company of Ghana
EGL	Equivalent Grinding Length
EIA	Environmental Impact Assessment
EIS	Environmental Impact Study
EM	Electromagnetic
EMP	Environmental Management Plan
EMS	Environmental Management Systems
EOH	End of Hole
EOM	End of Month
EPA	Environmental Protection Agency
EPMA	Electron Probe Microanalysis
ESE	East-South-East
ESIA	Environmental and Social Impact Assessment
ESM	Esaase Main
ESS	Esaase South
EV	Eastern Vein
EXP	Exploration

Abbreviation/Unit of Measurement	Description
FEL	Front End Loader
FS	Feasibility Study
g	Gram(s)
gm.m	Gold Gram Meters
G&A	General and Administration
g/cm^3	Grams Per Cubic Centimetre
g/t	Grams Per Tonne
Ga	Giga-Annum
GC	Grade Control
GDP	Gross Domestic Product
GFI	Gold Fields Limited
GIS	Geographic Information System
GIT	Goods In Transit
GPS	Global Positioning System
GTG	Gold Technology Group (At Curtain University)
GV	Galamsey Vein
h	Hour(s)
ha	Hectare(s)
HDPE	High Density Polyethylene
HOD	Head of Department
HSE	Health, Safety, and Environment
ICMC	International Cyanide Management Code
IEC	International Electrotechnical Commission
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
IK	Indicator Kriging
ILR	Intensive Leach Reactor
IMOK	Indicator-Modified Ordinary Kriging
IP	Induced Potential
ISO	International Standards Organization
IT	Information Technology
ITRP	Independent Tailings Review Panel
JORC	Joint Ore Reserves Committee
JORC Code, 2012	Current Australasian Code for The Reporting of Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition)
JSE	Johannesburg Stock Exchange
JV	Joint Venture
Keegan	Keegan Resources Inc (name changed to Asanko Gold In February 2013)
kg	Kilogram
kg	Kilogram(s)
kg/hr	Kilograms Per Hour
KIR	Kiwi International Resources
kL	Kilolitre

Abbreviation/Unit of Measurement	Description
Km	Kilometre(s)
KNA	Kriging Neighbourhood Analysis
Knight Piésold	Knight Piésold (Pty) Limited
koz	Kilo Ounce/Thousand Ounce (Troy)
KRGL	Keegan Resources Ghana Limited
kt	Thousand Tonnes
kW	Kilowatt
L	Litre
LHS	Left Hand Side
LOM	Life of Mine
LUC	Localized Uniform Conditioning
m	Metre(s)
m^2	Square Metre(s)
m^3	Cubic Metre(s)
Ma	Million Years
MAMSL	Metres Above Mean Sea Level
masl	Metres Above Sea Level
MDS	Maxwell Datashed™
MIK	Multiple Indicator Kriging
mm	Millimetre(s)
MOP	Mine Operating Permit
MRE	Mineral Resource Estimate
MRev	Mineral Reserve Estimate
mRL	Reduced Level/Depth or Height of A Place (in m) Above a Reference Datum or Mean Sea Level
Mt	Million Tonnes
Mtpa	Million Tonnes Per Annum
NGL	Natural Ground Level
NI 43-101	Canadian Securities Administrators National Instrument 43-101 Standards of Disclosure for Mineral Projects
NPV	Net Present Value
NSR	Net Smelter Revenue
NYSE	New York Stock Exchange
OC	Organic Carbon
OK	Ordinary Kriging
OPEX	Operating Expenditure
oz	Ounce (Troy)
oz Au	Ounce of Gold
PAG	Potentially Acid Generating
Pb	Lead
PCD	Pollution Control Dam
PDC	Process Design Criteria
PFC	Power Correction Factor
PFS	Prefeasibility Study

Abbreviation/Unit of Measurement	Description
pH	Activity of Hydrogen Ions
PLS	Pregnant Leach Solution
PMI	PMI Gold Corporation
ppm	Parts Per Million
PRI	Preg-Robbing Index
Project	Mineral Resources, Exploration Activities, and the Existing Mine Facilities at the Asanko Gold Mine
PRV	Preg-Robbing Value
PSA	Pressure Swing Absorption
PVC	Polyvinyl Chloride
Q1, Q2, Q3, Q4	Quarter One, Quarter Two, Quarter Three, Quarter Four
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
QEMSCAN	Quantitative Evaluation of Materials by Scanning Electron Microscopy
QP(s)	Qualified Person(s)
QQ	Quantile-Quantile
QSP	Quartz Sericite Pyrite
Qtz	Quartz
QV	Quartz Veins
RAP	Resettlement Action Plan
RC	Reverse Circulation
RCD	Reverse Circulation with Diamond Tail
Resolute	Resolute Mining Limited
RF	Revenue Factor
RHS	Right Hand Side
RO	Reverse Osmosis
ROM	Run of Mine
RQD	Rock Quality Designations
RSA	Reclamation Security Agreement
SABC	Semi-Autogenous and Ball Milling Circuit
SAG	Semi-Autogenous Grinding
Sametro	Sametro Company Limited
Sb	Antimony
SBM	Sub-Celled Block Model
SD	Standard Deviation(s)
SE	South-East
SEC	U.S. Securities and Exchange Commission
SER	Slip Energy Recovery
SGS	SGS Laboratories
SIB	Stay-In-Business Capital
SiO_2	Silicon Dioxide (Silica)
SMBS	Sodium Meta-Bisulphite

Abbreviation/Unit of Measurement	Description
SMU	Selective Mining Unit
SOX	Strongly-Oxidized
SQL	Structured Query Language
SRF	Social Responsibility Forum
SRK	SRK (South Africa) (Pty) Ltd
SS	Stainless Steel
SSW	South-South-West
SW	South-West
t	Tonne(s)
t/m^3	Tonnes Per Cubic Metre
TOFR	Top of Fresh Rock
Tpa	Tonnes Per Annum
TSF	Tailings Storage Facility
TSX	Toronto Stock Exchange
TWL	Transworld Laboratories
u/f	Underflow
UCS	Unconfined Compressive Strength
US$	United States Dollars
VRA	Volta River Authority
VTEM	Versatile Time-Domain Electromagnetic Surveying
WBSZ	Western Bounding Shear Zone
WNW	West-North-West
WOX	Weakly-Oxidized
WRD	Waste Rock Dump
WRDF	Waste Rock Dump Facility
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence
Zn	Zinc

3 RELIANCE ON OTHER EXPERTS

For the purpose of this Report, the QPs have relied on other experts for information regarding mineral rights, surface rights, agreements, political, environmental, permits, and tax content as noted below.

3.1 Mineral Tenure, Surface Rights, Agreements, and Environmental Information

The QPs have not reviewed the mineral tenure, nor verified the legal status, ownership of the property or underlying property agreements, and environmental information, including permits. As such, the QPs have fully relied upon, and disclaim responsibility for information derived from Company experts through the following document:

- Galiano Gold Inc. March 10, 2022, Letter report from Todd Romaine, Executive Vice President of Sustainability with attachment of the content for inclusion as Sections 4 and 20 in the NI 43-101 Technical Report for the Asanko Gold Mine, Ghana with an effective date of February 28th, 2021.

This document includes information concerning property licenses and mineral tenure, legal status, permits, royalties, and environmental. This information is used in Sections 4 and 20 of the Report.

This information was prepared by the appropriate subject matter experts employed by Asanko Gold Ghana Limited under the supervision of the Frederick Attakumah, Executive Vice President and Managing Director of Asanko Gold Ghana Limited.

3.2 Political Information

The QPs have not reviewed the political matters relevant to the Technical Report. As such, the QPs have fully relied upon, and disclaim responsibility for information derived from the following document:

- Policy Perception Index from the 2020 Fraser Institute Annual Survey of Mining Companies report

This document is considered a credible source for international mining industry consensus on the overall political risk facing an exploration or mining project in Ghana. This information is used in Section 4.6 of the Report.

4 PROPERTY DESCRIPTION AND LOCATION

Ghana is located in West Africa, sharing boundaries with Togo to the east, Cote d'Ivoire to the west, Burkina Faso to the north and the Gulf of Guinea to the south.

The country is known to hold a significant portion of West Africa's gold deposits and has long attracted investors looking to trade and invest in its mineral riches. According to recent global statistics on gold production, Ghana is the world's eighth and Africa's largest gold producer. In addition to gold, the country has other mineral resources such as manganese, bauxite, and diamonds. At the moment, gold is Ghana's most important export commodity, followed by cocoa and timber products.

Ghana has an estimated population of 31.9 million (2021 estimate) and covers an area of approximately 238,530 km^2.

Ghana's population is ethnically diverse. The Akans are the largest, accounting for 44% of the population. Other significant ethnic groups include the Mole-Dagdani (16%), Ewe (13%), Ga-Adamgbe (18%), Gruma (4%), and Grussi (2%). The remainder is made up of a number of smaller ethnic groups. Despite the popularity of these languages, English, a legacy of British colonial rule, has become the official language.

In 1957 Ghana, (formerly known as the Gold Coast), became the first country in sub-Saharan Africa to gain independence. Ghana has been a stable democracy since 1992, which marked the drafting of a new constitution. Ghana is governed under a multi-party democratic system, with elected presidents allowed to hold power for a maximum of two terms of four years each.

Ghana predominantly has a tropical climate and consists mostly of low savannah regions with a central, hilled forest belt. Ghana's one dominant geographic feature is the Volta River, upon which the Akosombo Hydro-Electric Dam was built in 1964. The damming of the Volta created the enormous Lake Volta, which occupies a sizeable portion of Ghana's south-eastern territory.

Ghana has a market-based economy with relatively few policy barriers to trade and investment in comparison with other countries in the region. Ghana has substantial natural resources and a much higher per capita output than many other countries in West Africa.

Major international airlines fly into and from the international airport in Ghana's capital city, Accra.

4.1 Location and Area

The AGM tenements are in the Amansie West and South Districts, of the Ashanti Region of Ghana, approximately 250 km NW of the capital Accra and some 50 km to 80 km south west of the regional capital Kumasi (Figure 4-1 and Figure 4-2).

The AGM areas are accessed from the town of Obuasi, northward towards Kumasi on the Kumasi-Dunkwa highway to the Anwiankwanta junction.

The AGM is accessed by travelling 35 km south to Anwiankwanta Junction, and then west into the AGM property on surfaced and un-surfaced all weather roads.

The concessions cover an area of approximately 476 km^2 between latitudes 6º 19'40" N and 6º 28' 40" N; and longitudes 2º 00' 55" W and 1º 55' 00" W.

Figure 4-1 Location of the Asanko Gold Mine in the Ashanti Region of Ghana, West Africa

Source: CJM, 2014

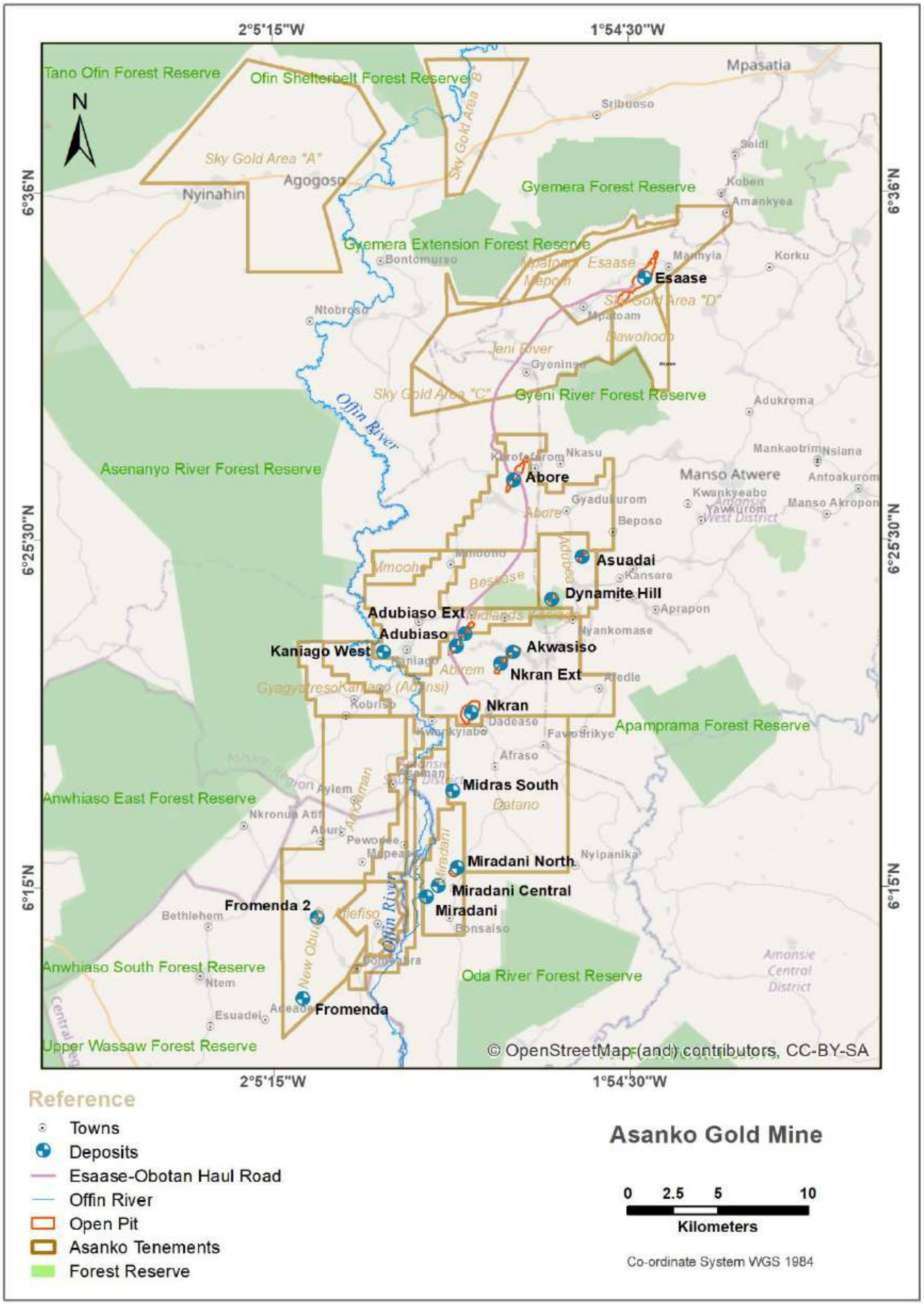


Figure 4-2 Location of the AGM Tenements

Source: Asanko Gold Mine, 2021

4.2 Licences and Mineral Tenure

The following legal information was prepared by subject matter experts within Asanko Gold Ghana Limited under the supervision of the Company (see Section 3.1).

4.2.1 Mining Legislation Overview

The Minerals and Mining Act, 2006 (Act 703) (as amended by the Minerals and Mining (Amendment) Act, 2015 (Act 900) and the Minerals Commission Act, 1993 (Act 450) are the principal enactments setting out the framework of Ghanaian mining law. These acts express the basic position that minerals in their natural state are owned by the state; they also outline the licensing scheme for mineral operations, the incidents of the various mineral rights and the powers of the principal regulatory institutions. The following pieces of subordinate legislation add detail in specific areas to the regime set out in the principal legislation:

a) Minerals and Mining (General) Regulations, 2012
b) Minerals and Mining (Support Services) Regulations, 2012
c) Minerals and Mining (Compensation and Settlement) Regulations, 2012
d) Minerals and Mining (Licensing) Regulations, 2012
e) Minerals and Mining (Explosives) Regulations, 2012
f) Minerals and Mining (Health, Safety and Technical) Regulations, 2012
g) Minerals and Mining (Local Content and Local Participation) Regulations 2020 (LI 2431)

The mining law divides the various licences that can be granted for a mineral right into three sequential categories, Reconnaissance Licence, Prospecting Licence and a Mining Lease, defined under the Minerals and Mining Act, 2006 (Act 703). These licences are discussed below.

4.2.1.1 Reconnaissance Licence (Sections 31-33)

A reconnaissance licence entitles the holder to search for specified minerals by geochemical, geophysical and geological means. It does not generally permit drilling, excavation, or other physical activities on the land, except where such activity is specifically permitted by the licence. It is normally granted for 12 months and may be renewed for a period not exceeding 12 months if it is in the public interest. The area extent is negotiable, related to the proposed reconnaissance program.

4.2.1.2 Prospecting Licence (Sections 34-38)

A prospecting licence entitles the holder to search for the stipulated minerals and to determine their extent and economic value. This licence is granted initially for a period of up to three years covering a maximum area of 150 km^2. This may be renewed for an additional period of two years, but with a 50% reduction in the size of the licence area if requested. A prospecting licence will only be granted if the applicant shows adequate financial resources, technical competence and experience and shows an adequate prospecting program. It enables the holder to carry out drilling, excavation and other physical activities on the ground.

4.2.1.3 Mining Lease (Sections 39-46)

When the holder of a prospecting licence establishes that the mineral to which the licence relates is present in commercial quantities, notice of this must be given to the Minister of Lands, Forestry and Mines and if the holder wishes to proceed towards mining, an application for a mining lease must be made to the Minister within three months of the date of the notice.

4.2.2 Issuer's Title to the AGM Concessions

The AGM concessions are owned 100% by Asanko Gold Ghana Limited. The legal status of the mineral properties in Ghana in which Asanko Gold has an interest have been verified by Asanko Gold and by an independent legal entity, Kimathi Partners Corporate Attorneys based in Accra. As at December 31, 2021, all mineral tenements were in good standing with the Government of Ghana. Furthermore, it has been confirmed that the properties are lawfully accessible for evaluation and also mineral production.

AGGL holds 7 mining leases, 9 prospecting licences and 1 reconnaissance licence which collectively make up the AGM property and span over 40 km length of the Asankrangwa Belt. The AGM is made up of a series of contiguous concessions in the Obotan and Esaase area (Figure 4-2). These concessions cover a total area of 476 km^2.

The areas of the respective mining leases and prospecting licences with respective company owners are tabulated in (Table 4-1).

Table 4-1 Asanko Gold Mine Mining Lease and Prospecting Concession Areas

Name	Mincom Ref#	Licence area (km^2)	Type	Status/ Expiry date	Ownership
Abore	PL 6/352	28.47	Mining Lease	Valid-ML 4/2030	Asanko – 100 %
Abirem	PL 6/303	47.13	Mining Lease	Valid-ML 3/2026	
Adubea	PL 6/310	13.38	Mining Lease	Valid-ML 4/2030	
Miradani	PL 6/122	14.98	Mining Lease	Valid-ML 5/2025	Asanko – 100 %
Esaase	PL 6/8 Vol 8	27.03	Mining Lease	Application, All relevant documents and payment made for renewal of ML. Awaiting Ministerial Approval.	
Jeni River	RL 6/21	27.37	Mining Lease	Application, All relevant documents and payment made for renewal of ML. Awaiting Ministerial Approval.	
Kaniago	PL 6/307	25.5	Prospecting	Application, All relevant documents and payment made for renewal of PL. Awaiting Ministerial Approval	Asanko – 100 %
New Obuase	PL 3/84	33.67	Prospecting	Application, All relevant documents and payment made for renewal of PL. Awaiting Ministerial Approval	
Datano	PL 6/32	53.78	Mining Lease	Valid-ML 5/2030	
Mepom	Pl 6/245	2.37	Prospecting	*Note 1*	Asanko – 100 %
Dawohodo	PL 6/43	10.00	Prospecting	Valid-PL 12/2023	
Sky Gold	RL 6/86	91.50	Reconnaissance	Application, All relevant documents and payment made for renewal of RL. Awaiting Ministerial Approval. *Note 2*	Asanko – 100 %
Kaniago	PL 6/289	25.27	Prospecting	Application, All relevant documents and payment made for renewal of PL. Awaiting Ministerial Approval	Asanko – 100 %
Besease	PL.6/120	15.55	Prospecting	Valid-PL 12/2023	
Mmooho	PL 6/352	5.70	Prospecting	Valid-PL 12/2023	
Gyagyatreso	PL6/32	10.83	Prospecting	Application, All relevant documents and payment made for renewal of PL. Awaiting Ministerial Approval	
Amoaman	PL6/380	43.47	Prospecting	Valid-PL 11/2022	

Note 1: Mepom License renewal pending since 2012. In process of being merged with Esaase ML
Note 2: License conversion from RL to PL pending since 2012.

In the case where an application is awaiting ministerial approval, the renewed application has been submitted and recognized by the Ghana Minerals Commission (Mincom) and is awaiting final Ministerial signature. Mining Leases are renewed for an extended period based on available reported resources whereas Prospecting Licenses are renewed for an additional three (3) years from date of Ministerial Grant. The final step which may reverse this accepted status is the lease ratification by Parliament thereby preventing the Ministerial approval. This is, however, typically a formality.

A prospecting renewal application (3 years) and a renewal for a Mining Lease is submitted to Mincom and is always accompanied by an updated technical report, relevant processing fees, consideration fees, annual mineral right fees and Stool Land fees. The renewal application is subsequently submitted by Mincom to the Ministry of Lands and Natural Resources for secondary approvals and is completed by Ministerial Approval thereafter.

The lease/concession boundaries have been surveyed by global positioning system (GPS) and are correlated with the latitude and longitude via degree co-ordinates as per the Ghanaian Mining Cadastre (July 2016).

AGGL is the merged entity of Keegan Resources Ghana Limited (KRGL) and Adansi Gold. When AGGL acquired the Esaase concessions, there was a mining lease in place from the historical alluvial mining operations. The Minister of Lands and Natural Resources granted the other Mining Leases for the Obotan Project to PMI Gold Inc (PMI) in November 2012, prior to the acquisition of PMI by AGGL in early 2014.

In November 2012, AGGL formally received mining leases on the Abore-Abirem and Adubea prospecting licences.

The formal grant of these three Mining Leases, renewable under the terms of the Minerals and Mining Act, 2006 (Act 703), followed the favourable recommendation by the Minerals Commission of Ghana in September 2012. The Mining Leases cover a total area of 167 km^2, encompassing the two main deposits, Nkran and Esaase and the smaller satellite deposits, Abore, Adubiaso, Dynamite Hill, Akwasiso, Asuadai, Adubiaso Extension and Nkran Extension.

In 2017, AGGL acquired the Miradani Mining Lease area situated in the southern camp adjacent to the Datano concession area.

4.3 Agreements, Royalties and Encumbrances

All concessions carry a 10% free carried interest in favour of the Ghanaian government and as a result, the Ghanaian government holds a 10% interest in Asanko Gold Ghana. The mining leases are also subject to a 5% Net Smelter Return royalty payable to the Government of Ghana. In addition, the Adubea mining concession is subject to an additional 0.5% NSR royalty to the original concession owner. The Esaase mining lease is also subject to an additional 0.5% NSR royalty to the Bonte Liquidation Committee. The Akwasiso pit on the Abirem mining lease is also subject to an additional 2% NSR royalty payable to the original concession owner.

4.4 Environmental Obligations

Environmental liabilities are discussed in Section 20.

4.5 Permits

Permits are discussed in Section 20.

4.6 Fraser Institute Survey

The QPs have used the Policy Perception Index from the 2020 Fraser Institute Annual Survey of Mining Companies report (the Fraser Institute Survey) as a credible source for the international mining industry consensus on the overall political risk facing an exploration or mining project in Ghana. The QP has relied on the Fraser Institute survey because it is globally regarded as an independent report-card style assessment to governments on how attractive their policies are from the point of view of an exploration manager of a mining company. The survey forms a proxy for the assessment by senior management in the mining industry of political risk in Ghana. Overall, Ghana ranked as Africa's fourth most attractive country to the mining industry in 2020 and was 46th globally (out of the 77 jurisdictions in the 2020 Policy Perception survey).

The AGM is a developed mine in an established mining camp with the Ghanaian government as a free carried joint venture partner. The QPs are not aware of any significant factors and risks that may affect access, title, or the right or ability to perform the work on the property, other than what is described in this Report.

5 ACCESIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Topography, Elevation and Vegetation

The AGM lies in the Amansie West District of the western region of Ghana. The AGM is located in hilly terrain dissected by broad, flat drainages that typically form swamps in the wet season between May and late October (Figure 5-1). Hill tops are generally at very similar elevations, reflecting the elevation of a previous erosional peneplane that is now extensively eroded. Maximum elevations are approximately 80 m above sea level (masl), but the areas impacted by the Project generally lie at less than 50 m elevation. Despite the subdued topography, hill slopes are typically steep. The concession areas are covered by a series of low, gently undulating hills, which rarely exceed 680 masl in elevation. Ecologically the AGM is situated in the wet evergreen forest zone.

In general, the concession areas have been largely transformed, having experienced extensive degradation in recent years. The main land uses include secondary forest, subsistence and cash crop farming, and artisanal gold mining.

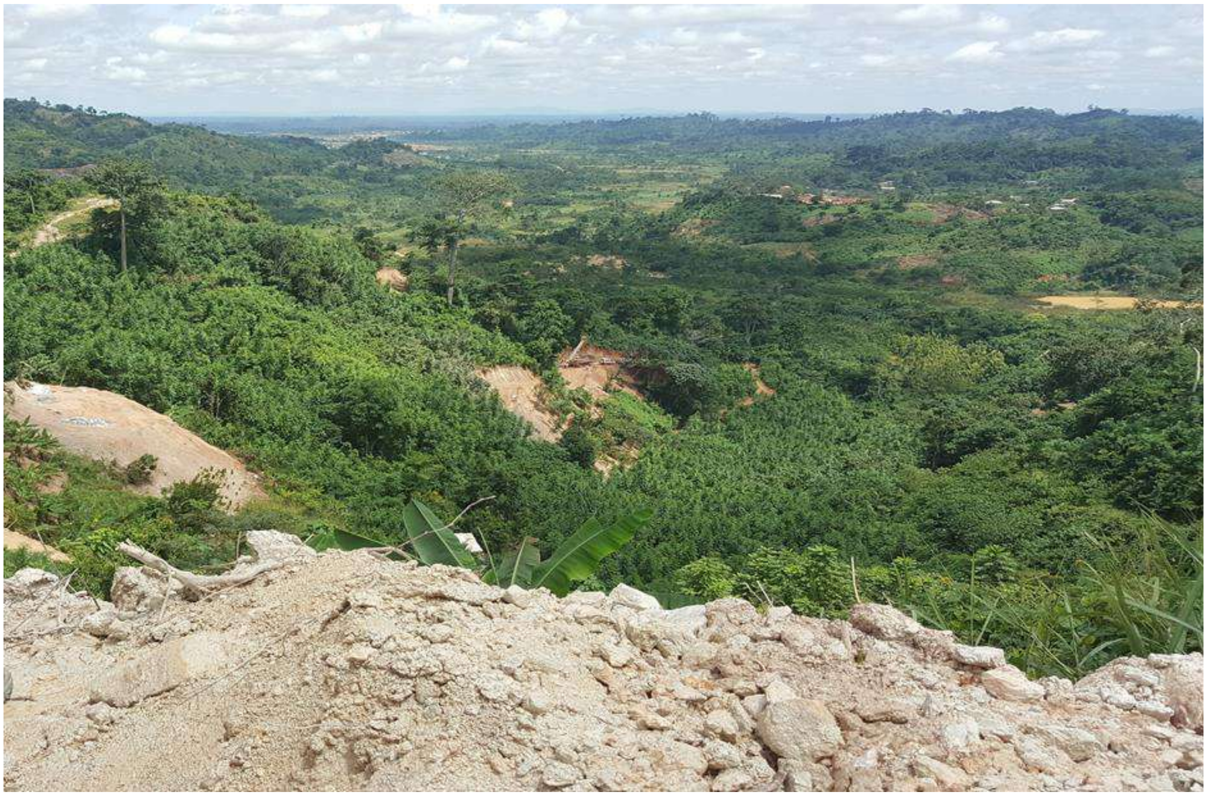


Figure 5-1 Example of Topography and Vegetation Around Esaase Pit Location

The soils of the area fall within the Bekwai and Nzema Oda classification. The soils of the Bekwai series are found on the summits and some upper slope sites of the hills of the area. They are generally deep to very deep (over 20 cm), humus, well drained, red in colour, loam to clay loam, gravelly and concretionary, with well-developed sub angular blocky structure and clay cutans within sub-soils. The soils are acidic throughout the profile.

The soils of the Nzema Oda series are heavy textured soils developed on alluvial deposits along streams of the area. The soils are poorly drained and are subjected to flooding during the wet seasons and are greyish in colour with prominent yellowish orange mottles. The soils are deep, acidic with clay loam to clay textures, but are structureless in the sub-soils.

5.2 Access

The Asanko Gold Mine is accessed by road from the city of Kumasi, south towards Obuasi on the Kumasi–Dunkwa highway to the Anwiankwanta junction then approximately 20 km west from this junction through Poano and Antoakurom on a tarred road onto a laterite road for approximately 30 km through Manso Akropon, Manso Atwere, Manso Nkwanta, Suntreso, Gyadukurom to Abore. At Abore, the road branches northwest to Akuntam, then northeast to Nkasu. At Gyadukurum, the road branches off south to Asuadai, Dynamite Hill, and Adubea. At Adubea, the road continues south to Kumpese and westward to Abirem, to Besease, then north to Mmooho. At Kumpese, the road branches south to Akwasiso, southwest to Koninase and to Nkran and Adubiaso. Areas of interest within the concession are reached via a combination of secondary roads, four-wheel drive tracks, logging roads, and farming/ hunting footpaths.

The Esaase property is accessed by road from the city of Kumasi by taking the tarred Sunyani–Kumasi road west for 10 km to the Bibiani Junction at Abuakwa and then southwest for 10 km along the tarred Bibiani–Kumasi highway to the village of Wiaso. A secondary tarred road is taken 8 km south from Wiaso to the village of Amankyea. Secondary gravel roads can be taken for a further 11 km via the villages of Ahewerwa and Tetrem.

The Esaase deposit itself is accessed by a 28 km haul road constructed by Asanko Gold.

5.3 Proximity to Population Centre and Transport

There are several local villages near the AGM site. The closest to the plant site is the Manso Nkran village, while the villages of Tetrem and Esaase are in close proximity to the Esaase deposit. Current site infrastructure and transport means are discussed in Section 5.5.

5.4 Climate and Length of Operating Season

The following is noted:

- Rainfall. The annual rainfall is in the range of 1,500 mm to 2,000 mm. The major rainy season takes place from April to July followed by a minor rainy season from September to October. The AGM has operated without cessation or delay throughout both rainy seasons
- Temperature. Maximum temperatures occur between January and April ranging between 26°C and 28°C and minimum temperatures between May and December when values range between 24°C to 25°C
- Wind speed and direction. The mean monthly wind speed is 0.59 knots with a mean monthly range from 0.4 to 1.3 knots. Mean monthly wind speeds rarely exceed 1.3 knots (0.67 m/s). August is generally the windiest month and wind direction is predominantly SE during the year.

5.5 Infrastructure

Current site infrastructure with respect to the Obotan concessions consists of an office complex, metallurgical facility, tailings storage facility, senior and junior accommodation and mess facilities, workshops, power distribution facility, a core storage facility, potable and operational water supplies, a waste rock dump facility, an upgraded dry weather air strip and a haul road from Esaase pit to Nkran pit. In addition, the following is noted for the Obotan concessions:

- Local facilities of importance to exploration and mining include towns, villages, roads, trails, power lines, rivers and rail roads
- The principal towns within the area are Abore and Adubea
- Akwasiso and Nkran are the principal towns within the mining area
- Surrounding villages are connected to the national electrical grid

- There is grid power to the Nkran area, the processing plant and town site
- Most areas are adequately serviced by several cellular telephone suppliers
- The principal towns have potable water and health posts which cover local needs
- Ghana has a good base of skilled mining and exploration personnel.

The following resources are available for the Esaase concession area:

- The Esaase camp and surrounding villages are connected to the national electrical grid
- Esaase is in an area well serviced by the Ghana national power grid with at least two alternate points of supply within a 50 km radius of the open pit mining site
- Mobile phone communication is accessible in most parts of the concession
- Hospitals and most government offices are available in Kumasi
- Food and general supplies are also purchased in Kumasi.

Ghana has a mature mining industry that has resulted in the local availability of both skilled and unskilled personnel.

5.6 Surface Rights

The laws regarding surface rights is captured in the Mineral and Mining Act 206, Act 703 sub-section 72. This section gives rights to the owners of the land (i.e. Chiefs, family, individuals, etc.) to be compensated by Mineral Rights holders (i.e. mining companies).

Sub-section: 72

(1) The holder of a mineral right shall exercise the rights under this Act subject to limitations that relate to surface rights that apply under an enactment and further limitations reasonably determined by the Minister.

(2) In the case of a dispute between a holder of a mining lease and the Minister concerning the limitations determined by the Minister under this subsection, the dispute shall be referred for resolution under section 27.

(3) The lawful occupier of land within an area subject to a mineral right shall retain the right to graze livestock upon or to cultivate the surface of the land if the grazing or cultivation does not interfere with the mineral operations in the area.

(4) In the case of a mining area, the owner or lawful occupier of the land within the mining area shall not erect a building or a structure without the consent of the holder of the mining lease, or if the consent is unreasonably withheld, without the consent of the Minister.

(5) The owner of a mining lease shall, in the presence of the owner or lawful occupier or accredited representative of the owner or lawful occupier of land, the subject of a mining lease and in the presence of an officer of the Government agency responsible for land valuation carry out a survey of the crops and produce a crop identification map for the compensation in the event that mining activities are extended to the areas.

(6) An owner or lawful occupier of land shall not upgrade to a higher value crop without the written consent of the holder of the mining lease, or if the consent is unreasonably withheld, without the consent of the Minister.

In the case of AGM, all concessions belong to the Ashanti Kingdom who has in turn given same right to the relevant Divisional Chiefs and in some cases specific individuals to exercise that right in terms of compensation. Compensation with regards to surface right comes in the form of:

- Crop compensation

- Deprivation for land use compensation
- Compensation of immovable properties (shrines, ponds, etc.)
- Royalty payment through the Stool lands.

There are sufficient surface rights available now, or that can be obtained, if necessary, for any future mining operations. There are adequate sources of power, water, mining personnel, tailings storage areas, waste rock disposal areas, and sites for processing facilities.

6 HISTORY

6.1 Prior Ownership and Ownership Changes

The deposits within the current AGM property have largely undergone a number of ownership changes since their discovery.

In 2007 Keegan Resources Inc acquired 100% of the Esaase Mining Lease from Sametro Company Limited, a private Ghana company. This lease includes the Esaase mineral deposit. In 2013 Keegan Resources Inc change the name of the company to Asanko Gold Inc. In 2014, Asanko Gold Inc acquired the Abirem, Adubea, and Abore Mining Leases from PMI Gold Inc. These leases include the Nkran, Akwasiso, Asuadai, Adubiaso, Abore and Dynamite Hill mineral deposits. In 2017 Asanko Gold Inc. acquired the Miradani Mining Lease which includes the Miradani mineral deposit. In 2020 Asanko Gold Inc changed the name of the company to Galiano Gold Inc. All these properties, collectively known as the Asanko Gold Mine, form the basis of a joint venture established between Galiano Gold and Gold Fields Limited in 2018. Galiano Gold Inc is the JV operator.

A summary of this is provided in Table 6-1.

Table 6-1 Summary History of Ownership

Year	Ownership
Nkran (Historically Nkran Hill, or Obotan Mine)	
Late 1980s	Obotan Minerals awarded prospecting concession over 106 km² (current Abirem Mining Lease, Adubea Mining Lease and Abore Mining Lease).
1990	Kiwi Resources Limited (KIR) took over Obotan Minerals interest. Concession explored by Australian juniors Associated Gold Fields NL (AGF) and KIR.
1996	Resolute Mining Limited (Resolute) bought combined interests of AGF and KIR (Nkran, Akwasiso, Asuadai, Adubiaso and Abore).
1999	Resolute changed name to Resolute Amansie Limited.
2001	Obotan Mine closed.
2006	Resolute relinquished ground to Government of Ghana who granted several small-scale mining leases on the deposits. PMI Gold Inc (PMI) acquired the Abirem, Abore and Adubea prospecting licenses.
2014	Asanko Gold acquired mining leases Abirem, Adubea and Abore from PMI through purchase agreement. Obotan Mine renamed to Nkran Mine.
Esaase	
1900-1939	Artisanal mining.
1990	Adjacent Jeni River mining lease granted to Jeni River Development Company Limited.
1990	Esaase (previously Bonte) mining lease granted to Akrokerri-Ashanti Gold Mines (AAGM) and later transferred to local subsidiary Bonte Gold Mines Limited (BGM).
2002	Ghanaian incorporated private company Dawohodo Manufacturing and Marketing Limited granted adjacent prospecting license to the south (Dawohodo-Esaase prospecting license).
2003	Jeni River Development Company Limited and BGM declared bankrupt. Esaase mining lease acquired from the Bonte Liquidation Committee by private Ghanaian company Sametro Company Limited (Sametro).
2006	Keegan Resources Inc (Keegan) entered into an option agreement with Sametro to earn 100% of the Esaase mining lease.
2007	Esaase mining lease transferred to Keegan.
2013	Keegan changed name to Asanko Gold.
Akwasiso *see Nkran – Abirem lease area*	
Abore	
Pre-1990	Small scale mining license held by Oda River Gold.
1990	Mutual Resources acquired Oda River Gold and formed JV with Leo Shield Exploration.
1990	Leo Shield Exploration (which became Shield Resources) bought out Mutual Resources.
2001	Agreement entered with Resolute; and Resolute took ownership of project.
2006	Resolute relinquished lease to Government of Ghana. PMI acquired Abore license.

Year	Ownership
2015	Asanko Gold acquired ground from PMI.
Asuadai – *Adubea lease area*	
1996	Resolute purchased combined interests of AGF and KIR. Released to six small scale operators at the time of mine closure.
2006	Resolute relinquished ground to Government of Ghana. Adubea license granted to Chief Joseph Biney family, and later acquired by PMI.
2015	Asanko Gold acquired ground from PMI.
Adubiaso *see Nkran – Abirem lease area*	
Miradani North – *Miradani lease area*	
1994	Miradani Mining Lease granted to Ashanti Goldfields, now Anglogold Ashanti (AGA)
2017	Asanko acquired the Miradani Lease from AGA
Dynamite Hill – *Adubea lease area*	
2013	Discovered by PMI beneath laterite cap
2017	Commencement of mining delayed until Q4 2017 due to regulatory approvals
2019	Production ceased in Q4 2019

In March 2020, Asanko Gold Inc. changed its name to Galiano Gold Inc.

6.2 Historical Exploration and Development

Gold rushes in the area occurred in 1898 to 1901 and again in the 1930s. Most of the Asanko Gold concessions, however, have no record of the work undertaken on the properties for this period. Interest in the area was renewed in the early 1990s mainly because of the successful exploration work carried out on the adjacent concession where the Nkran deposit is located.

Table 6-2 below summarizes the extent of the exploration activities and developments per area relevant to the current Mineral Resource.

Table 6-2 Summary of Historical Exploration and Development per Deposit

Period	Workings	Operator
Nkran		
Historical	Alluvial and eluvial gold artisanal gold mining which extend for ±610 m in a northeast-southwest direction. European settlers worked the deposits – adits and drives extend 80 m into the hill on site of old native workings.	
1980s	Limited exploration work undertaken with minor attention paid to the alluvial gold potential.	Previous Owner
1990-1995	Exploration focused on known prospects at Nkran deposit (formerly known as Jabokassie). Regional soil geochemical survey carried out that identified numerous anomalies around Nkran. Early reverse circulation drilling phase (details not available) yielded encouraging results over wide zone of bedrock mineralization, extending along strike for 600 m. The broad, low-lying Nkran had relief of only about 40 m with oxidation extending to depths of 40 m.	Previous Owner
1995	Additional DDH, RC, RC and RCD drilling was completed. Mineral Resources (Measured, Indicated and Inferred classes) were estimated and reported. A feasibility study was completed, and mining lease was granted.	Previous Owner
1996	Combined interests of KIR and AGF bought out by Resolute who immediately reviewed and expanded project scope. Further RC and DDH drilling conducted to increase Mineral Resources to a depth of 150 m at Nkran and to further assess the known mineralization at nearby Adubiaso.	Previous Owner
July 1996	Revised mine development plan completed with decision to proceed into production at a rate of 1.4 Mtpa.	Previous Owner
Early 1997	Initial mining commenced, and further exploration drilling continued.	Previous Owner

Period	Workings	Operator
May 1997	First gold poured.	Previous Owner
1998-2000	Additional DDH, RC, RCD holes drilled.	Previous Owner
2001	Nkran Mine closed due to low gold price having produced 590,743 oz Au at an average grade of 2.35 g/t Au.	Previous Owner
2002	Intensive exploration undertaken.	Previous Owner
2011	PMI carried out a 5 km^2 Induced Potential (IP) ground geophysical survey. PMI also completed a VTEM electromagnetic (EM) and magnetic survey centred over the Nkran pit.	Previous Owner
2015-2016	Nkran Mine dewatered and re-opened by Asanko Gold as a deeper opencast operation.	Galiano
2016-2020	Open pit production. Plant refurbishment and expansion to circa 5 Mtpa	Galiano
2020	Additional drilling (DDH, RC and RCD) completed to infill and expand on resource at depth. Refer to Table 10-1 for total quantities.	Galiano
Esaase		
Historical	Artisanal mining in Bonte Area associated with the Ashanti Kingdom.	
1900-1939	Workings by European settlers evidenced by old adits - no documented records remain.	Previous Owner
1966-1967	Drilling conducted on the Bonte River valley alluvial sediments to determine alluvial gold potential – no information available.	Previous Owner
1990	Bonte mining lease granted to Akrokerri-Ashanti Gold Mines (AAGM) and later transferred to BGM.	Previous Owner
1990-2002	Recovered approximately 200,000 oz of alluvial gold on Esaase concession +300,000 oz downstream on Jeni River concession.	Previous Owner
2006-2013	Keegan consolidates further concessions. Intensive exploration – geophysics (airborne VTEM - 2,266 line-km), soil geochemistry (>4,000 samples) and exploration drilling. Drilling included DDH, DTH, RC, and RCD. Refer to Table 10-1 for total quantities.	Galiano
2013-2018	Asanko Gold continued extensive exploration drilling in order to update the Mineral Resources. Refer to Table 10-1 for total quantities.	Galiano
Dec 2018-current	Open pit production.	Galiano
2020-2021	Infill drilling conducted. Refer to Table 10-1 for total quantities.	Galiano
Nkran Extension Project Area		
Historical	No known historical exploration or mining activity.	
1997-current	Exploration on north-eastern extension of Nkran structure delineated a number of mineralized zones - Akwasiso and Nkran Extension that have all been drilled (2016) to Indicated Mineral Resource classification.	Previous Owner/Galiano
Akwasiso		
1996-2000	Exploration programs including RC and DDH holes. Refer to Table 10-1 for total quantities.	Previous Owner
2001	Artisanal miners mined oxides. DDH holes drilled. Refer to Table 10-1 for total quantities.	Previous Owner
2014-2018	Exploration continues with purpose of refining the Mineral Resource. Drilling undertaken including RC, DDH, and RCD holes. Refer to Table 10-1 for total quantities.	Galiano
2017	Open pit operations commence.	Galiano
Dec 2018	Open pit operations suspended in Q1 2019.	Galiano
2019	Exploration drilling including RC, DD and RCD holes. Refer to Table 10-1 for total quantities.	Galiano
Jan 2020	Mining resumed	Galiano
Abore		
Historical	Alluvial and eluvial artisanal gold mining.	
1990-1998	Mutual Resources and Leo Shield Exploration initiated regional exploration program (73 km^2) including soil geochemistry and trenching. Soil geochemistry revealed a strong north-north-east trending gold anomaly over the area of artisanal mining	Previous Owner

Period	Workings	Operator
	(bedrock areas); the anomaly is several hundred metres wide and traceable along strike for about 3 km, well beyond the area of old workings. Extensive trenching confirmed continuous bedrock mineralization over 1,000 m with widths in the range 50 m to 100 m. The mineralization consists of a broad quartz stock work system hosted mainly by a north-north-east trending intermediate granitoid intrusion. Early artisanal pitting was focused mainly on narrow quartz veins associated with the stock work system Extensive drilling in the area (mainly RC, some DDH) outlined sizeable resources (now known as the Abore, Adubiaso, Asuadai and Akwasiso prospects). Full details of this work are not available. Prospecting in area north of Abore revealed artisanal mining in alluvial areas, as well as many old pits in the saprolite along a low hill immediately adjacent to the alluvial workings.	
2007-2012	Exploration programs which included RC and DDH drilling completed. Resulted in a Mineral resource estimate. Open pit mining, and an agreement was reached whereby ore was trucked from Abore north to Nkran plant for treatment. Refer to Table 10-1 for total drilling quantities.	Previous Owner
2012-current	No further exploration undertaken. Mineral Resource estimate restated.	Galiano
2019 - 2021	RC and RCD drilling, to extend the known resource at depth and along strike to the north. Refer to Table 10-1 for total quantities.	Galiano
Asuadai		
Historical	No known formal historical mining or exploration on this area. Minor pitting in the region by artisanal miners down to 5 m to 10 m through the oxide material to expose stock work vein sets.	
1996	Mining undertaken by artisanal workers (to present day).	Previous Owner
2000-2012	Exploration programs which included RC and DDH drilling completed. Refer to Table 10-1 for total quantities.	Previous Owner
2014 - current	No further exploration undertaken. Mineral Resource estimate restated.	Galiano
Adubiaso		
Historical	No known formal historical mining or exploration on this area.	
1996-2000	DD, RCD, and RC drilling completed. Refer to Table 10-1 for total quantities.	Previous Owner
1999-2000	Open pit mining. Oxide ore processed at Nkran plant.	Previous Owner
2007-2013	Exploration programs including RC and DDH drilling completed. Refer to Table 10-1 for total quantities.	Previous Owner
2016	Exploration continues with RC drilling to refine ore body definition. Refer to Table 10-1 for total quantities.	Galiano
2017 - current	No further exploration undertaken. Mineral Resource estimate restated.	Galiano
2020	RC and RCD drilling complete. Refer to Table 10-1 for total quantities.	Galiano
Miradani North		
1900-1914	Ashanti Rivers and Concession Ltd conducted 'extensive exploration' including adits	Previous Owner
1995	Miradani Mining License acquired by Ashanti Goldfields, now Anglogold Ashanti (AGA)	Previous Owner
1995-1996	Airborne geophysics, soil sampling and trenching completed by AGA	Previous Owner
2017	License acquired from AGA	Galiano
2017 - 2021	RC, DD, and RCD drilling complete. Refer to Table 10-1 for total quantities.	Galiano
Dynamite Hill		
2013	Discovered through trenching and drilling in 2013	Galiano
2013-2016	DD, RC, and RCD drilling complete. Refer to Table 10-1 for total quantities.	Galiano
2021	Additional drilling to extend resource at depth, including RC and RCD drilling. Refer to Table 10-1 for total quantities.	Galiano

6.3 Previous Mineral Resource Estimates

A number of Mineral Resource and Mineral Reserve estimations and declarations have been conducted over the various project areas that are the subject of this Report since 1995. The current Mineral Resources are not based on the previous estimates and have been re-estimated from first principles.

6.4 Historical Production

Artisanal mining has occurred at a number of the Asanko Gold target areas, focusing mainly on placer gold production. Prior to the Asanko Gold consolidation of the Keegan and PMI mineral assets in 2014, a number of satellite pit mining and evaluation projects were in operation.

The main producing mine in the area was the Obotan Mine (now Nkran Mine). Open pit mining commenced in February 1997. A total of 16.11 Mm^3 of material was excavated from the open pit at a production rate of 1.4 Mtpa. Following several re-designs, the pit was mined in two stages. A total of 7.82 Mt of material was milled at an average recovery of 89% at a reported reserve grade of 2.35 g/t (Brinkley 2001). The mine was closed in July 2001 after having produced 590,743 oz Au. Operations ceased due to a low gold price environment coupled with the requirement to push back the Nkran pit to access deeper reserves. Asanko Gold dewatered the Nkran pit and re-commenced mining operations in February 2015, with the first gold produced in February 2016. Production was reported at Nkran through to Q2 2020, producing a total of 797,949 oz of gold.

At Esaase, under the Bonte mining lease BGM recovered approximately 200,000 oz of alluvial gold during the period 1990-2002. No mining or production details are available. Asanko Gold commenced operations at Esaase in 2018 extracting from non-alluvial sources. Production to date totals 452,477 oz of gold.

At Abore, Resolute Mining Limited (Resolute) conducted mining in the late 1990s to early 2000s. Mining targeted mainly oxides and transition material by open cast blast, load and haul to be processed at the old Nkran plant. Production details are unknown.

At Adubiaso, Resolute mined mostly oxides and transition material from the deposit by open cast free dig, load and haul to the Nkran plant. Mining was from October 1999 to December 2000. As reported by Brinkley (2001), a total of 3.79 Mm^3 of material was excavated from Adubiaso open pit. A total of 0.70 Mt at 2.43 g/t Au was delivered to the ROM pad, containing a total of 54,654 oz of gold. Total production of 52,677 oz (recovered) was achieved with a pre-production cost of US$90/oz (February 1999 to October 1999); and an operating cost of US$262/oz (October 1999 to December 2000).

The Asuadai deposit has seen no legal mining conducted since the mineralization was identified. Artisanal miners had and still are undertaking pitting within the mineralized zones of the prospect.

The Dynamite Hill deposit was discovered in 2013 and put into production in Q4 2017. Production ceased in late 2019 having yielded 91,149 oz of gold.

No large-scale mining was conducted at Akwasiso prior to Asanko Gold. Akwasiso has been in operation since 2018. Production to date totals 152,328 oz of gold.

At Miradani North, some open pit mining was conducted to a vertical depth of 30-40m by GPS Ghana Ltd. The current pit is approximately 120 m long and 75 m. Production details from this operation are unknown at this time.

There is no record of formal commercial historical mining activity for the other target areas.

7 GEOLOGICAL SETTING AND MINERALIZATION

Unless specified otherwise, all diagrams in this section are sourced from Asanko Gold Mine, 2019.

7.1 Regional Geology

The geology of Ghana is largely underlain by the West African craton. The craton consists of the Man-Leo (or Kénéma-Man) shield in the south (extending from Ghana to Senegal) and the Archaean Reguibat Shield in Mauritania to the north. They are separated by overlying younger sedimentary rocks of the Taoudeni Basin (see Figure 7-1).

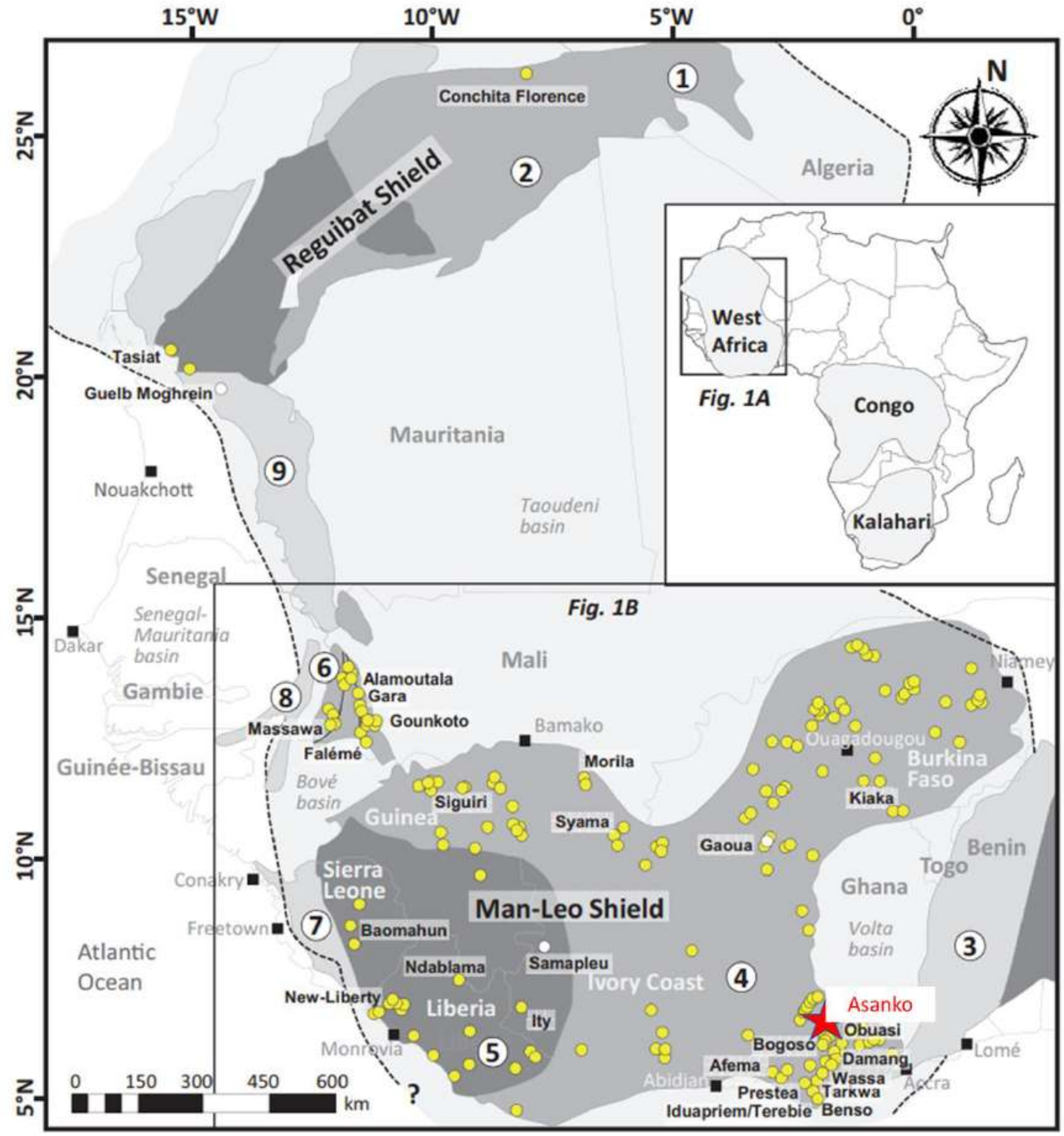


Figure 7-1 Simplified Map of the West African Craton, with Associated Gold Deposits (Modified from Goldfarb et al, 2017)

Note: Numbers 1 to 9 outline the different Archean, Proterozoic, and Hercynian domains: 1 = Eglab, 2 = Yetti, 3 = Daomeyan, 4 = Baoulé-Mossi, 5 = Kenema-Man, 6 = Kédougou-Kénébia Inlier, 7 =Rokelides, 8 = Bassarides, 9 = Mauritanides

The Man-Leo Shield covers the southernmost third of the craton. It is divided into two portions, with the Archaean age Kenema-Man Domain in the west and a Paleoproterozoic dominated Birimian aged terrain in the east, sometimes referred to as the Baoulé-Mossi domain. The Birimian rocks consist of five evenly spaced commonly NNE-trending, narrow, linear greenstone belts composed of calc-alkaline or tholeiitic volcanic rocks (Figure 7-2 and Figure 7-3). These belts are separated by wide intervening basins (such as the Kumasi Basin) filled with thick turbiditic sequences of argillites, phyllites, graywackes, and chemical sediments. The Birimian rocks are believed to have formed during two major orogenic phases, namely the Eoeburnian (ca. 2.25 to 2.15 Ga) and the Eburnian (ca. 2.12 to 2.06 Ga).

Birimian sedimentation was followed by deposition of clastic sediments of the Tarkwa Group from ca. 2135 to 2120 Ma, in places interbedded with the Birimian units and containing clasts derived from the Birimian rocks. Generally, though, the contact is considered unconformable. Tarkwaian conglomerates, sandstones, and phyllites appear to have accumulated in restricted basins within the volcanic belts of the Birimian towards the end of the volcanic cycle.

Three magmatic episodes intrude the Birimian rocks, divided based on petrography, geochemistry, and isotopic ages (Baratoux et al., 2011), as well as magnetic and radiometric signatures (Metelka et al., 2011).

- The oldest magmatic episode was characterized by emplacement of calc-alkaline biotite- and amphibole-bearing Tonalite-Trondhjemite-Granodiorite (TTG) suites dated from ca. 2.17 to 2.12 Ga (Yao et al., 2001). These equate to the often-used ‘Cape Coast’ or ‘Basin-type granitoids’ due to their spatial association with the sedimentary basins;
- The second episode is represented by calc-alkaline K-feldspar- and biotite-bearing granodiorite and granite intrusions dated between ca. 2.12 and 2.09 Ga. These are often referred to as ‘Belt-type’ or ‘Dixcove’ granitoids, due to their spatial association with the volcanic belts;
- The third episode, exemplified by the Bongo, Tongo, and Banso potassic granitoids granites emplaced during late orogenic stages between ca. 2.11 and 2.07 Ga. (post-Tarkwaian).

Later deformation resulted in widespread lower to upper greenschist facies metamorphism of most of the volcanic and sedimentary rocks in the greenstone belts (Feybesse et al., 2006), although amphibolite facies peak conditions were locally reached during regional metamorphism.

Clastic shallow water sediments of the Neoproterozoic Volta Basin cover the northeast of the country. Minor Paleozoic and Cretaceous to Tertiary sediments occur along the coast and in the extreme southeast of the country.

Much of this deformation is what is termed the Eburnean orogeny, which Allibone et al. (2004) defined as represented by two major deformational cycles. Feybesse et al. (2006) synthesized these West African events as 2130 to 2105 Ma (D1) thrusting followed by 2095 to 1980 Ma (D2-D3) transcurrent tectonics.

The margins of the belts commonly exhibit faulting on local and regional scales. These structures are fundamentally important in the development of gold deposits for which the region is well known.

Multiple tectonic events have affected virtually all Birimian rocks with the most substantive being the Eburnean Orogeny fold-thrust compressional event, that affected both volcanic and sedimentary belts throughout the region and to a lesser extent, Tarkwaian rocks. For this reason, relative age relations suggest that the final deposition of Tarkwaian rocks took place as the underlying and adjacent volcanic and sedimentary rocks were undergoing the initial stages of compressional deformation.

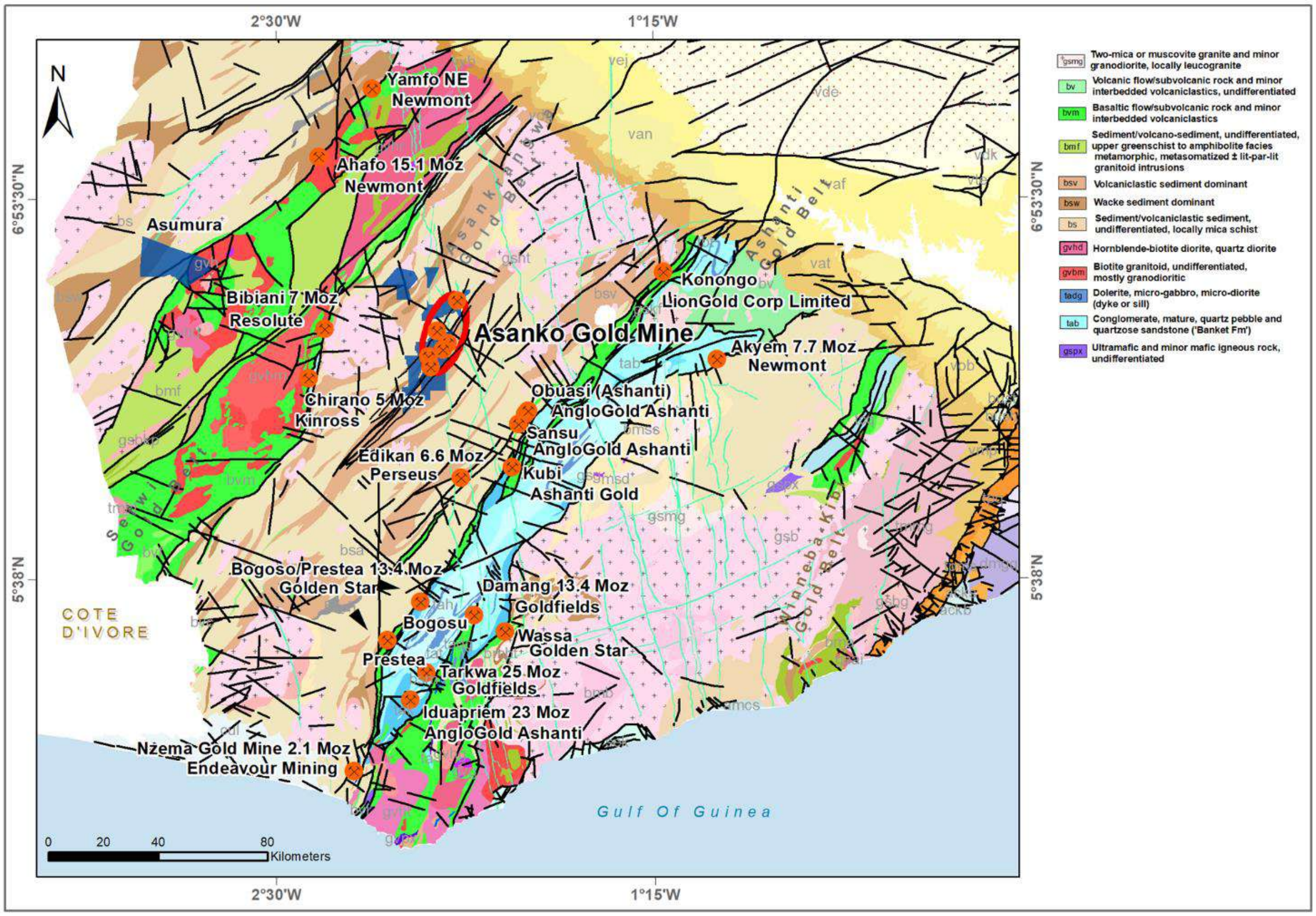


Figure 7-2 Regional Geology of Southwest Ghana Around AGM Concessions
Source: Ghana Geological Survey; CJM, 2014

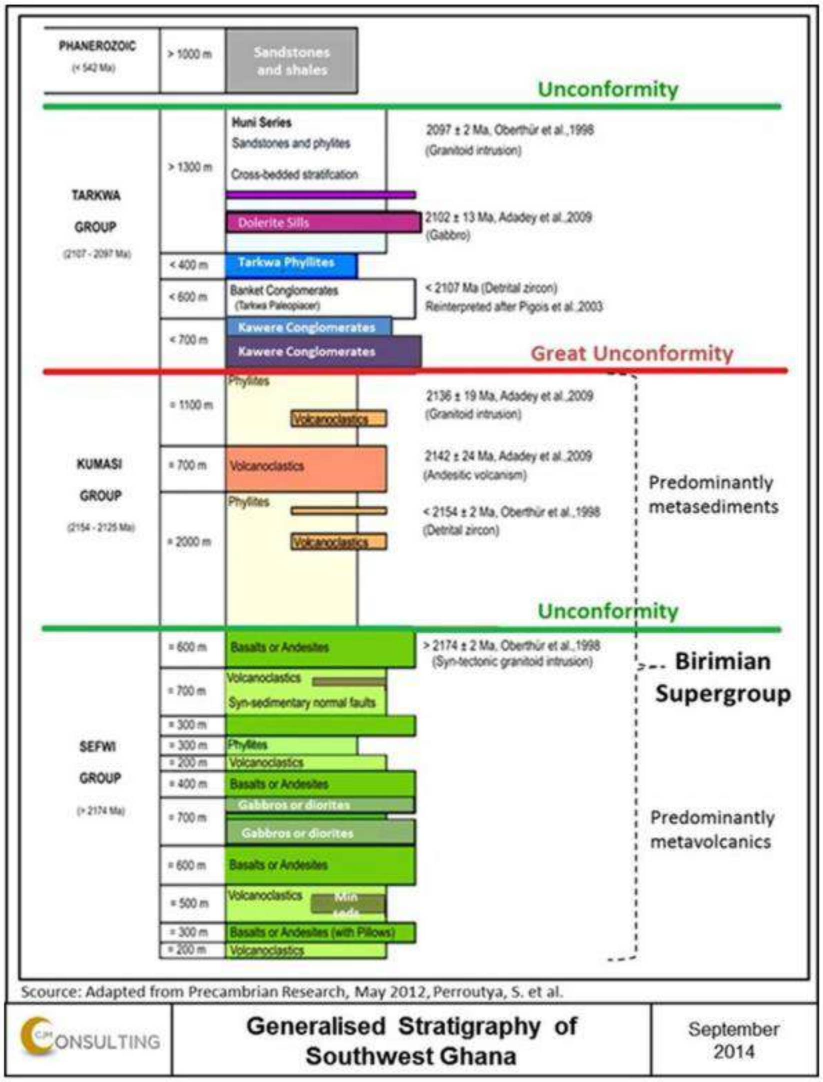


Figure 7-3 Generalized Stratigraphy of Southwest Ghana

Source: CJM, 2014

Mesothermal gold mineralization in the Birimian Supergroup occurs as two main types, namely quartz vein hosted and disseminated sulphide type (Leube et al., 1990; Béziat et al., 2008), and most developed between 2.2 and 1.8 Ga. Of these, orogenic gold deposits formed between 2.2 and 2.0 Ga, intrusion-related (and skarn) between 2.2 and 2.1 Ga, and paleoplacer types between 2.06 and 1.8 Ga.

There are also examples of atypical major supergene gold deposits such as Yatela, which has been correlated with the glacial formation on the West African craton during the Miocene–Eocene epochs (Matsheka and Hein., 2011). Furthermore, gold mineralization is also known from the Archean of Sierra Leone and Liberia dating to 2.9 Ga (Foster and Piper, 1993). The youngest in situ recognized gold phase occurs in the Pan-African Dahomeyan belt of Togo (Markwitz et al., 2015).

Orogenic gold in West Africa is hosted in a range of rock types including mafic-hosted (both intrusive and extrusive units), granitoid-hosted, sediment-hosted, carbonate-hosted, and Banded Iron Formation (BIF) hosted. Orogenic gold in shear zones, commonly in quartz veins, is the dominant style of mineralization in West Africa (Markwitz et al 2015).

Intrusion-related deposits and skarn deposits are rarer and, with some exceptions, are also controversial concerning an agreed genetic model. Generally, gold mineralization is associated with greenschist metamorphosed terrains, and less commonly in lower amphibolite facies rocks. Most deposits are found in the Baoulé Mossi domain and the Kédougou-Kéniéba Inlier and are spatial associated with shear zones. The shear zones commonly occur at the contact between Birimian metasedimentary and metavolcanic rocks (Kesse, 1985), with gold deposits expressing a significant degree of structural control (Béziat et al., 2008). Some gold mineralization is related to the pre-Eburnean metallogenesis (Tangaean event) at approximately 2.19–2.15 Ga (Allibone et al., 2002; Tshibubudze et al., 2009; Hein, 2010; de Kock et al., 2012) which is observed in Ghana (e.g.,Wassa), Burkina Faso (e.g., Kiaka, Essakane) and Mali (e.g., Morila).

In the West African Craton, the peak of mineralization was during the Eburnean Orogeny at approximately 2.15–2.10 Ga and produced very large (>10 Moz) gold deposits associated with regional northeast–southwest trending shear zones. Gold occurs as free grains associated with quartz and/or is hosted in sulphides (mainly pyrite and arsenopyrite) (Milési et al.,1989).

Extensive hydrothermal alteration is observed throughout gold-rich areas, with carbonate–pyrite–chlorite–sericite alteration in meta-sedimentary rocks, actinolite–chlorite–quartz ± chalcopyrite ± albite ± leucoxene in mafic volcanic rocks, and quartz–chlorite–sericite–epidote in felsic intrusive rocks (Markwitz et al., 2015).

7.2 Local Geology

The AGM deposits are located within the Kumasi Basin, one of the intervening basins between the greenstone belts. Within this basin lies the Asankrangwa Gold Belt which was recognized after decades of artisanal mining in gold-bearing, shear zone hosted quartz reefs. The basin is bound to the southeast by the Ashanti Fault/Shear and the Bibiani shear to the northwest. The Asankrangwa Belt expresses itself as a complex of northeast-trending shear zones situated along the central axis of the Kumasi Basin. Several major northeast-trending shears/structures bisect the Kumasi Basin/Asankrangwa Belt. The Nkran deposit is located on a jog along the regional 35-40° trending Nkran Shear, which is a zone of about 15 km in width and may be traced on a northeast to southwest trend for a distance of some 150 km. The Nkran Shear Corridor also hosts the Asuadai, Dynamite Hill, and Akwasiso deposits. The parallel Esaase Shear Corridor hosts the Esaase, Adubiaso, and Abore deposits. The Miradani Shear Corridor hosts the Tontokrom, Miradani, and Fromenda deposits.

The Kumasi Basin is heavily faulted and consists of an isoclinally folded sequence of metasediments, dominated by turbiditic sequences of greywackes and shales, intercalated with rare andesitic and volcaniclastic rocks, previously described as greywackes, phyllites, argillites, and shales.

The Asankrangwa Belt straddles two broad domains of distinct magnetic character. The western portion is characterized by the low magnetic relief that is typical of the Kumasi Basin as a whole. In the east, moderately magnetic mafic volcanic rocks result in a high magnetic zone corresponding to the Lower Birimian Supergroup, and the infolded, strongly magnetic rocks of the Ashanti Belt volcano-sedimentary and Tarkwaian sedimentary packages. This domain is in sharp contact with the weakly, to non-magnetic rocks of the upper Birimian metasediments, which dominate the Kumasi Basin in the west. This zone of contrast coincides with the prominent, shear zone which bounds the northwest margin of the Ashanti volcanic belt that plays host to most of the large gold deposits in the area.

A sharp NE trending break separates these two distinct magnetic domains and also truncates the dominant ENE to WSW trends typical of the eastern domain. Evident, dramatic changes in the structural grain in the area indicate the presence of a major shear zone separating the two domains. This interpretation results in the Upper Birimian metasediments of the western domain occurring in the hanging wall of the shear zone, and above Lower Birimian metavolcanics of the eastern domain which occur in the shear zone footwall. This arrangement of ‘younger-over-older’ supports a long and intense thrusting history on the shear zone.

One of the structural setting interpretations of the Asankrangwa Belt that explains these relationships is an inverted half-graben, in which growth faulting-controlled accumulation of the upper Birimian metasediments, above the Lower Birimian metavolcanics in the footwall.

7.3 Regolith and Weathering Profile

The regolith system of the Asankrangwa belt is a typical tropical weathering environment. The topography comprises rolling hills and valleys with a dendritic drainage pattern that features a network of rivers and streams that generally drain southwards.

In this vast area, different regolith regimes are observed namely relic, erosional and depositional. The relict regime contains mainly lateritic residuum, the erosional regime comprises ferruginous saprolite, saprolite, lag, and soil on saprolite bedrock saprolite and soils on bedrock saprolite. The depositional regimes are mainly colluvium, alluvium, paleochannel, and lacustrine sediments, and ferricrete.

On hilltops, ridges, and elevated topographies and slopes, there is vegetation cover sitting on topsoil rich in organic matter which is between 0-30 cm thick. Underneath this is the lateritic residuum comprising lateritic gravel and duricrust beneath which is the mottled zone followed by plasmic zones. Beneath the plasmic zone lies the saprolite and the sap rock sitting on the bedrock.

In valleys and plains, the vegetation cover is underlain by mud, thick sandy soils, and pebbly gravels, 0.5 to 5 m thick, which overlie the saprolite, and the caprock. Both are underlain by bedrock.

Generally, the base of oxidation is about 50 m but varies between 20 to 80 m deep depending on local conditions such as rock type, topography degree of silicification, and other factors. The transition from completely weathered to fresh rock is 3 to 10 m thick but more gradual in the metasedimentary rocks compared to the intrusive rocks.

Figure 7-4 is a photo showing a typical regolith profile exposed in a road cut. Figure 7-5 shows the Asankrangwa belt regional geology.

Figure 7-4 Road-cut Exposure Showing Regolith Typical Regolith on a Hill on the Asankrangwa Belt

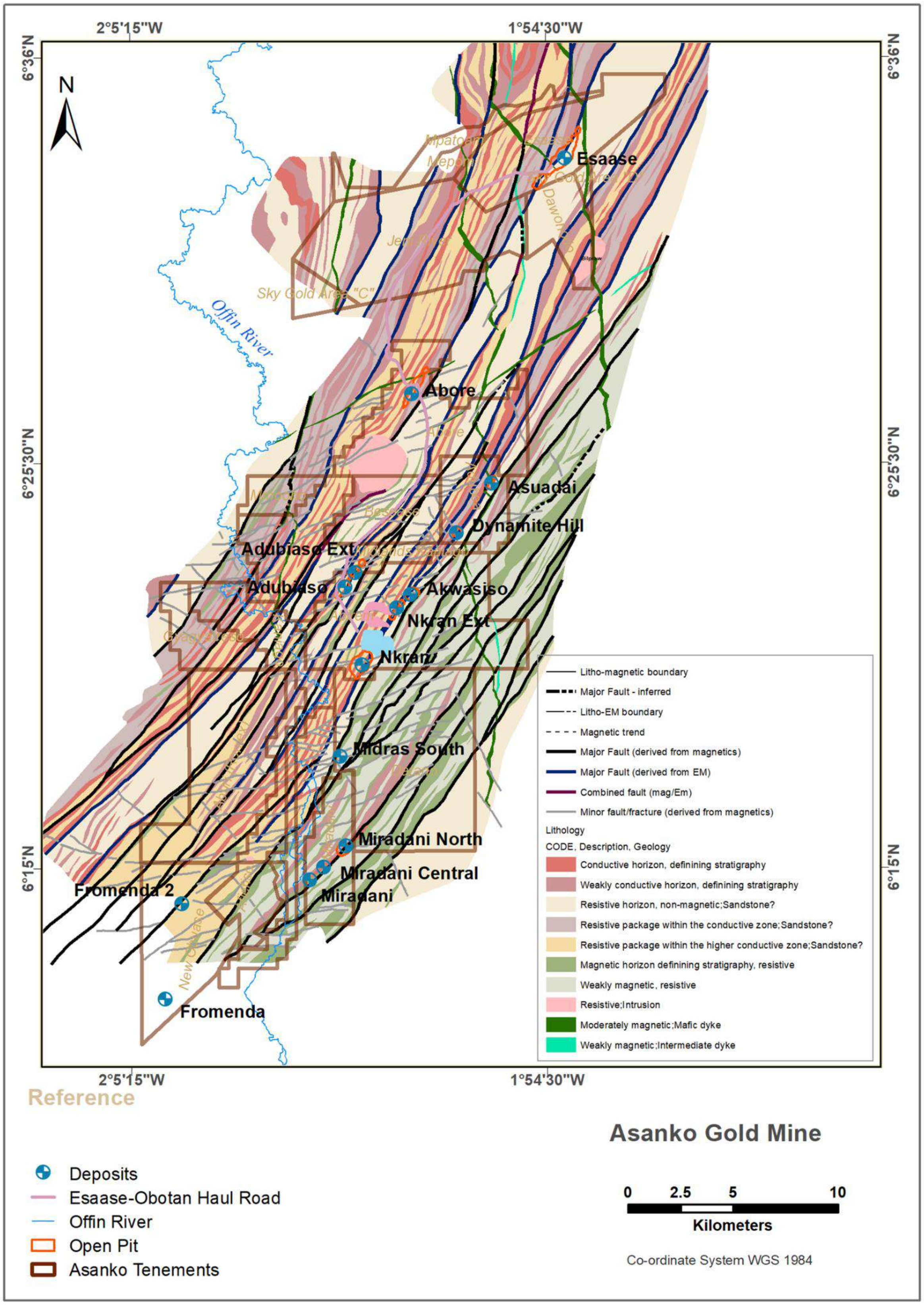


Figure 7-5 Location of AGM Deposits Along the Asankrangwa Gold Belt

Source: Asanko Gold Mine, 2021

7.4 Property Geology and Mineralization

The AGM deposits are hosted along the NE-SW Asankrangwa structural shear corridor, which is defined by NE-SW trending lineaments and magnetic lows and is about 7 km wide and over 50 km long. A summary of the structural controls on mineralization and dominant host rocks at each deposit is presented in Table 7-1.

Table 7-1 Summary of Structural Controls on Mineralization per Deposit

Deposit	Mineralization Control	Main Host Rock
Nkran	D2 shear + granitoid + linking QVs	Quartz (Qtz) sandstone + granitoid + quartz veins (QVs)
Nkran Extension	D2 shear + Late conjugate QVs	Qtz sandstone
Esaase	D2 shear + tensional QVs	Highly deformed sandstone-siltstone-shale + QVs
Akwasiso	D2 shear + granite + Late conjugate QVs	Qtz sandstone + granite + QVs
Abore	D2 shear + granite dyke + Late conjugate QVs	Granite + QVs
Asuadai	D2 + Granite + late conjugate QVs	Granite + QVs
Adubiaso	D2 shear + granite dyke + Late conjugate QVs	Qtz sandstone + granite
Adubiaso Ext	D2 shear + late conjugate QVs	Qtz sandstone
Miradani North	D2 shear + sub-horizontal linking QVs	Qtz sandstone + tonalite + QVs

7.4.1 Nkran

Nkran occurs on a 20° trending jog on the Nkran Shear Corridor. The Nkran Shear is characterized by sheared siltstones (phyllites) dominant on the western side of the shear and sandstone dominant on the east. The central part of the Nkran deposit consists of a series of wacke and sandstone-dominated stratigraphy that has been intruded by several felsic porphyry intrusions (see Davis, 2016). Consistent mappable lithologies are the western sandstone, the central sandstone, the eastern sandstone, the felsic granitic porphyry intrusive unit, and the skinny breccia unit which is located within the eastern sandstones and runs along the strike of the deposit.

In plan, the Nkran pit extends for approximately 850 m in a NE-SW direction along the strike length of the ore body, and at its widest point measures 450 m across strike. The main rock types at Nkran pit consist of thinly bedded greywacke and thickly bedded to massive sandstone, phyllite, and carbonaceous shale. The metasediments have been isoclinally folded and sheared, and generally dip steeply to the north-west at between 70º to 80º, with a steep 70º north-easterly plunge.

Intruding the metasediments are two lensoid tonalitic intrusions. The intrusion is largely restricted to the NE portion of the pit, with isolated pods of granitoid in the southern portion. Granitoid (as tonalite; Nude, 2011) is present at depth in the south end of the pit. The re-opening of the Nkran deposit has provided extensive in-pit exposure. The granitoids intrude structures marked by a stratigraphic discordance and are variably sericite altered. Of note is that the granitoids post-date the D1-D2 deformational events and host a brittle vein style of gold mineralization.

The regional stratigraphy trends in a NE direction, while in the middle of the Nkran pit the stratigraphy trends north. The stratigraphic discordance in the centre of the pit correlates with both the southern extent of the granite intrusion (GR01) at upper levels and the presence of sandstone-dominant stratigraphy. Phyllites locally are observed to splay and merge along strike, and mark zones of higher strain (shear zones) within a more competent sandstone dominant package and tonalite. Duplex structures present through the centre of the pit, cut the GR01 granite, and repeat the sandstone-dominant stratigraphy along sheared phyllites and tonalite contacts.

Three predominant deformation/geotectonic phases are identified at the Nkran area:

1. Closure of the Kumasi Basin through NW-SE compression

- D1 NW-SE shortening, creating NE-trending, steep NW-dipping isoclinal folded stratigraphic package of greywacke, phyllite, and carbonaceous shale
- D2 WNW-ESE shortening, dextral movement along the Nkran shear, duplication of stratigraphy along phyllite/shale rich horizons. Formation of four main controlling structures – Freelander, Defender, Discovery, and County. The early phase of Au-mineralization (Galamsey Vein [GV], Central Vein [CV], Eastern Vein [EV]) is associated with ductile fabric associated with D2 deformation.

2. Change/rotation in stress field resulting in SW-NE compression
   - D3 SW-NE shortening, resulting in crenulation cleavage.
3. Change/rotation in stress field resulting in NE-SW compression
   - D4a NE–SW shortening, resulting in shallow stacked veins that cross-cut D2 fabric. Vein arrays predominantly hosted within the thick sand (broad sandstone) package, the synformal keel of prior D1/D2 deformation, and several granitoid stocks. High-grade gold associated with these vein arrays
   - D4b NW-SE extension, resulting in steep, narrow extension veins striking NW. Often contain high-grade gold.
   - D5 NW-SE shortening, sinistral reactivation of major structures, resulting in barren quartz breccia and laminated veins, contain xenoliths of early D2 and D4 related mineralization.

Figure 7-6 shows a plan view of the geology at Nkran.

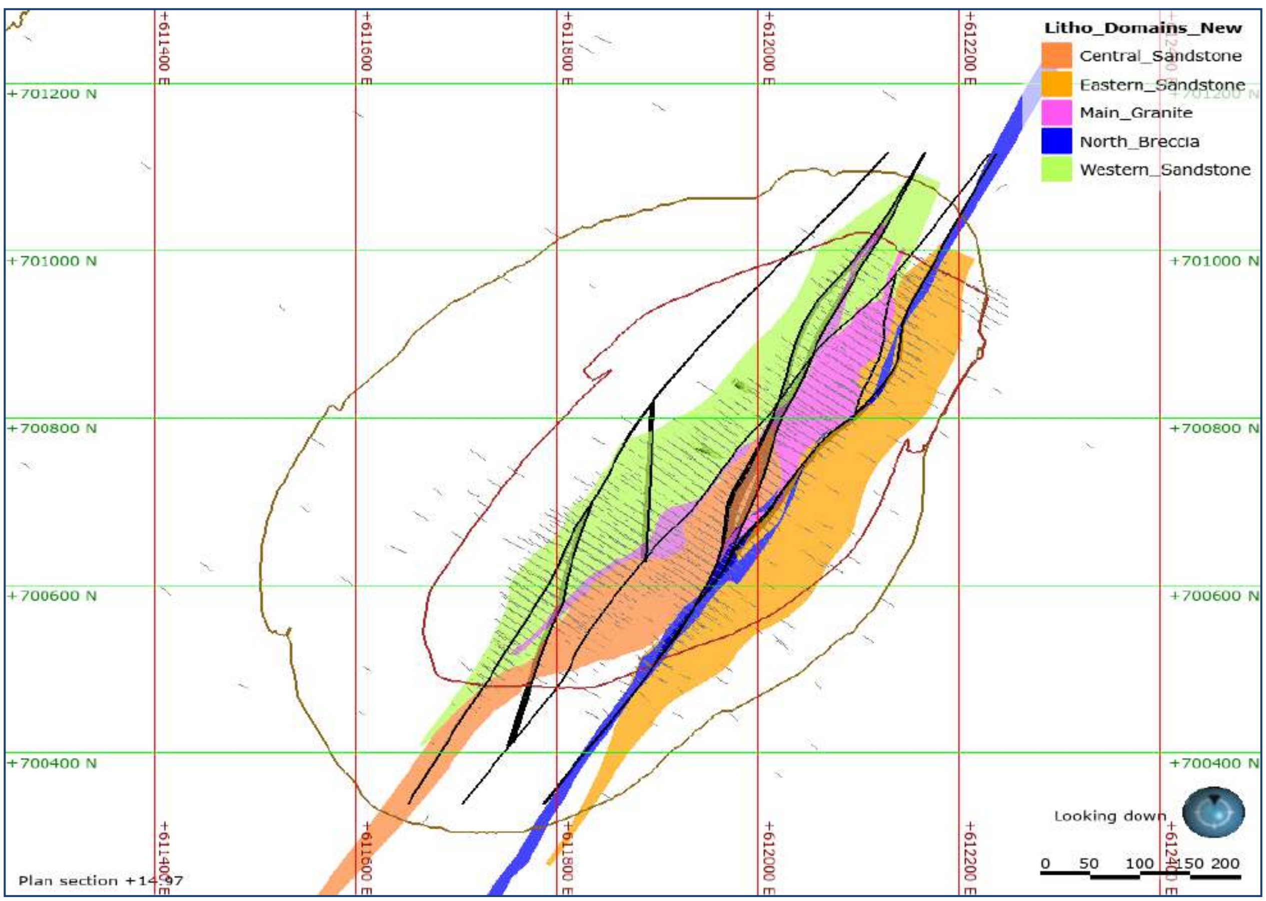


Figure 7-6 Nkran Plan View Pit Showing Geology
Source: Asanko Gold Mine, 2021

Mineralization at Nkran is controlled by an isoclinally sheared fold verging to the north. There is a very strong control on the gold mineralization distribution by structures associated with the Western Sandstone and the Eastern Breccia. The mineralization is concentrated around the limbs of this fold must have occurred in two major phases:

1. Ductile, shear-hosted mineralization, within the NNE-striking, steeply W-dipping GV, CV, and EV systems. These zones typically measure approximately 2 m in wide in the central area, with higher grades associated with the intersection of the lodes and the controlling structures (Freelander, Defender, etc.) resulting in high-grade steeply plunging shoots. These lodes are overprinted by a barren quartz event that significantly disrupts the continuous nature of the mineralization in the central zone of the pit.
2. Cross-cutting, NW to NNW-striking, shallow to moderately NE-dipping brittle quartz-carbonate vein hosted mineralization, and associated sericite-albite-arsenopyrite-magnetite alteration. Steep, narrow (2-5 cm thick) high-grade veins overprint the shallow dipping mineralization. The first set of shallow dipping veins (Figure 7-7) are linked to NE-SW shortening. The second phase of veins were linked to the NNE-SSW extension. This mineralization is predominantly hosted in the folded thickened broad sandstone and granitoid stocks.

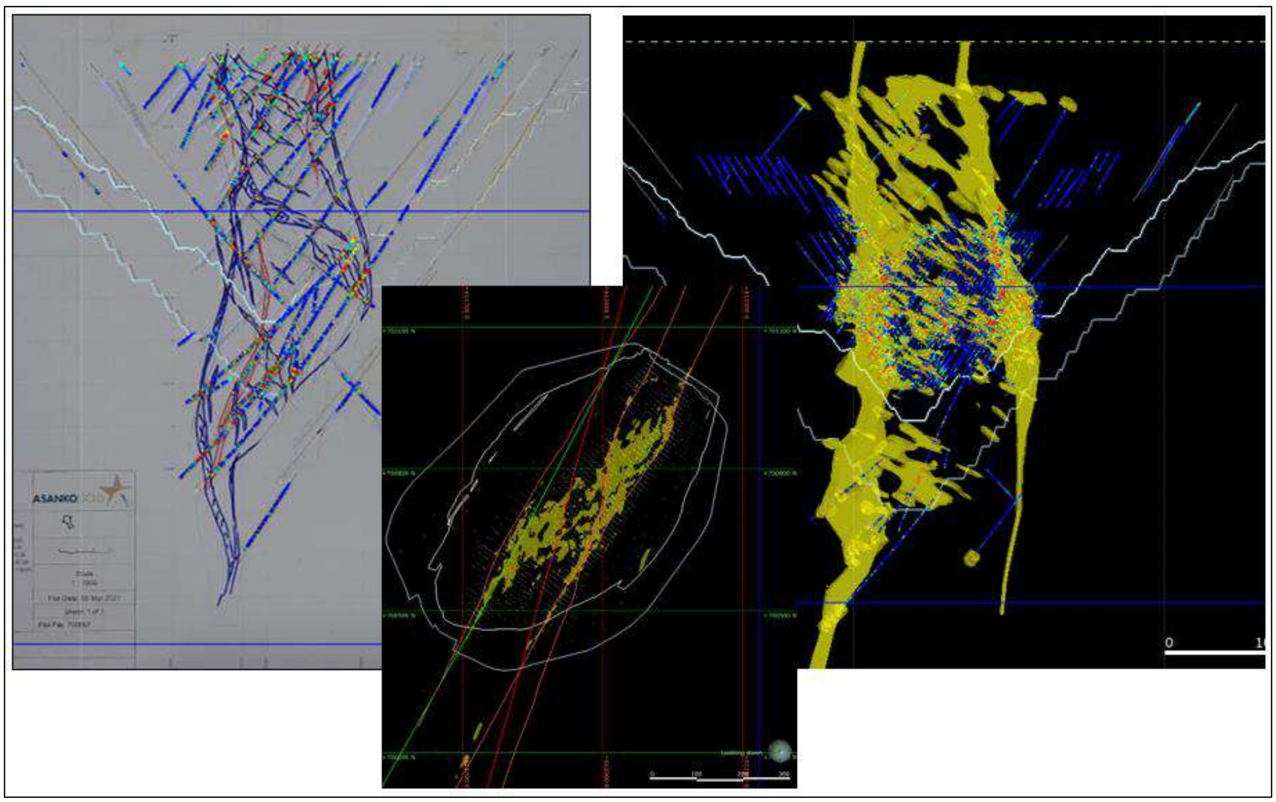


Figure 7-7 Nkran Plan View and Cross-section Through Pit Showing Mineralized Domains Based on Grade, Vein Density and Orientation Data

Source: Asanko Gold Mine, 2021

7.4.2 Esaase

Broadly speaking, the Esaase deposit area can be referred to as a ‘system of gold-bearing quartz veins hosted by tightly folded Birimian-age sedimentary rocks arranged along an NNE-SSW trending strike’. Since the maiden resource release in October 2007, various simplified geological models have been used to constrain the resource estimation.

The 2007 maiden Mineral Resource for Esaase used a simple 'two mineral domain' model to geologically constrain the resource, consisting of Hanging Wall and Footwall zones. The Hanging Wall zone consisted of shale and siltstone and the Footwall zone, predominantly greywacke (Coffey, 2007).

The 2019 model used four 'litho-stratigraphic' units (Upper Siltstone, Cobra Unit, Central Sandstone, Python Shear (or Footwall) Sandstone) to constrain modelling (see Table 7-2), all of which were believed to be bounded by NE-SW trending sheared contacts.

Table 7-2 Stratigraphic Unit with a General Description

Stratigraphic Unit	General Description
Upper Siltstone	Interbedded succession of sandstone (Upper Sandstone unit) and siltstone layers. The Mamba shear zone marks the top contact of the unit.
Cobra Siltstone	Distinctive, sheared, and folded pelitic and carbonaceous succession which caps the Central Sandstone. The Cobra unit contains shear–bounded discontinuous shale bands.
Central Sandstone	The Dominant gold-bearing unit is exposed in the Esaase starter pit and represents the principal economic unit.
Python Shear Sandstone	High-strain bounding Python shear with relatively undeformed Sandstone in the footwall which extends to the Viper Shear Zone.

These units are considered valid litho-stratigraphic units for Esaase, although recent work by Pratt (2021) highlights a tectono-stratigraphic unit between the Central Sandstone and the Cobra Unit that he refers to as 'The Mobile Zone'.

The mineralized domain model used currently as a basis for resource modelling is based on recognising the distribution of vein arrays using quartz vein percentages, assisted by orientation data and pit mapping. In addition, the wealth of grade control data to date highlights the distribution of these vein arrays along fold hinges. These grade control patterns are best seen in level plans rather than cross sections due to the steeply northeast plunge to both mineralization and lithology.

The lithostratigraphy and structure is best described in the modified excerpts and figures from Pratt (2021) italicised below:

The rocks are entirely metasedimentary, varying from black, organic-rich mudstones to coarse grained, almost pebbly sandstones (though probable thin, late dikes were also seen in core photos). Examples of sedimentary textures are shown in Figure 7-8. The style of deposition was turbiditic, shown by some normally graded sandstone beds with finer, planar laminated to ripple cross bedded tops. (There are some examples of reverse grading in poorly sorted greywackes.) The pyritous black mudstones are hemipelagites, deposited under oxygen-poor (anoxic) conditions. The pyrite is almost certainly diagenetic. The pyrite was probably remobilized during metamorphism and hydrothermal alteration. The grade of metamorphism is probably low greenschist (indicated by lack of true mica schists/phyllites and the presence of cordierite (or andalusite). The main minerals are very fine-grained white mica, quartz, and feldspar. Feldspar seems to be preserved in the least altered, footwall sandstones suggesting that the white mica (sericite) in other rocks, particularly the Cobra Unit, is ultimately of hydrothermal origin.

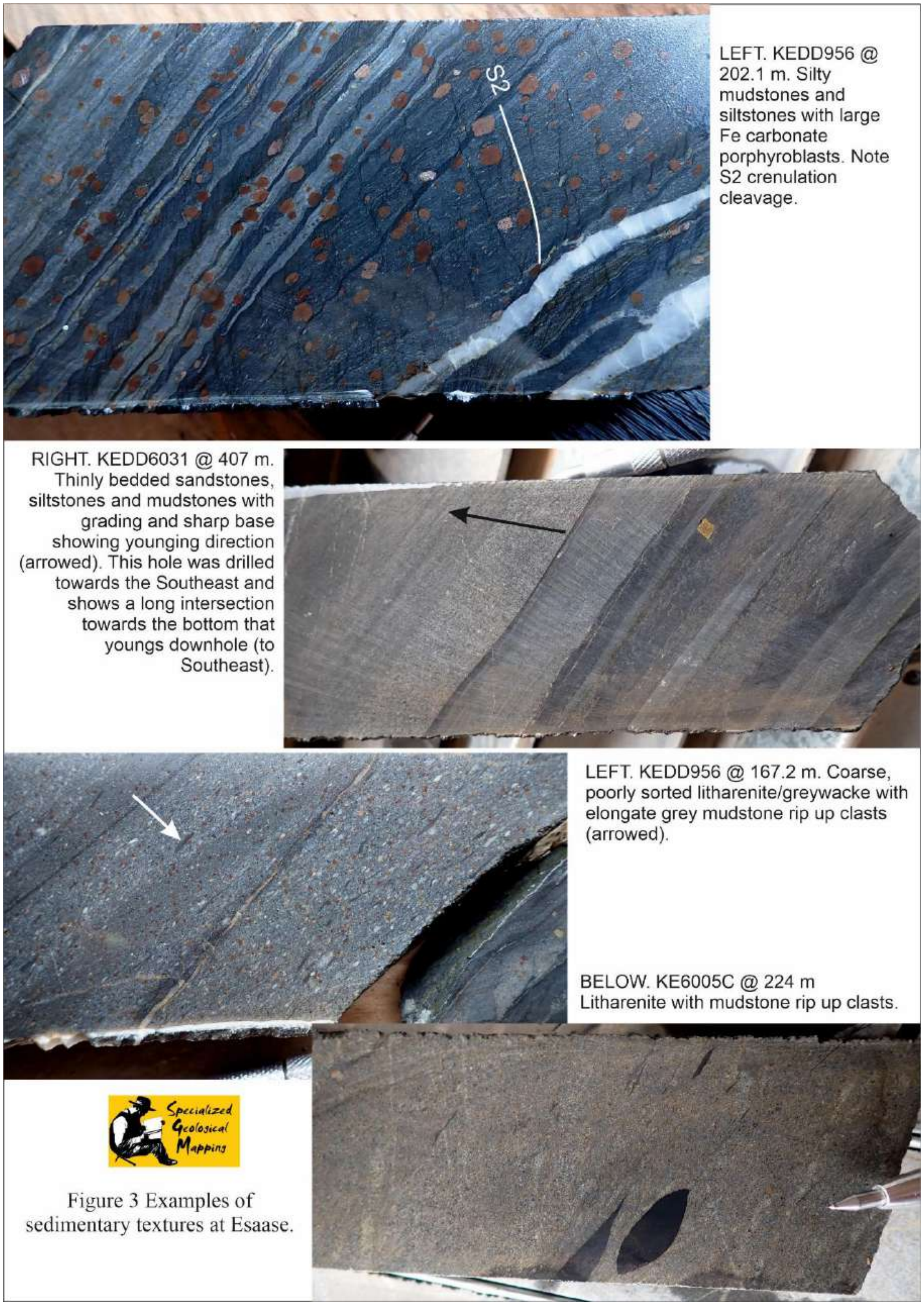


Figure 7-8 Examples of Sedimentary Textures at Esaase

Source: Pratt, 2021

7.4.2.1 Lithostratigraphic Scheme

In the North of Cut 3, the lithostratigraphy comprises five main components, one of which is best described as 'tectonostratigraphic' (see Figure 7-9).

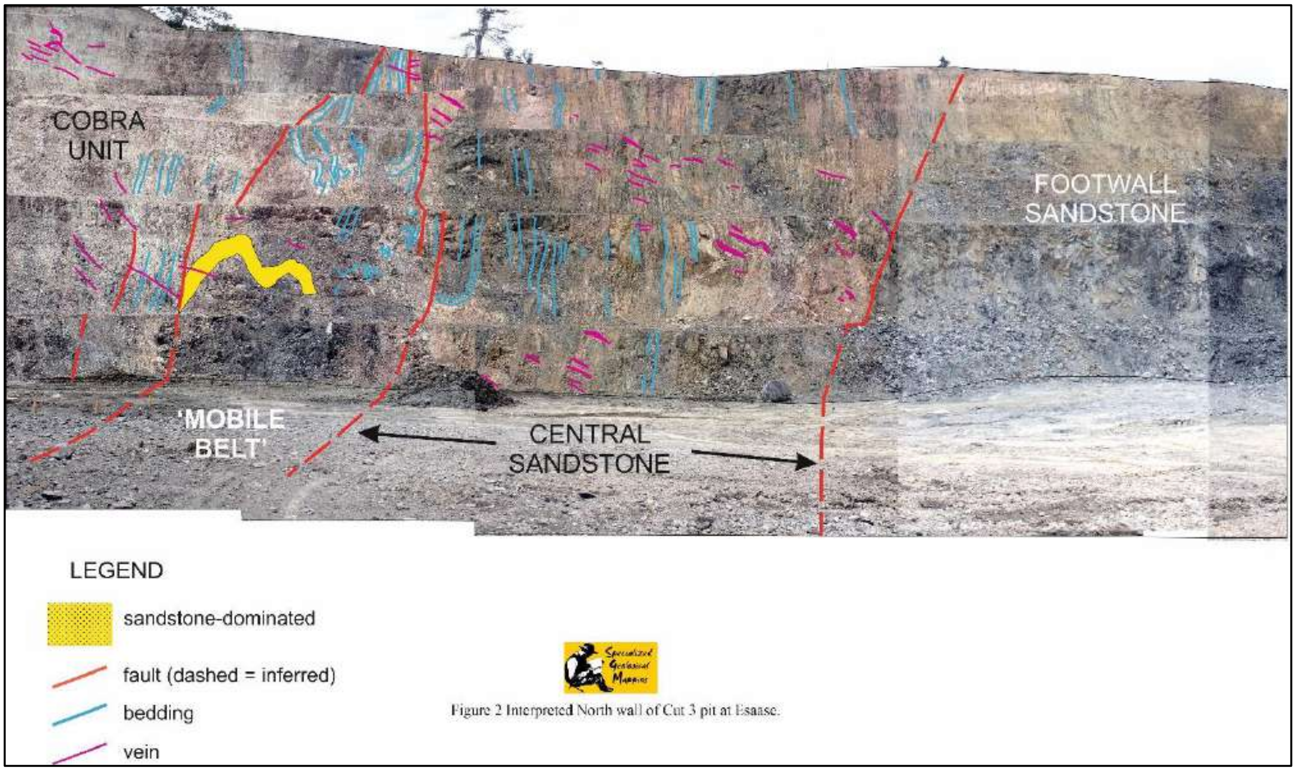


Figure 7-9 Interpreted North Wall of Cut 3 at Esaase

Source: Pratt, 2021

Figure 7-9 shows some of these components, along with en echelon quartz vein swarms (in magenta). Figure 7-9 shows a cross section across the North Wall area of Cut 3, approximating to the photo above. Broadly, the beds in Cut 3 seem to young from East to West (oldest to youngest). They comprise:

1. The footwall grey sandstones and siltstones (the 'Grey Sandstones' or 'Footwall Sandstone' of previous Esaase reports). These thickly bedded sandstones are generally fine grained and well sorted. The main characteristic is the colour: they are grey and there are no intervening black mudstones. There are also common interbeds of sandstone with planar lamination and ripple cross stratification (useful for younging directions – not common in the Central Sandstone). The rocks are tough and relatively fresh, even close to the original ground surface. Some individual sandstone beds are very thick. They can contain large euhedral grains of pyrite. The contact with the overlying Central Sandstone is a fault in the North Wall of Cut 3 (Figure 7-9). It is also important to emphasize that the footwall sandstone contains significant folds.
2. The 'Central Sandstone'. This comprises medium- to coarse grained, moderate- to poorly sorted litharenites (quartz, feldspar, rock fragments). Mudstone rip-up clasts are common (Figure 7-8). Some individual sandstone beds are probably more than 3 m thick (true thickness). Towards the top of the unit, the litharenites are better described as greywackes. There are common thin interbeds of black pyritous mudstones, identical to the 'Cobra Unit'. The sandstones generally have a weak cleavage and are commonly strongly sericitic or clay (smectite) altered.

3. The ‘Mobile Belt’ (or ‘Dead Zone’, because of mostly low gold grades) (Figure 7-9). This belt is of strongly deformed, folded, and sheared black mudstones and sandstones. It is obvious in the North Wall of Cut 3 (Figure 7-9). This zone partly coincides with the previously modelled ‘Cobra Shear’, but that modelled shear is much narrower and cuts across the Mobile Belt.
4. The ‘Cobra Unit’. Pratt (2021) defines this as all the rocks between the Mobile Belt and the Hawk Fault. This complex unit comprises alternating sequences of black, pyritous mudstone- and sandstone-dominated rocks. There are a few packets of thickly bedded sandstone, commonly greywacke (sericitic, with a strong cleavage). One of these is probably the ‘Upper Sandstone’ mentioned in the past. Overall, the high pyrite content causes a distinct purplish hematite staining. The mudstones commonly have a strong S2 crenulation cleavage and common spherical porphyroblasts of cordierite or andalusite (now altered to fine grained mica). These porphyroblasts are locally overprinted by a halo of Fe carbonate. Fe carbonate also occurs as discrete porphyroblasts (Figure 7-8). There are almost certainly significant tight or isoclinal folds within the Cobra Unit, which repeat the sandstone units, however locating the hinges can be difficult.
5. The Hawk Unit (approximately equivalent of the previously modelled ‘Upper Siltstone’). This lies above (west of) the Hawk Fault. It comprises medium- to thickly bedded litharenites, locally coarse grained, with interbedded dark grey mudstones. It weathers in yellow, red, and purple colours, quite different from the Cobra Unit. Oxidation penetrates more deeply in this unit. Younging data indicate that this unit is the right way up (younging Northwest). It shows complex folds, with some gently dipping beds (Figure 7-10).

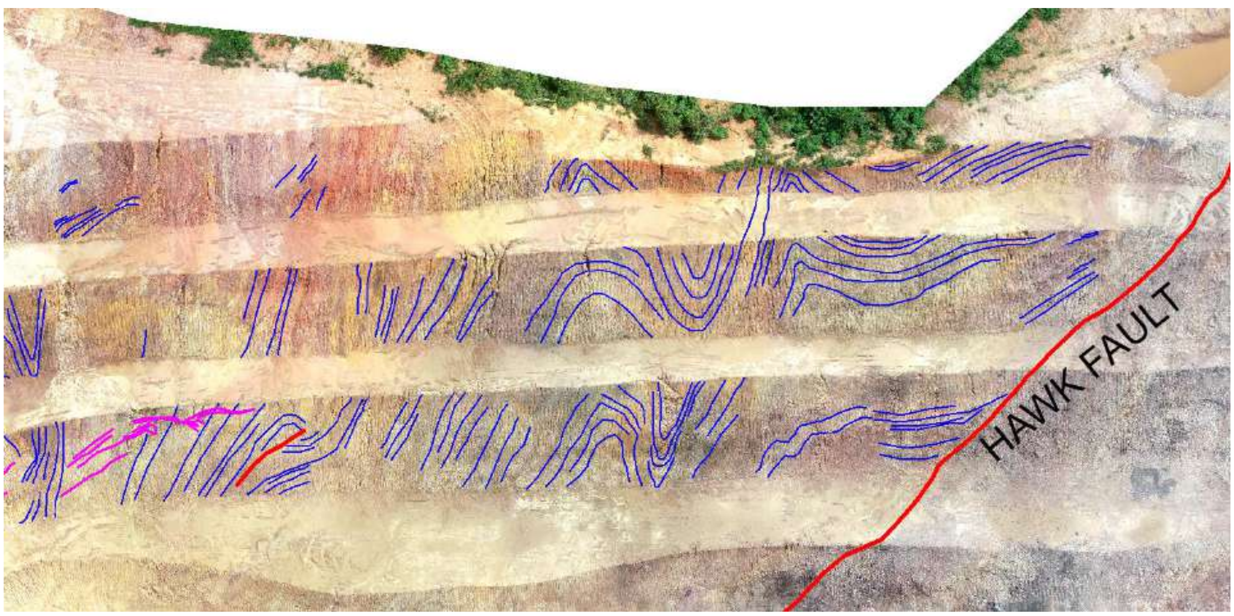


Figure 7-10 Complex Folding in the ‘Hawk Unit’ Adjacent to the Hawk Fault

Structure

D1 Deformation

The structural ‘grain’, mostly defined by bedding and schistosity, is the product of a single major deformation (D1). The bedding at Esaase is mostly sub vertical and Northeast-striking. The blue rectangles in Figure 7-11 are downhole bedding measurements. The Dead Zone (Mobile Belt) is clearly visible as a gap in gold grade.

It is tempting to say that the entire sequence youngs towards the Northwest, like above the Hawk Fault. However, probable tight- to isoclinal folding is present. The hinges are under-represented in the mapping because they are trickier to spot in benches. They are also poorly represented in the downhole oriented bedding measurements. But there is clear evidence of folding; there are reversals in younging direction in drillholes. For example, a large part of KEDD6031, from 340-450 m depth, shows younging downhole (towards the Southeast).

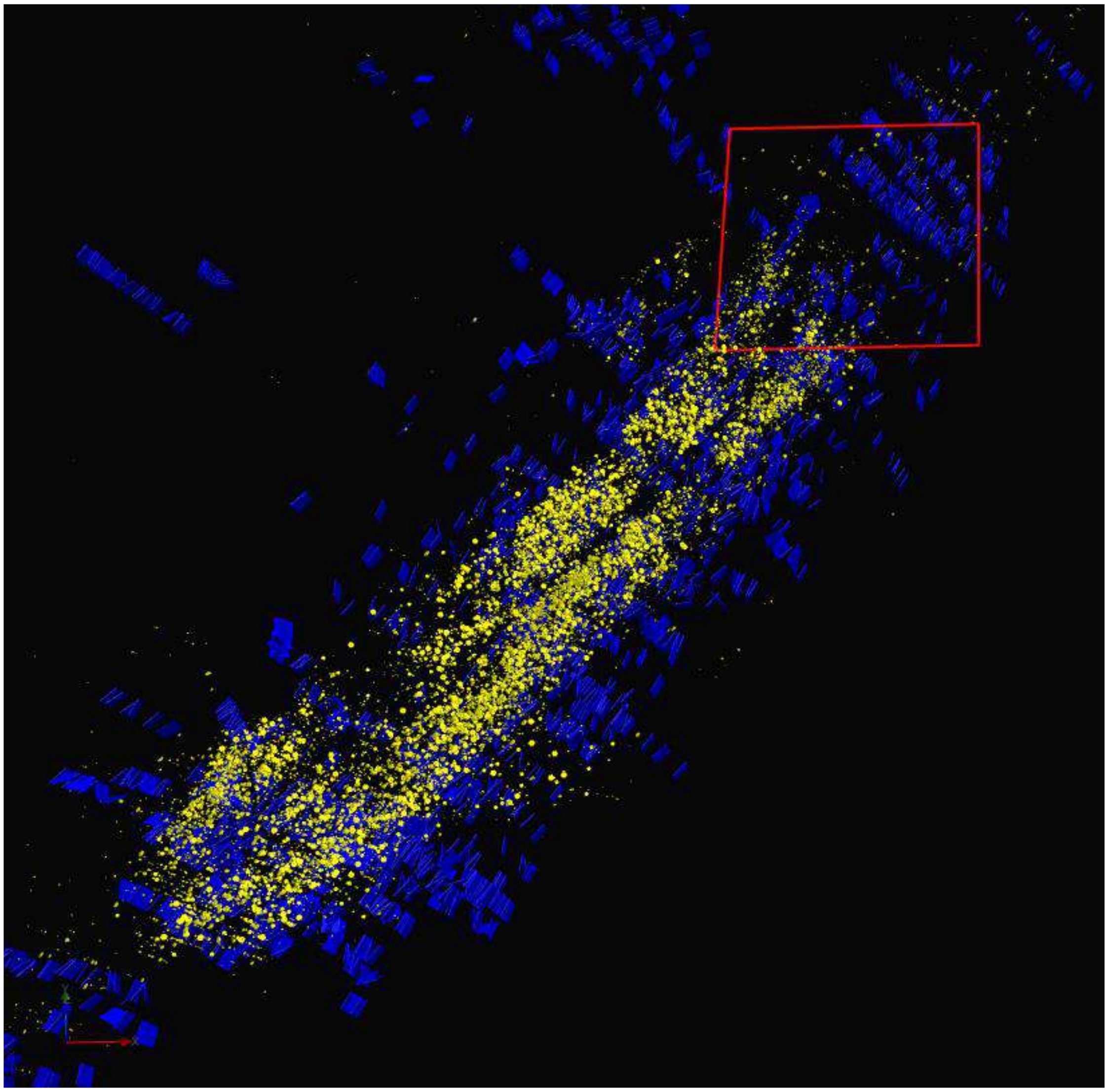


Figure 7-11 Illustrates the Gold-poor/Dead Zone Associated with the 'Mobile Belt'

The North Wall transect in Cut 3 (Figure 7-9) shows five main structural domains:

1. Open to tight folds occur in the hanging wall of the Hawk Fault, a major structure with a probable large post-mineral offset. These folds are very visible in the pit wall, emphasized by variegated colours. The rocks are mainly sandstones. The younging appears to be upward/northwest.
2. Between the Hawk Fault and the Mobile Belt, the Cobra Unit comprises interbedded black mudstones and sandstones, with at least one packet of thickly bedded sandstones (probably the 'Upper Sandstone'). Minor folds plunge sub vertically or steeply towards the northeast.
3. The Mobile Belt has been described already; a belt of strongly folded rocks sandwiched between major faults (it is cross cut by Galiano's Leapfrog-modelled 'Cobra Shear'). It has low gold grade. Fold hinges plunge sub-vertically or steeply northeast.

4. The Central Sandstone to the Southeast of the 'Mobile Belt' seems to comprise uniformly bedded rocks in the North Wall of Cut 3 (Figure 7-9). Major folds are likely to be present within it. This is supported by younging direction reversals in KEDD956.
5. The footwall grey sandstones also have fold hinges that plunge subvertically or steeply northeast. The main difference is the intensity of deformation and alteration. Sericite is present in the Central Sandstone but absent in the grey sandstones. Veins also tend to be carbonate-dominated. Bedding is less disturbed and sheared. This is confirmed by mapping in Cuts 2 and 3, where fold hinges (Figure 7-12) can be directly measured. Many plunge almost vertically.

The main cleavage (S1) is approximately axial planar to small scale F1 folds. Examples are shown in Figure 7-12.

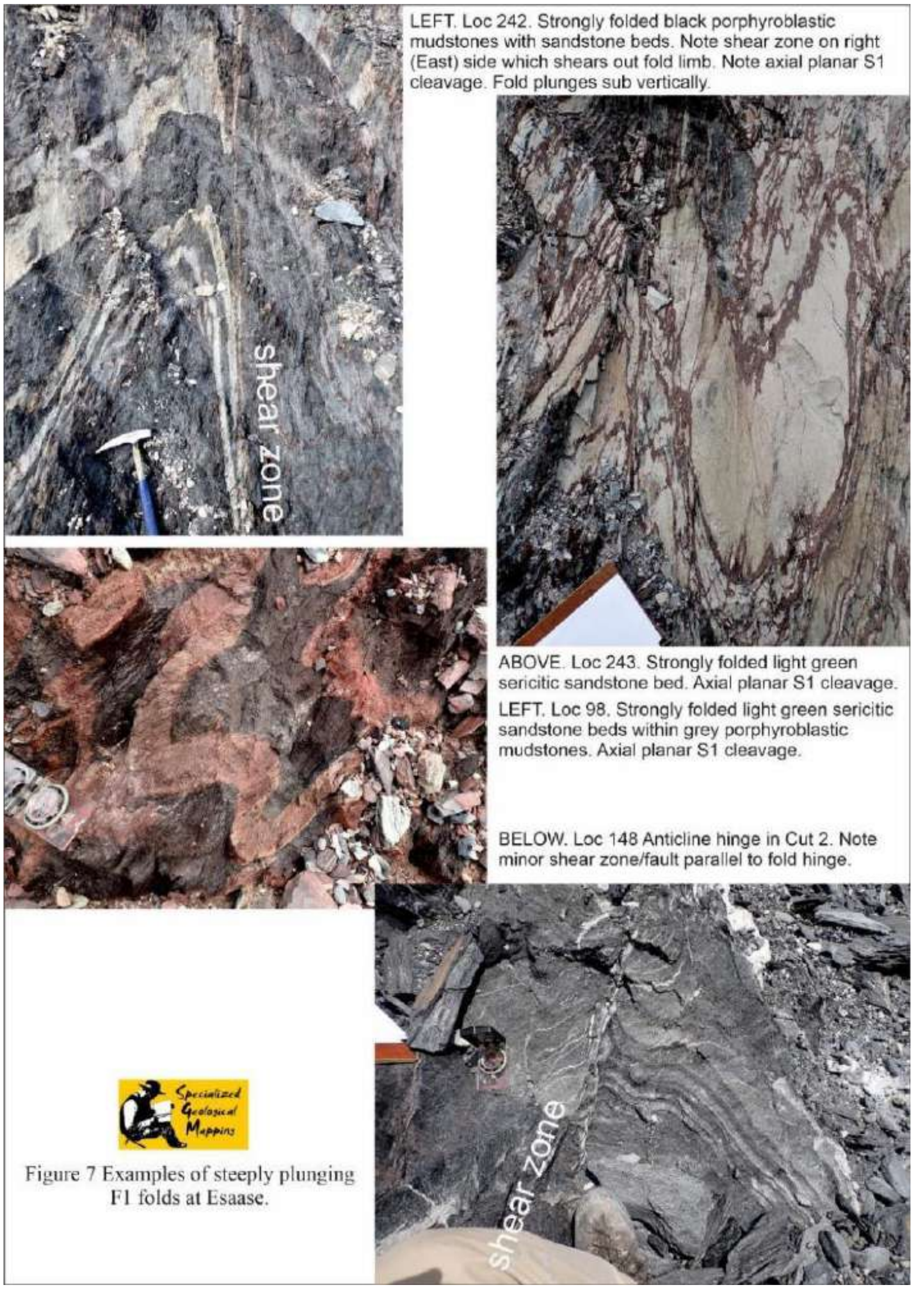


Figure 7-12 Examples of Steeply Plunging F1 Folds at Esaase

Source: Pratt, 2021

D2 Deformation

There is localized D2 deformation. This is manifested as kink bands and F2 folds (Figure 7-13 & Figure 7-14). Major folds are not recognized. An S2 crenulation cleavage is widespread within the muddier rocks (see Figure 7-8). Some significant quartz veins occur along F2 fold hinges, suggesting that the D2 event is related to gold mineralization. Of note, the S2 crenulation cleavage orientation is quite variable, suggesting that it may reflect local forces, due to movement on nearby faults/shear zones.

Faults and Shear Zones

Mapping and logging at the north end of Cut 3 show numerous significant northeast-striking, subvertical faults (Figure 7-9). They comprise narrow zones (mostly < 1 m) of gouge and sheared/broken rock and are commonly hosted by ductile black mudstones. Apparent 'drag' folds are common in the foot- and hanging walls. The 'Mobile Belt' comprises of two subparallel faults (including the 'Cobra Fault') with a zone of intense folding, transposed bedding, shearing and S2 crenulation between. Figure 7-15 shows some textures from the 'Mobile Belt'.

To best understand the structure of Esaase, drill data should be viewed perpendicular to the average fold axis. Doing this, for example with the exploration and grade control assay data, seems to show evidence of folds. The key to understanding the distribution of the lithostratigraphic units, arrays of en echelon quartz veins, and, ultimately, gold grade, lies with these folds.

There are also multiple shear zones/faults within the Cobra Unit and within the Central Sandstone. It is strongly suspect that these multiple shear zones/faults have been mis-correlated between holes. The simplest parameter to model is the first appearance of thick sandstones (top of Central Sandstone). This contact is faulted and sheared in Cut 3, but, in some places, it seems like a normal lithostratigraphic contact. The contact is also commonly marked by the appearance of major, en echelon quartz tension gash veins (because the sandstone is more competent).

Veins

There is a clear correlation between the major quartz veins and gold grade. In drill core, the veins commonly present as en echelon tension gash veins at low angle to the core axis (Figure 7-16 and Figure 7-17). This is borne out by mapping, which shows swarms of veins that consistently strike anticlockwise of the structural grain, approximately north-south and sub vertical to northeast dipping. This implies a component of sinistral movement on the controlling structures (faults).

Some pertinent observations regarding veins at Esaase:

1. Veins within the competent sandstones can appear relatively planar and undeformed (though some are gently folded and boudinaged) (Figure 7-16 and Figure 7-17). However, these same veins can be traced laterally into more ductile units where they become sheared, parallel to the S1 cleavage and folded.
2. The larger, tension gash veins have stylolites of organic material (Figure 7-17).
3. Some quartz veins are folded in a ductile fashion and show an axial planar cleavage which seems to be S1 (Figure 7-16).
4. Even lithologies that may be considered as ductile, locally contain en echelon to sigmoidal tension gash veins that carry gold grades. See KEDD956 @ 218.8 m. In other words, the veins are not restricted to certain rock types.
5. Veins seem to be thicker within more competent rocks (thickly bedded sandstones). This is obvious in the North Wall of Cut 3 (Figure 7-20).
6. The quartz veins are dominated by quartz, but can contain orange weathered Fe carbonate, light grey carbonate, minor pyrite, rare arsenopyrite, and light green mica (probably sericite) (Figure 7-16 and Figure 7-17).
7. Veins within the grey footwall sandstones seem to be more carbonate-dominated.

Figure 7-13 Examples of Deformation Fabrics at Esaase

Source: Pratt, 2021

Figure 7-14 Examples of F2 Folds and S2 Crenulation Cleavage at Esaase

Source: Pratt, 2021

Figure 7-15 Textures from the 'Mobile Belt' at Esaase

Source: Pratt, 2021

Figure 7-16 Vein Textures at Esaase Part 1

Source: Pratt, 2021

Figure 7-17 Vein Textures at Esaase Part 2
Source: Pratt, 2021

Controls on Gold Mineralization

Gold at Esaase occurs in Northeast-striking, sub vertical corridors, parallel to the structural grain. But it is not clear whether these corridors are controlled principally by through-going faults/shear zones or by rock type, or a combination of both. The best understanding on the controls on gold comes from the exposures north of Cut 3. Here gold grade can be compared directly with mapped structures.

The strong ductility contrast between the Central Sandstone and the ductile ‘Mobile Belt’ (mostly black mudstones of the Cobra Unit), is a clear example of ‘contact-related’ orogenic gold mineralization. The Central Sandstone is clearly a good competent host for quartz veining and has quite a wide area of mineralization (visible in the tension gash veins of Figure 7-16 and Figure 7-19. The tension gash veins strike anticlockwise of bedding, suggesting a component of contemporaneous sinistral shear along the principal faults. The abrupt decline in gold grade to the Southeast seems to coincide well with the fault shown in Figure 7-20, which also marks a change in alteration (less sericite and pyrite). This strongly suggests a post-mineral offset on this fault. (The closest modelled fault in the Galiano Leapfrog model is the ‘Python Shear’).

Figure 7-18 shows the grade shapes (in blue) with, and without, the gold grades.

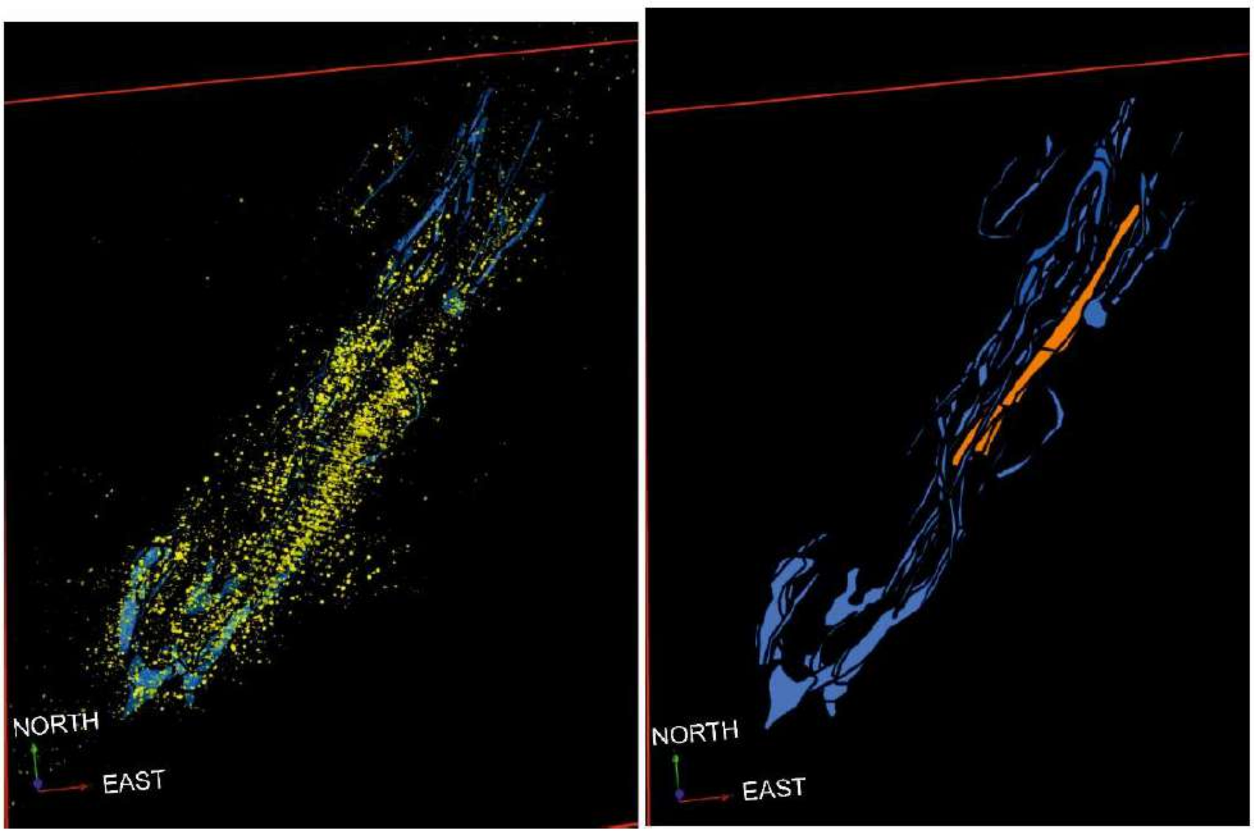


Figure 7-18 Grade Control Drilling Patterns Highlighting the Distribution Around Folds

Source: Pratt, 2021

The most striking feature is the lack of gold in the ‘Mobile Belt’ (or ‘Dead Zone’ – shown in orange above). This is perhaps because the (dominantly) black mudstones were not a good host for veining. However, the major faults on either side of the ‘Mobile Belt’ were clearly a major control on gold. Their immediate foot- and/or hanging walls are zones of grade, likely explained by swarms of en echelon quartz veins.

There are also bends in the mineralization shapes, suggesting that folds are present and that favourable lithologies (massive sandstones) are mineralized. The most pronounced ‘bends’ occur in the South, in Cut 2. Mapping along the west wall of the pit indicate that the Central Sandstone is folded in a steeply plunging anticline/syncline pair. In fact, there may be multiple folds; the fold pair may be a simplification.

The fold hinges and limbs are mineralized with gold, suggesting this was a favourable area. The resolution in the grade control drilling is not quite sharp enough to decide if the sandstones within the Cut 2 folds host 'disseminated' gold (veins everywhere) or are cut by numerous corridors (mineralized faults or kink bands) of vein swarms. An example on the west side of Cut 2 is shown in Figure 7-19. It clearly shows a northeast corridor of veins, apparently without a major controlling fault. This belt of veins cuts across the lithostratigraphy but the veins are thicker in the sandstones. It may be comparable to the 'kink band' at the north end of Cut 3, or it may be developed along an incipient fault that never developed fully. Figure 7-19. shows an example of how, within this belt of veins, the veins swell in the more competent sandstone.

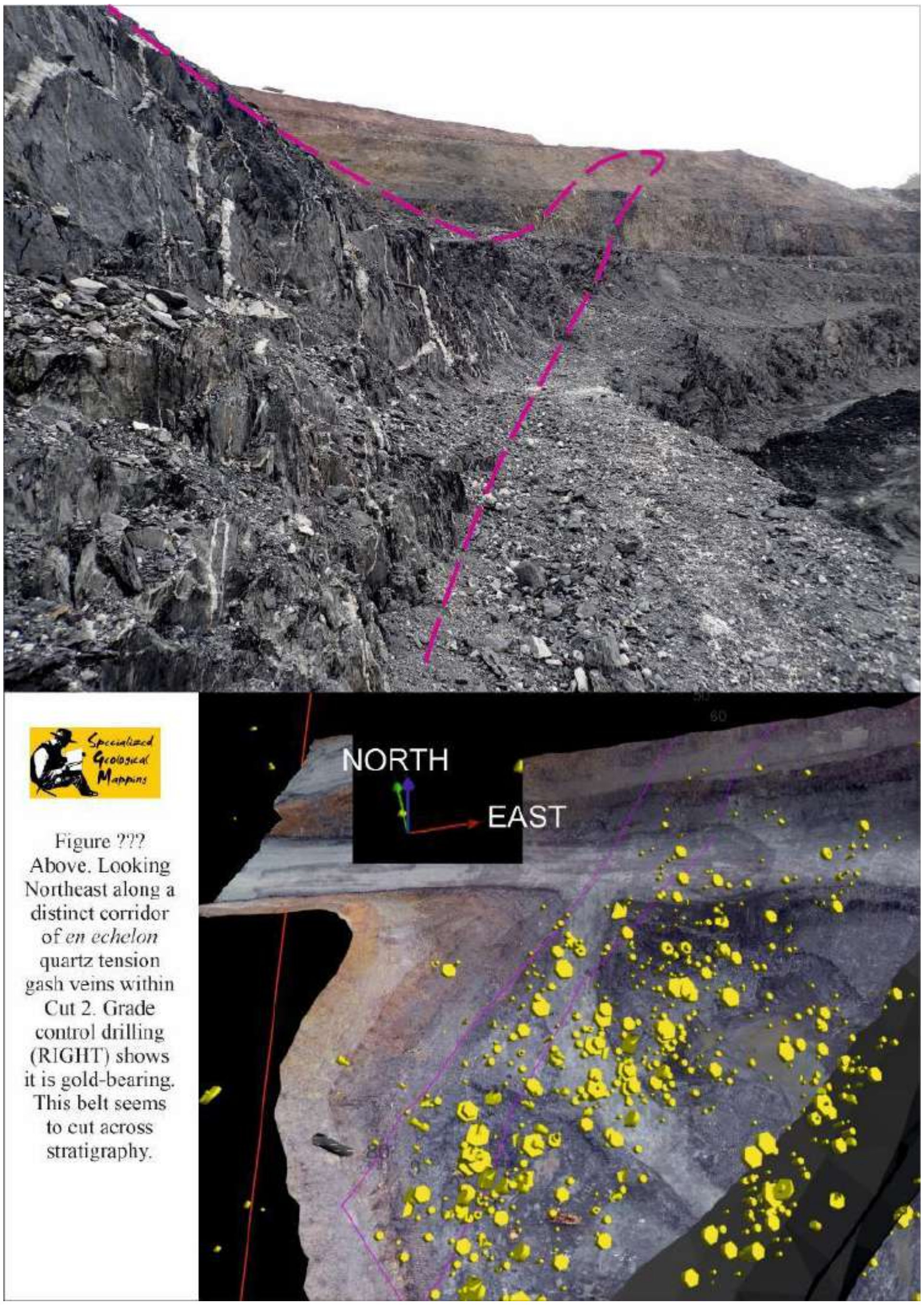


Figure 7-19 NE Corridor, Illustrating the en Echelon Tension Gash Vein Arrays

Source: Pratt, 2021

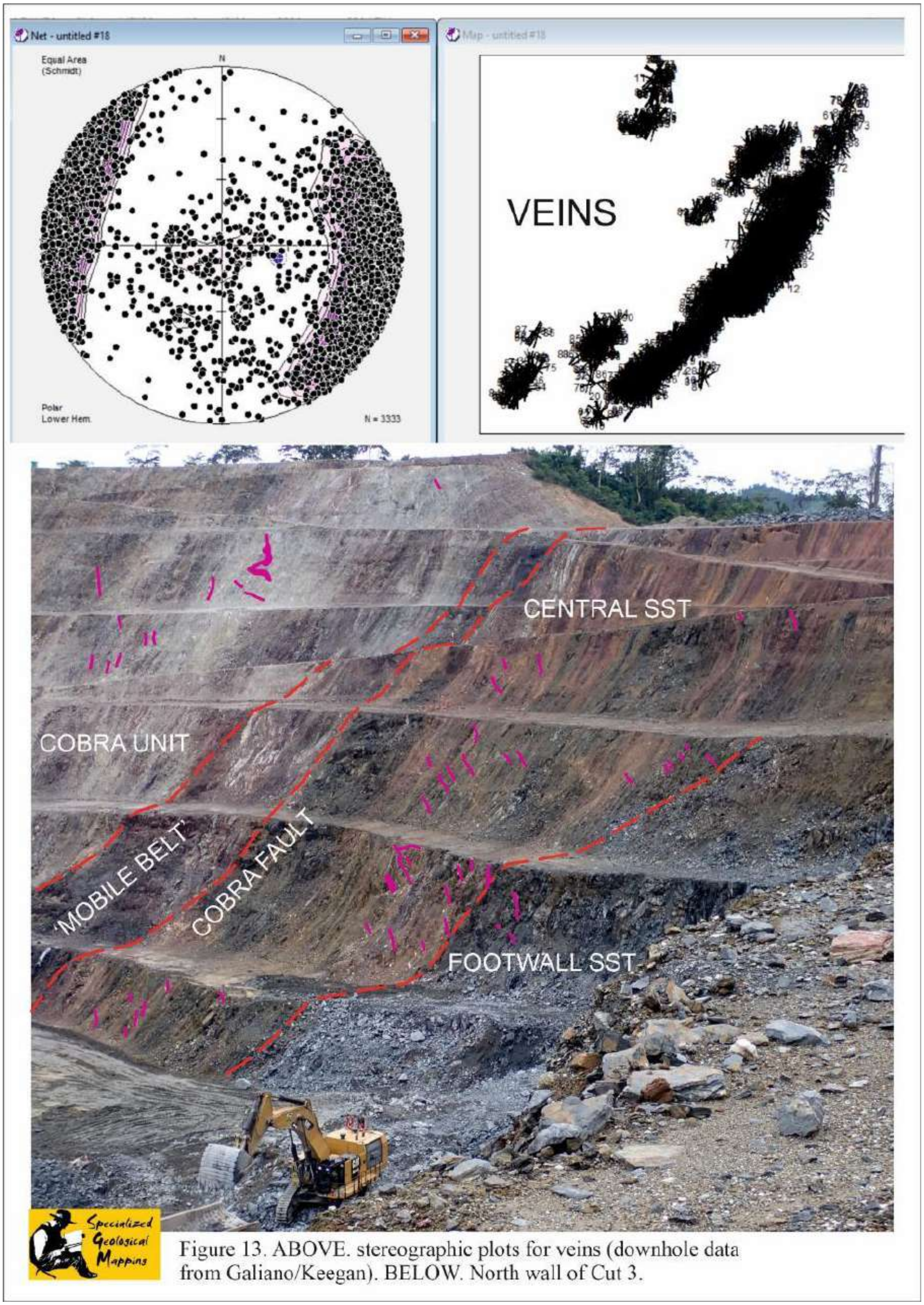


Figure 7-20 Stereographic Plots for Veins and North Wall of Cut 3 Showing Vein Distribution in Various Units

Source: Pratt, 2021

Figure 7-21 shows a simple model to explain the styles of mineralization at Esaase. Two styles are recognized:

1. The dominant control is sub vertical northeast-striking faults and shear zones. The faults are mostly not mineralized themselves, though there is some evidence of informal miners chasing some very narrow, late brittle faults. They probably also have a strong post-mineral component of movement. But the faults are flanked by belts of en echelon veins with gold, particularly where the adjacent host rock is competent sandstone ('contact orogenic'). This explains why the best grades are in the Central Sandstone. It is much more competent than the adjacent Cobra black mudstones. The veins lie anticlockwise of the fold hinges, suggesting a component of sinistral movement. There is also evidence that sandstones within the Cobra Unit were more favourable for vein development.
2. The second style comprises swarms of en echelon veins, kink bands and zones of incipient faulting that traverse various rock types. Within these belts, the veins are thicker, and grades higher, where they traverse competent sandstone.

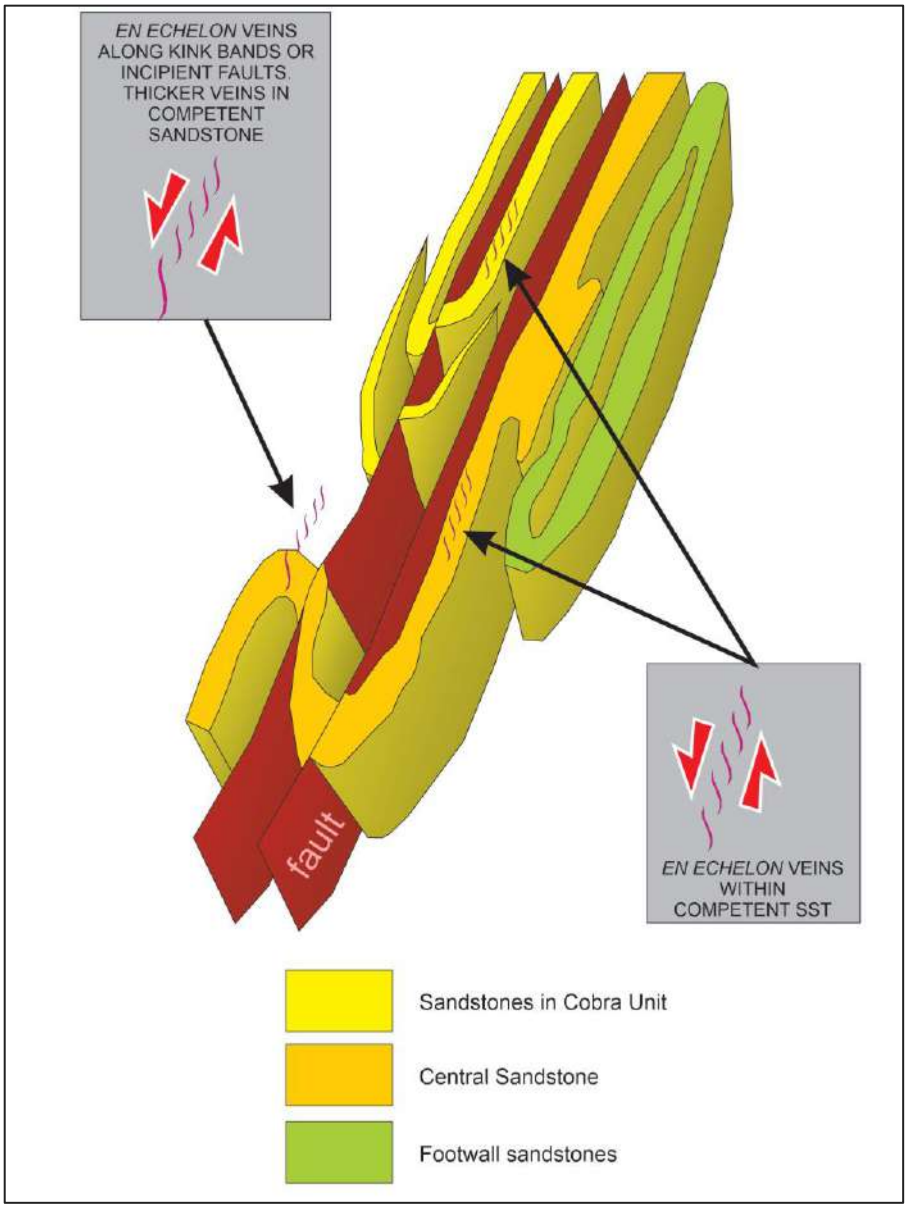


Figure 7-21 Schematic Geological Model for Fold Mineralization at Esaase

Source: Pratt, 2021

7.4.3 Akwasiso

The Akwasiso deposit lies some 4 km NE of the main Nkran deposit and geologically bears many similarities to Nkran. A granite intrusion surrounds a 080° dipping cross structure and mineralization hosted in bounding 035°N sub-vertical shear structures transgressing a sandstone/siltstone sequence.

The deposit is predominantly underlain by Lower Birimian metasedimentary rocks with dominant lithologies being sandstone, siltstone, shales, and a granitic intrusion. The contact between these sedimentary units is intruded by granitoids mainly of felsic composition (belt granitoids), which form elongated bodies parallel to the regional shears. In many areas, the contact between the metasedimentary rocks and the granitoids is associated with higher grades of mineralization. The metasedimentary rocks occasionally host disseminated sulphides and carbonates. Pyrite, the most prevalent sulphide, is most often oxidized to limonite or leached out leaving cubic casts. Carbonates, phyllites, graphitic schists, and volcaniclastics constitute the major components of these supra crustal rocks. They have well-developed schistosity that is parallel to bedding, striking NE usually between 40° and 50° and often dip steeply to either NW or SE away from the granitic body. The rocks are generally foliated with the shales displaying better development of foliation planes than the sandstones. Foliation dips steeply and slightly oblique to bedding.

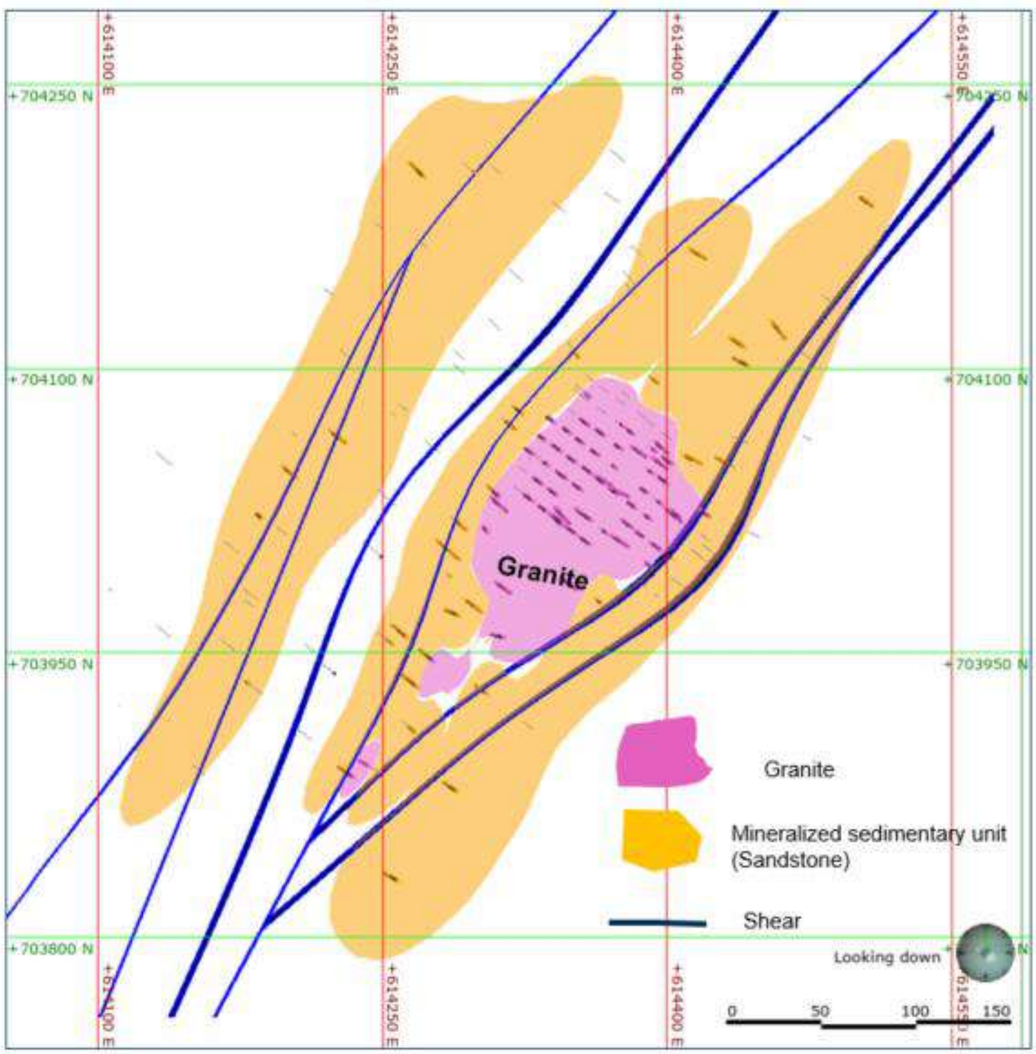


Figure 7-22 Akwasiso Plan View Showing Geology

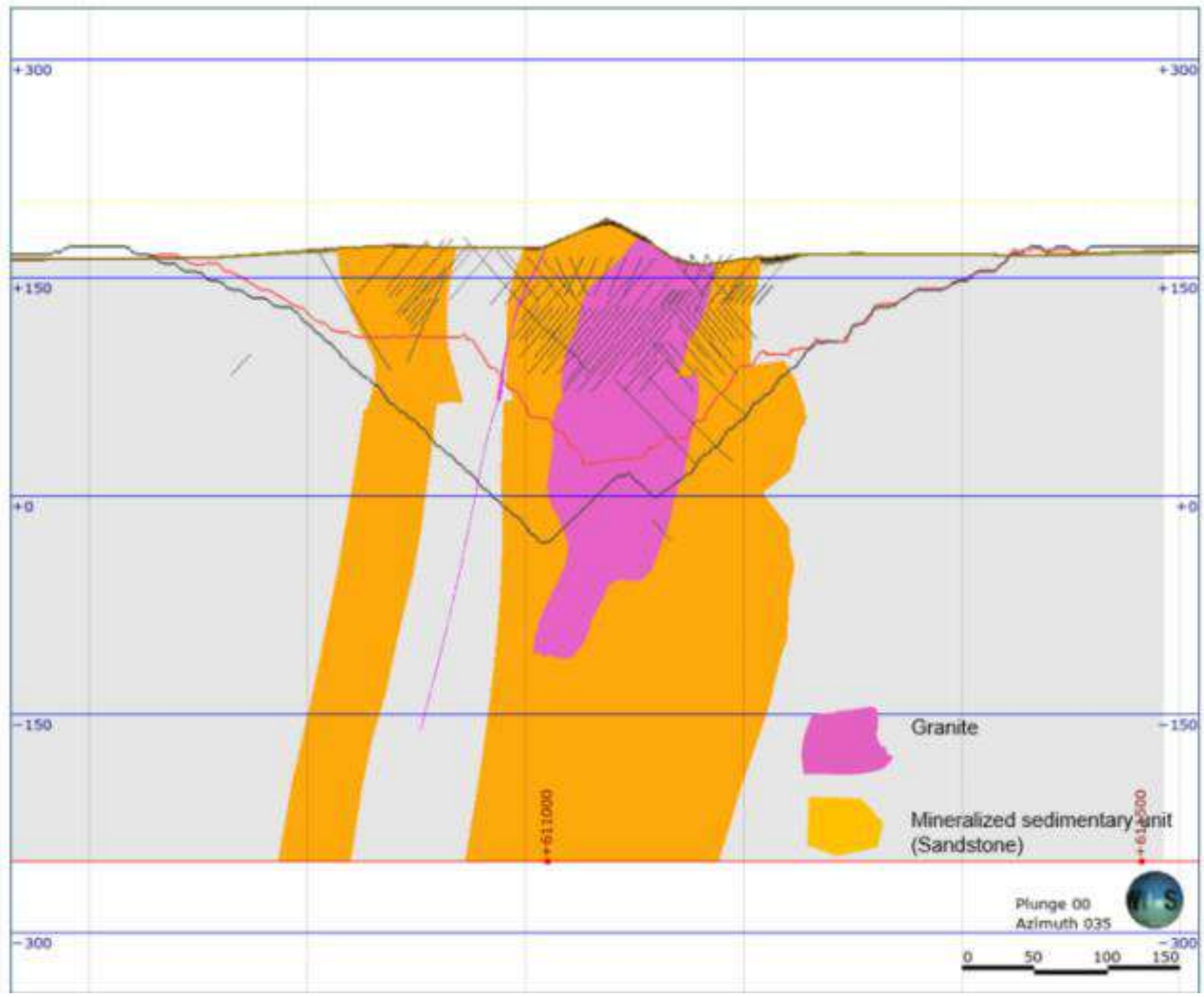


Figure 7-23 Akwasiso Cross-section Through the Pit Showing Geology

The sandstone unit appears to be the favourable host rock for mineralization where more brittle quartz-carbonate veins are localized. A plan view and cross-section at Akwasiso showing the deposit geology is provided in Figure 7-22 and Figure 7-23.

Akwasiso represents a smaller scale version of Nkran. Two shear zones are controlling the mineralization. The eastern mineralized envelope is associated with felsic porphyry emplaced along a sandstone siltstone contact. The intrusive seems to have occurred in a dilation jog with a potato shape plunging steeply to the north and terminated abruptly to the south. It is about 150-170 m along, and about 40-50 m across strike.

Mineralization is associated with increased carbonate quartz veining, quartz flooding in the felsic porphyry, arsenopyrite, sericite, and chlorite alteration. The alteration is pervasive with the granite and the walls of the country-rock. Higher grade intersections occur at the margins of the sandstone with the granite.

The other mineralized envelope is a stockwork of extension veins along a shear zone to the west occurring in a sandstone formation. The mineralization is 7-10 m wide and about 300 m along strike, crossing from one end of the pit to the other. The alteration assemblage consists of quartz carbonates, arsenopyrite, sericite, and chlorite, and pyrite. Figure 7-24 below shows the plan view of the mineralization envelopes at Akwasiso.

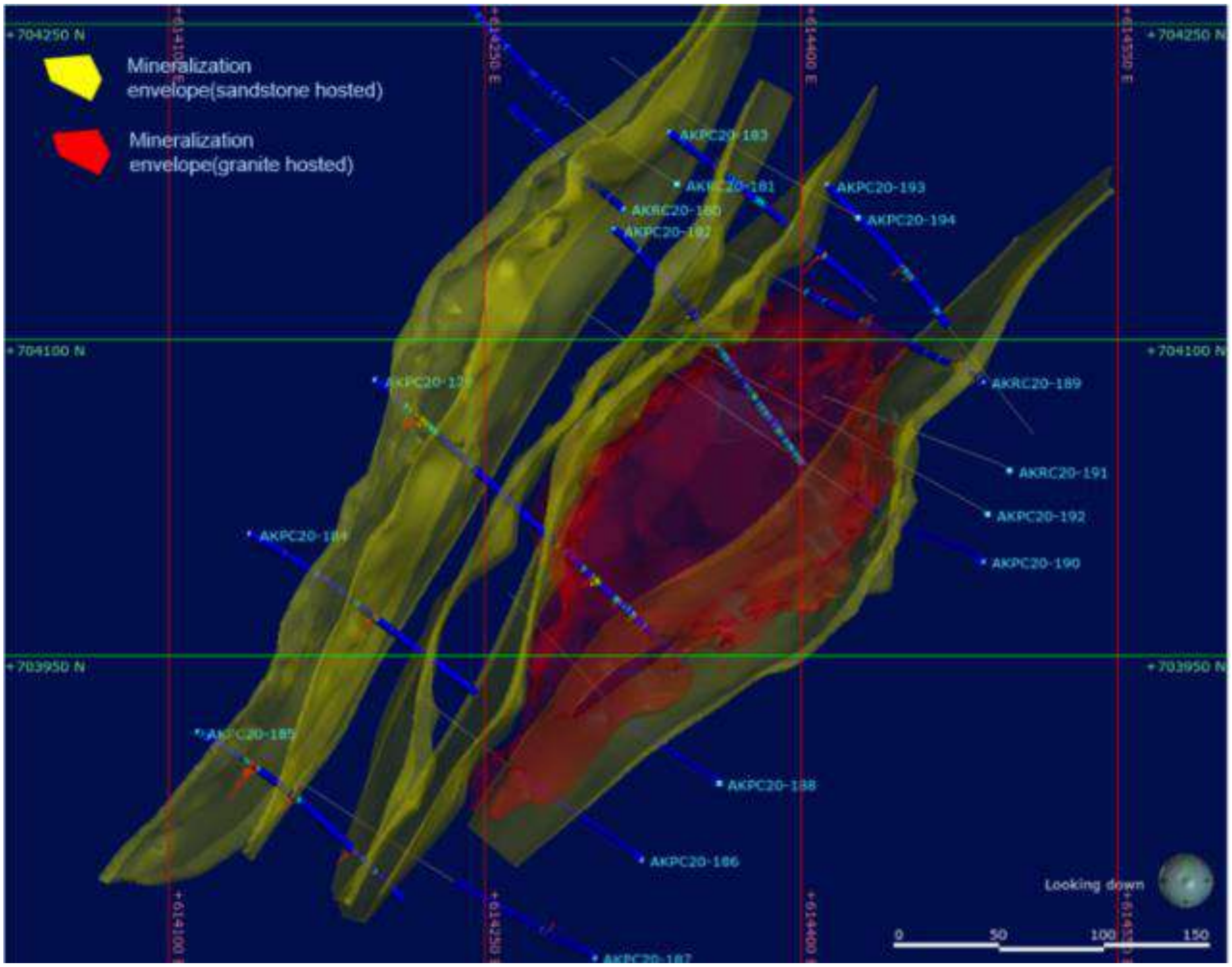


Figure 7-24 Plan View of Akwasiso Mineralization Envelopes at Akwasiso

7.4.4 Abore

The Abore deposit is located on the Abore-Esaase shear corridor which also hosts the Esaase deposit. The main rock types observed within the Abore pit consist of carbonaceous shale, siltstone (phyllite), thinly bedded wacke, and thickly bedded sandstone. The sedimentary sequence has been intruded by a granitic (tonalitic) intrusion. For the development of the geological model, the various lithologies have been grouped into the following:

- Interbedded siltstone dominant: The thinly bedded siltstone and shale (with a minor interbedded wacke component) is the principal geology domain on the western portion of the deposit. This forms the hanging wall host sequence to the granite intrusion
- Interbedded sandstone dominant: The footwall sandstone and greywacke interbedded sedimentary sequence is the principal lithology on the eastern portion of the deposit. This forms the footwall host sequence to the granite intrusion. The sedimentary rocks dip steeply to the NW between 70° to 85°
- Granite intrusion: An elongate granite (tonalitic) intrusion has intruded parallel to the main lithological domain boundary. The foliated granite dips steeply to the NW. The granite has been boudinaged and displaced by E-W (060) trending faults
- Dyke. A late cross-cutting west-east striking dyke features in the northern section of the deposit.

Several foliation and bedding relationships are observed at the Abore deposit. The most common feature is a pervasive foliation that is well developed in the fine-grained siltstones and shales and to a lesser extent in the coarser interbedded sandstone and wacke sequences. A strong foliation (040° strike and steep dip west) is also present on both the hanging wall and footwall margins of the granite, indicating emplacement before deformation. The hanging wall sequence of interbedded siltstone, shale, and wacke is significantly more deformed and foliated than the footwall sequence of sandstone with minor wacke, with several shears, trending on a bearing of 020°. These shears developed preferentially within the carbonaceous shale-rich units.

The presence of large-scale folding within the Abore pit is supported by the observation of opposing foliation/bedding relationships within the drill core. The second notable folding event is an NNE trending, steep north-westerly dipping foliation which cuts the earlier 040° trending fabric. Several of these structures are recognizable within the pit. These structures appear to be spatially associated with high-grade gold trends. A plan view and cross-section at Abore showing the deposit geology is provided in Figure 7-25 and Figure 7-26.

At least two (potentially three) phases of mineralization are recognized at Abore. Mineralization is constrained within the granite, with the overall trend of mineralization being parallel to that of the stratigraphy.

The dominant phase of mineralization is hosted in shallow west-dipping 1 cm to 10 cm thick quartz vein arrays which have developed primarily along the eastern margin of the granite contact and the sandstone-wacke dominated stratigraphy. Minor disseminated alteration is observed, despite the significant hydrothermal (sericite and arsenopyrite) alteration associated with the mineralized zones. Vein density, rather than vein thickness, seems to be indicative of higher-grade zones. Analysis of vein orientations showed that two vein types of shallow west-dipping and steep west-dipping occur.

Analysis of the grade control data shows discrete NNE zones of high-grade mineralization that have developed in the boudin necks of the granite bodies relating to early NNE trending structures. It is probable that these pre-dates the quartz vein-hosted mineralization, and is similar to that of Nkran, where shallow west-dipping vein arrays overprint steep, high-grade mineralization.

These same NNE bearing structures dextrally offset mineralization in at least three places along the deposit, which in part helps constrain proposed pit shapes (Figure 7-25 and Figure 7-27).

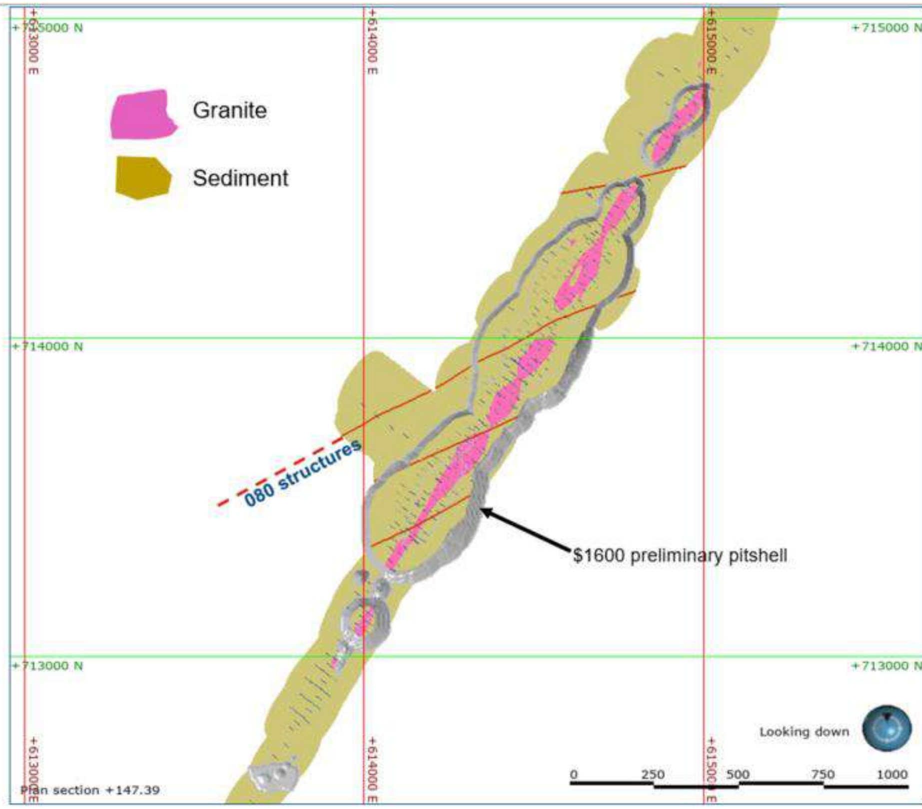


Figure 7-25 Abore Plan View Showing Drill Hole Distribution and Pit Shells

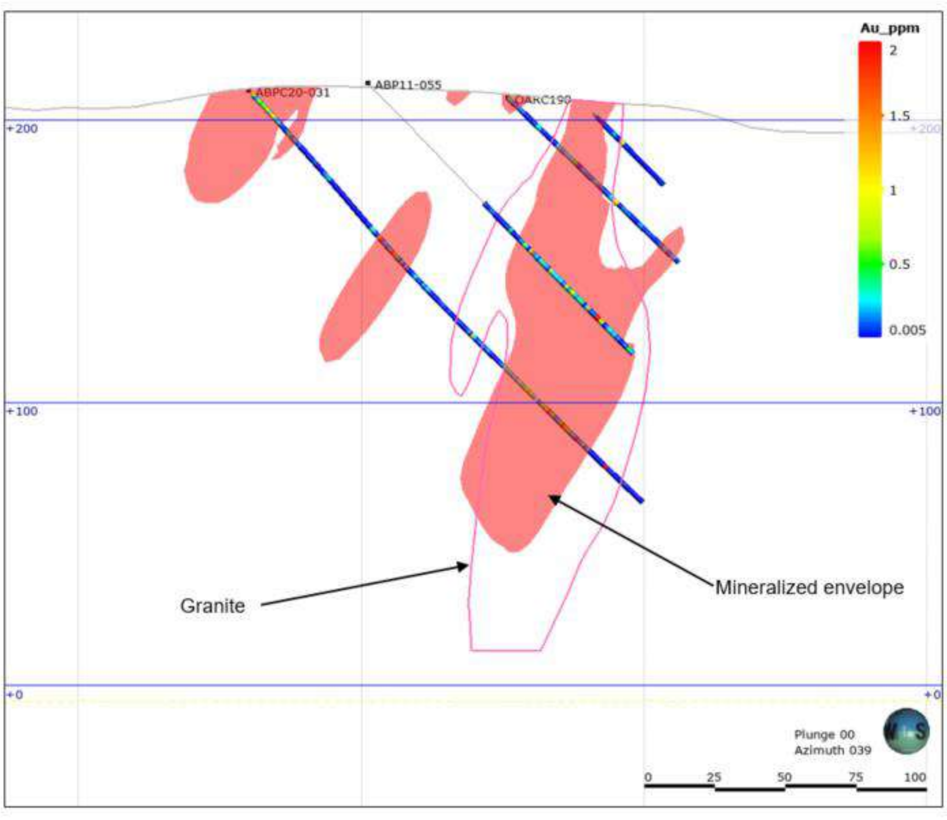


Figure 7-26 Abore Cross-sectional View Through the Pit Showing Geology

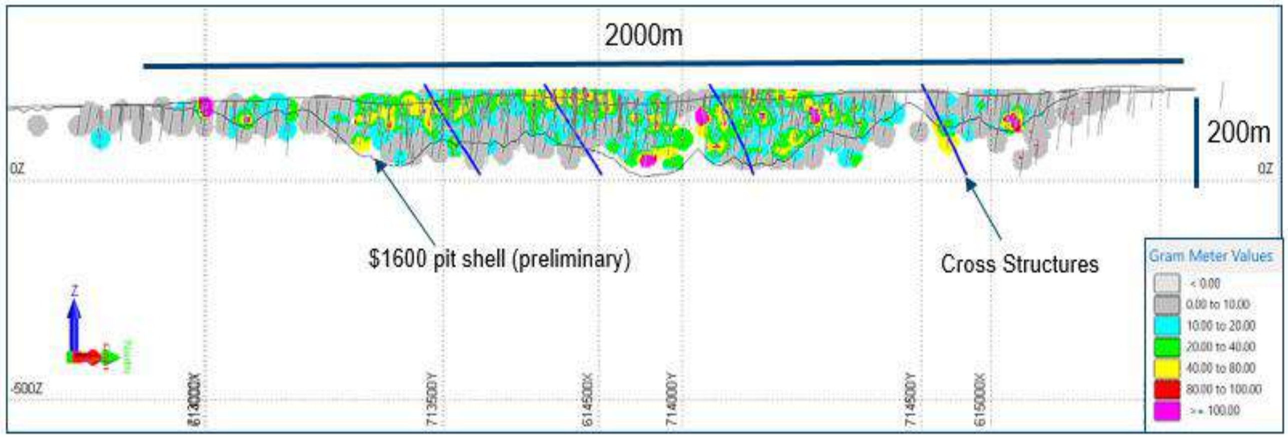


Figure 7-27 Abore Longitudinal-Section Through the Pit Showing Geology

7.4.5 Asuadai

The Asuadai deposit is located on the regional NE trending Nkran shear zone, approximately 10 km a long strike from Nkran. The prospect features a massive intermediate (tonalite) granitoid hosting a quartz stockwork system.

The main rock types observed within the Asuadai pits consist of thinly bedded carbonaceous shale, siltstone (phyllite), and more thickly bedded wacke and sandstone. Two narrow granitic intrusions (diorite dykes) intrude the metasedimentary sequence on the boundary between the two main sedimentary domains. Extensive shearing in places associated with silica flooding (and associated alteration), makes it difficult to determine the volcanic component of these rocks.

The general geology of the deposit may be broadly subdivided into two main sedimentary domains:

- NW sedimentary sequence comprising interbedded wacke and siltstone (with a minor shale component)
- SE sedimentary sequence consisting of interbedded sandstones and wacke lithologies, with a minor shale component. The sequence is separated by a granitic dyke intruding parallel to this main lithological boundary.

Bedding trends on a bearing of 40°, with local variations, along major structures of up to 00°.The stratigraphy at Asuadai has, like Nkran, been isoclinally folded and dips steeply (approximately 70°) to the west. The stratigraphy is locally imbricated and transposed along major structures which trend on a bearing of 00°.

As with Nkran, Asuadai is located on a 20° trending jog on a regional 35-40° trending structure and is characterized by phyllites dominant on the western margin and sandstone dominant on the eastern portion of the deposit. The granite forms the core of the deposit and is bounded by the two main sedimentary sequences.

Figure 7-28 illustrates the geology at Asuadai in plan view and cross-section.

The Asuadai deposit is characterized by preferential alteration of the sandstone and wacke (to a lesser extent) lithologies to a sericite-magnetite (±albite) assemblage. This alteration style appears to be distinctive to mineralization associated with the Nkran regional structural trend. Various stages of arsenopyrite and pyrite are observed, either disseminated throughout the core or as selvages to gold-bearing quartz veins. Arsenopyrite appears to be dominantly associated with the shallow SW dipping vein arrays, with significant disseminated alteration occurring within the granitic intrusion. Siltstone (and carbonaceous shale) lithologies are generally unaltered.

Early ductile mineralization appears to be associated with silicification and minor pyrite. The extensive overprinting and later reactivation of these structures makes it difficult to establish a distinct alteration package.

The deposit is relatively complex with several controls of mineralization that influences the geometry of the mineralization. Two distinct styles of mineralization are recognized:

1. Steep ductile type mineralization associated with the metasedimentary lithologies: this style was selectively overprinted by a later brittle brecciation event. This mineralization parallels bedding, or foliation. Stereographic projections of vein arrays show a 020° to 040° orientation dipping steeply towards the west. The steep ductile mineralization is seen to bind the granitic intrusion. This mineralization is also associated with structures parallel to the main granitic intrusion.
2. Shallow dipping quartz veins: This is the dominant phase of gold mineralization at Asuadai and consists of veins that vary in thickness from 1 cm to 60 cm. The flat-lying vein arrays are best developed in the granite. The veins have associated sericite-albite-arsenopyrite-magnetite alteration.

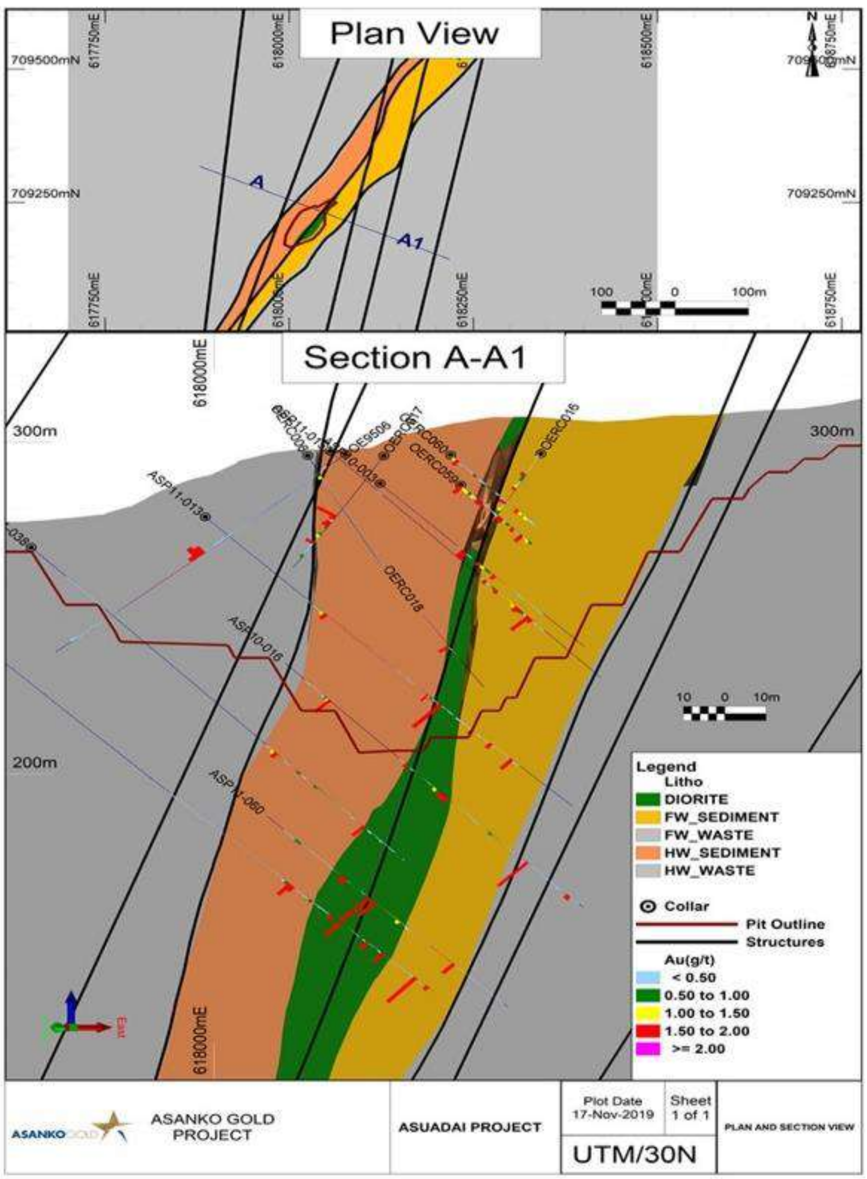


Figure 7-28 Asuadai Plan View and Cross-section Through Pit Showing Geology

7.4.6 Adubiaso

The Adubiaso geology comprises a sub-vertical stratigraphy of interbedded greywacke and phyllite, with three sub-vertical granite (porphyry) dykes obliquely cross-cutting the stratigraphy. A steep dipping (65° E) quartz vein system cuts across Birimian metasedimentary rocks, which dip steeply at 75° to the west. The vein system appears to be related to a NE fracture system (distinct from the Nkran structure) along the contact zone between dominantly phyllitic units on the east and coarser greywackes on the west, which host most of the gold-bearing veins. The central part of the vein system is 15 m to 20 m wide, but it tapers to about 10 m at both ends; the vein system has a strike length of about 700 m although the main area of economic significance is the central 300 m of the zone.

As at Nkran, narrow granitoids run generally parallel to the Adubiaso ore body in the pit area, but these are unmineralized. It is also noteworthy that the gold mineralization is restricted to the quartz veins and the metasedimentary host rocks are essentially barren, whereas at Nkran the gold values extend well into the host rocks.

The geology at the main Adubiaso deposit is illustrated in plan view and cross-section in Figure 7-29.

The Adubiaso Extension (or North) deposit is located to the NE of the main Adubiaso deposit, separated by the broad River Adubia drainage line. The deposit lies on the structure which hosts the Abore deposit known as the Abore shear.

The gold mineralization at Adubiaso occurs along the main NE to SW striking shear vein system in sub-vertically interbedded greywackes and phyllites intruded by later felsic intrusive units. Subtle jogs in the felsic intrusive units give rise to higher grade ore shoots. The ore body plunges shallowly to the NE at 20° parallel to the intersection of ENE dipping veins with the main strike direction.

Mineralization at Adubiaso is split into two phases:

1. Ductile, shear-hosted mineralization, within the NNE striking, steeply west-dipping Nkran Shear Corridor. This zone measures approximately 25 m in width in the central area, thinning to approximately 6 m at the northern and southern ends of the pit
2. Cross-cutting, NW to NNW striking, moderately east-dipping brittle quartz-carbonate vein hosted mineralization. This mineralization cross-cuts the shear zone and porphyry zones, and postdates the early phase of mineralization, are located in the hanging wall and footwall to the central mineralized zone. These structures appear to be spaced 35 m to 60 m vertically.

The deposit extends for some 1,000 m along strike and 180 m depth. The mineralized zones are typically 1 m to 4 m wide, but may occasionally reach up to 20 m. The gold mineralization occurs as free gold and is associated with the NE plunging quartz veins, along the intersection of the metasedimentary units and sheared porphyries.

The mineralized vein set strikes NNW to NNE and dips towards the east, cross-cuts the regional NE striking foliation, and is variably deformed near the shear zone.

A subtle jog in the strike of the porphyries and carbonaceous schist correlates with ore zone terminations. The ore shoots plunge shallowly to the north, parallel to the intersection of the ENE dipping veins with the sub-vertical north to south striking shear zone, and sub-parallel stretching lineation. The ore body occurs parallel to the strike inflection, which would be parallel to the north plunging stretching lineation.

The mineralization shows an overall north-south trend and a broadly anastomosing character. The undulations in the grade outlines are considered to correlate with interpreted NE to SW striking shears that appear to dextrally offset the lithology and mineralization to differing degrees. The overall movement is on a metre to tens of metre scale, with small offsets noted in the geological modelling.

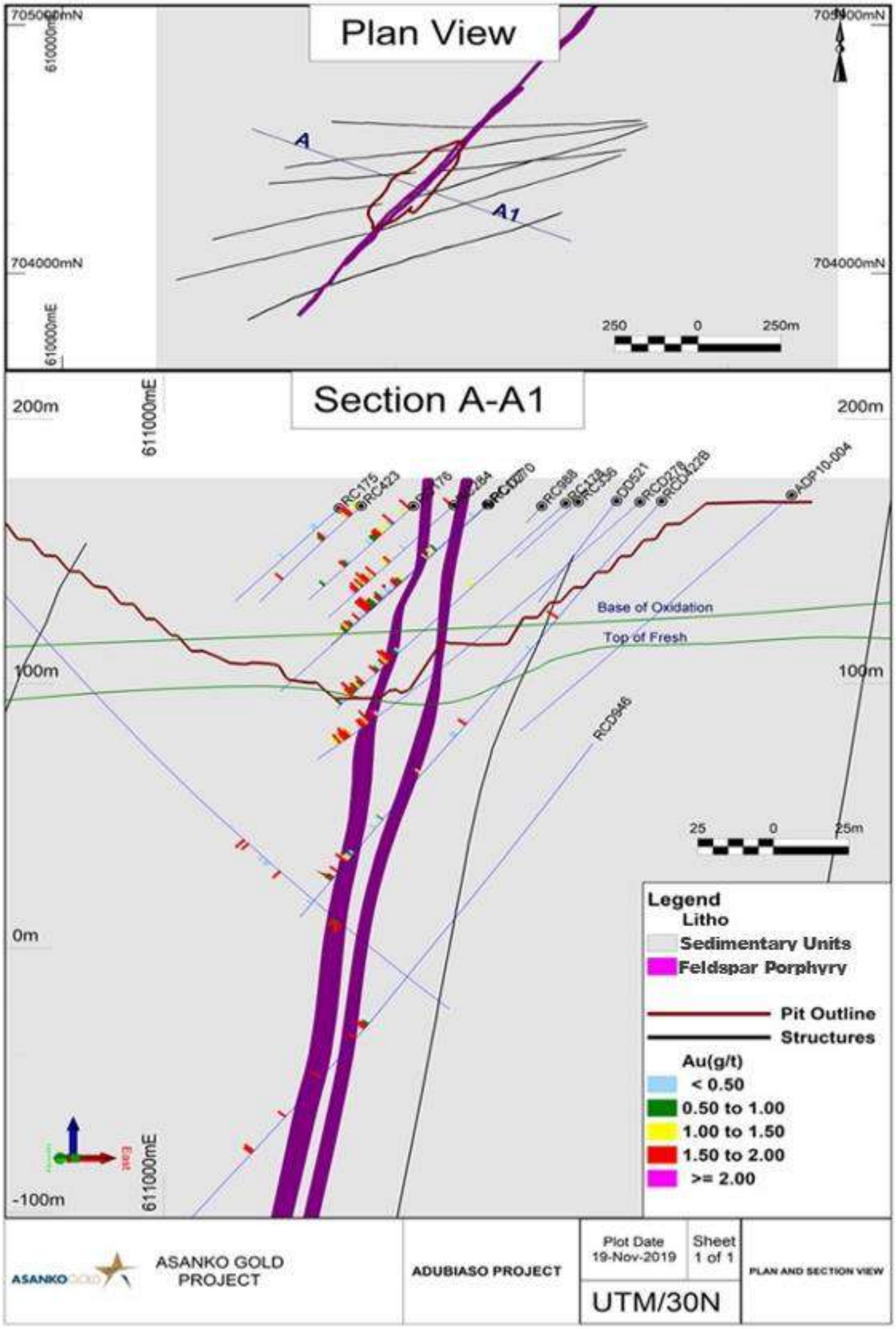


Figure 7-29 Adubiaso Plan View and Cross-section Through Pit Showing Geology

7.4.7 Miradani North

The Miradani North deposit was mined between 1996 and 2016 by previous operators. The pit is 250 m long by about 120 m wide with a depth of about 60 m. Most of the oxide ore is depleted but the fresh rock remains untouched.

The deposit is located on the Datano Shear zone which is the first from the east of five major fertile shear zones across the Asankrangwa belt. This shear zone is known to traverse the Fromenda area to the south and Datano to the north where there are several active prospects for gold. The deposit is 8 km away from the Nkran processing plant and 3 km south of the Midras South prospect.

The geology of Miradani North deposit is akin to the Nkran deposit in several ways. It is located in a dilational jog at the triple junction of NNE-SSW trending regional structures and East-west (080) structures which are underlain by cryptic basement structures.

The stratigraphy is comprised of wackes and intermittent alternating units of sandstones, siltstones, and graphitic shales which are intruded by felsic porphyry. The intrusive unit is about 200 m long, plunges to the south and up to 100m wide at the middle where it was faulted and rotated by a sinistral movement causing shortening and thickening (see Figure 7-30).

The gold mineralization at Miradani North occurs as free gold in association with hydrothermal alteration of carbonate-sericite-arsenopyrite-chlorite-pyrite. The mineralization occurs in veins that at the sandstone /granitic porphyry contact or in the granite where the veins occur either as stockwork or spiderwebs of 1-3 cm long veinlets.

The overall mineralization is controlled by a westward dipping shoot that plunges to the north. The mineralization is controlled by the shape of the intrusive unit and has about 100 m thickness, 250 m strike length, and is continuous at depth with improved grade (see Figure 7-31).

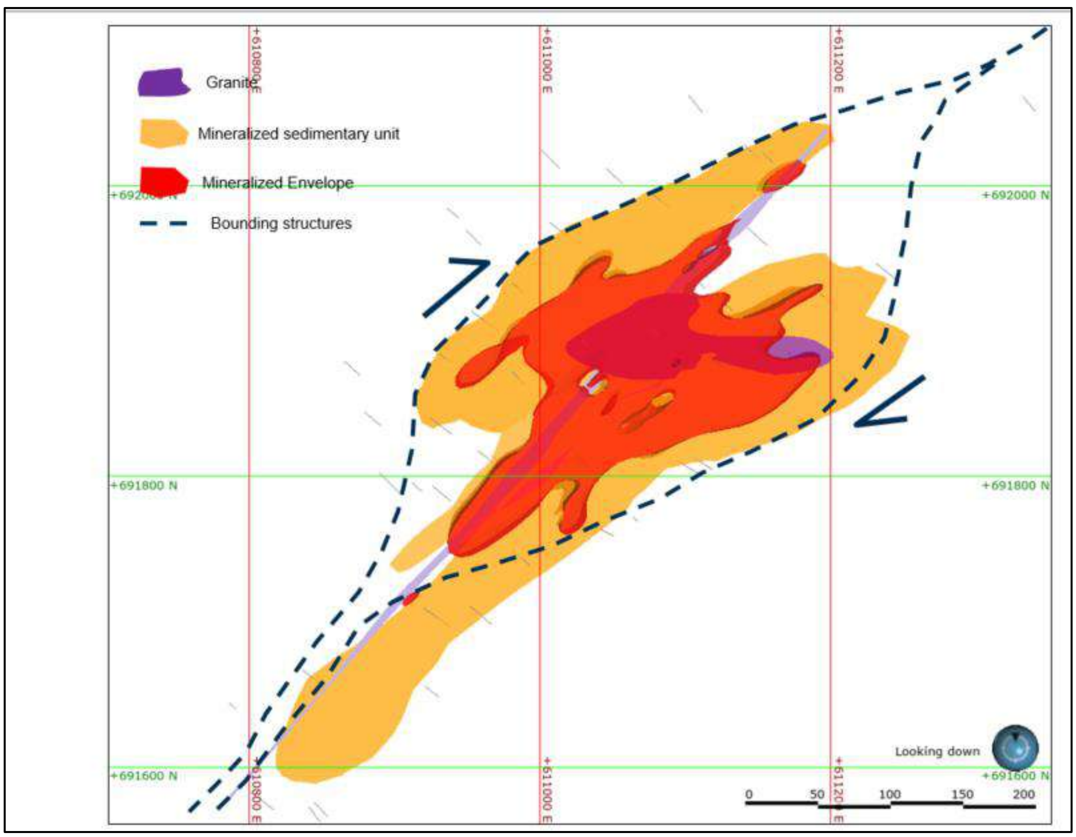


Figure 7-30 Miradani North Plan View Through Pit Showing Geology

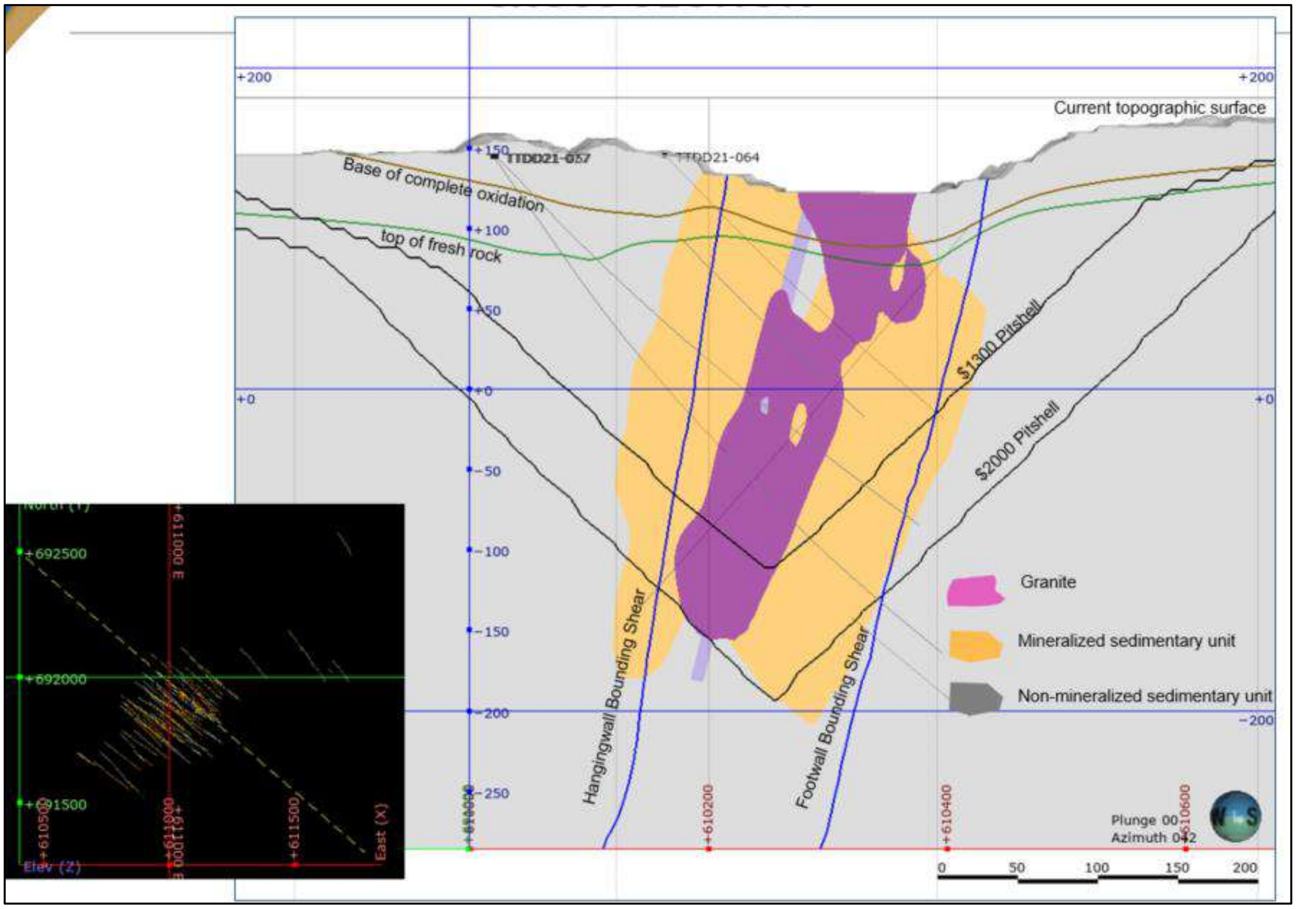


Figure 7-31 Miradani North Plan View and Cross Section Through Pit Showing Geology

7.4.8 Dynamite Hill

The Dynamite Hill deposit is located on the Nkran shear trend about 7 km north of the Nkran pit and 4 km north of the Akwasiso pit where it offsets a regional north-south mafic dyke and a localized east-west cross-cutting structure. The area is underlain by fine to medium-grained greywackes (intermittent strong alterations) intercalated with argillites (phyllites), and intrusions of altered felsic rock (feldspar quartz porphyry/granitoid), quartz veins, and stockworks. The initial depth of oxidation was between 20 to 50 m below the surface on rugged terrain but a portion of the oxidized rock has been mined out. The deposit was mined in 2018 from an RL of about 330 m to 180 m.

Foliations are mostly parallel to beddings following NE-SW trends and sub-vertically dipping, biased towards the north-west. Local signatures indicate folding of the units with the mineralization localized along the axis of a recumbent fold which is intruded by the feldspar-quartz porphyry plunging steeply to the north. Figure 7-32 and Figure 7-33 are plans and sectional views respectively of the Dynamite Hill deposit showing the US$1300/oz Au and US$1600/oz Au pit shells as well as the mineralized zones and the felsic porphyry intrusion.

Gold mineralization at Dynamite Hill is mostly associated with quartz stockwork hosted within the northwest trending, steeply dipping orebody of strongly altered (chloritic, sericitic, and silicified) wackes, and at the contact between felsic units and foliated meta-sedimentary rocks. Sulphide mineralization, mostly pyrites grading from fine to coarse crystals are present. The defined gold mineralized zone is about 40-50 m in true width and strikes NNE-SSW traced to a depth of about 250 m and still open. The mineralization plunges steeply to the north. Recent drilling does not support continuity to the north, but the mineralization is open to the south but trending progressively weaker. The mined-out area covers a strike length of 250-300 m but mineralization can be traced for 600 m along strike.

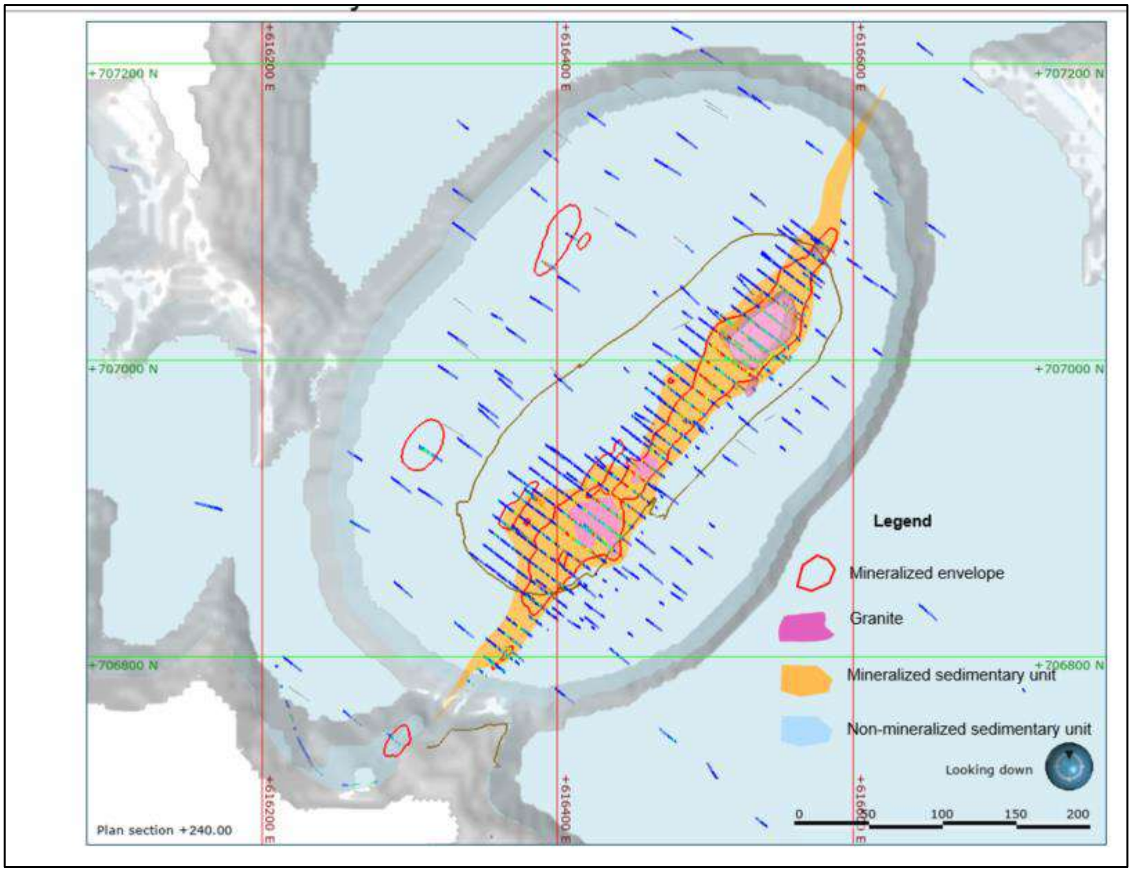


Figure 7-32 Dynamite Hill Plan View Through the Pit Showing Geology

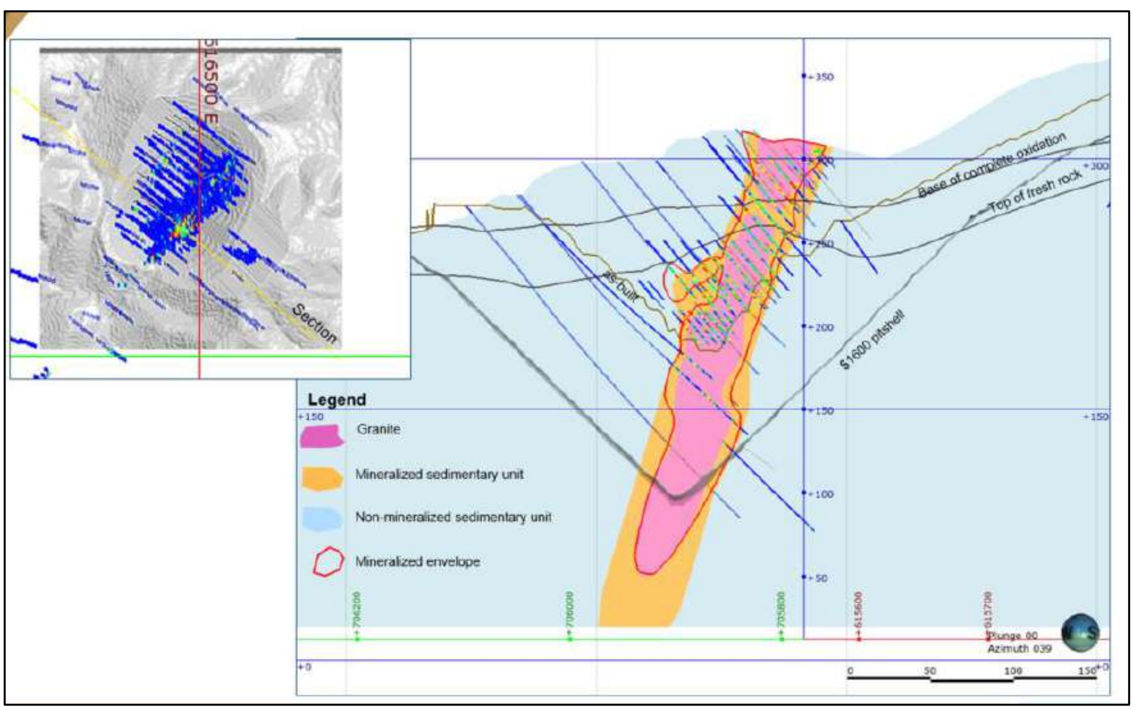


Figure 7-33 Dynamite Hill Cross-section Through the Pit Showing Geology

8 DEPOSIT TYPES

Two broad styles of gold deposits are present in southwest Ghana:

- Structurally controlled lode or orogenic gold deposits
- Paleoplacer disseminated gold deposits in Tarkwaian conglomerates.

The primary controls on mineralization in the Asankrangwa Belt are structural in origin. Certain sandstone units within the Birimian metasedimentary package provided favourable rheological conditions that optimized gold deposition often close to major lithological contacts with either Birimian metavolcanic rocks, or Tarkwaian metasedimentary rocks (Griffis et al, 2002). The deposit type targeted by the AGM is this structurally controlled mesothermal quartz vein style mineralization (orogenic gold type deposits). This is the most important type of gold occurrence in West Africa and is commonly referred to as the Ashanti-type. Milesi et al. (1992) recognized that mesothermal quartz vein style deposits are largely confined to tectonic corridors that are often over 50 km long and up to several kilometres wide and usually display complex, multi-phase structural features, which control the mineralization.

There are at least two separate gold mineralising events that are linked to the structural evolution of the area. Mineralization is linked to:

- Early isoclinal folding, shearing and/or duplexing of stratigraphy controlling the location of deformation zones and fluid flow
- A late approximate east-west compressional event that generated shallow dipping to flat orientated conjugate vein sets that crosscut the earlier rock fabric and gold mineralization.

This brittle style deformation postdates the emplacement of granitic intrusive units into the core of the existing deformed and sheared sedimentary rocks. Orogenic gold deposits formed between 2.2 and 2.0 Ga, intrusion-related (and skarn) between 2.2 and 2.1 Ga, and paleoplacer types between 2.06 and 1.8 Ga.

Gold mineralization is associated with major NE striking, 5 m to 40 m wide graphite-chlorite-sericite bearing fault zones. In particular, gold mineralization is developed where the NE fault zones intersect major ENE striking fault zones, and especially where they are recognized to have influenced granite emplacement, alteration and gold geochemical trends.

Left stepping flexures (10 km to 30 km scale) in the NE striking fault zones (which produce more northerly striking fault sections), are important for the localization of gold mineralization. Other local complexities in stratigraphy and fault geometry, associated with major NE striking faults, are also important for example, folds in stratigraphy that may produce saddle reef style mineralization, or fault duplexes.

The most common host rock is usually fine-grained metasedimentary units, often in close proximity to graphitic, siliceous, or manganiferous chemical sediments. However, in some areas, mafic volcanic rocks and belt intrusions are also known to host significant gold occurrences. Refractory type deposits feature early-stage disseminated sulphides in which pyrite and arsenopyrite host important amounts of gold overprinted by extensive late stage quartz veining in which visible gold is fairly common and accessory polymetallic sulphides are frequently observed. This type includes important lode/vein deposits in Ghana such as at the Obotan and Esaase area. A second non-refractory style of gold mineralization occurs in which gold is not hosted within sulphide minerals either in early, or late stage mineralization. These deposit types have lower sulphide content in general and often lack the needle-like arsenopyrite that is common in the refractory type deposits.

The Asanko Gold deposits demonstrate a late (second) phase of gold mineralization hosted in granitoids (Nkran basin type granite), emplaced in regional shear corridors. The deposits are situated within the Birimian metasedimentary units, but the granitoid intrusions and mineralization both occur at contacts between greywacke and carbonaceous phyllite units. The deposits are dominated by D2 regional reverse faulting gold, and only contain quartz vein-hosted free-milling gold lodes.

The deposit types in the AGM area are sufficiently well understood to support the exploration programs and geological models forming the basis of the Mineral Resource estimates.

9 EXPLORATION

9.1 Introduction

Systematic exploration at the Asanko Gold Mine concessions include regional generative and near mine programs, targeting new gold deposits as well as further delineation of Mineral Resources. Regional prospecting work was initiated in 2014 in collaboration with Corporate Geoscience Group (CGSG), and advanced drilling programs undertaken thereafter from early 2015. Follow-up to this work since 2017 includes:

- Reconnaissance mapping and sampling in of areas of exposure
- 3,000-line kilometre heli-borne versatile time-domain electromagnetic surveying (VTEM) survey infilling previous gaps in coverage
- Updated regional geological interpretation based on the interpretation of the VTEM survey
- Gradient array electrical geophysics survey over Esaase
- Discovery and drilling of the Miradani North deposit
- RC, RCD and DDH drilling to Indicated Mineral Resource classification on the Miradani North and Abore targets
- Resource expansion of the Dynamite Hill and Abore deposits through exploration drilling

Work completed under Galiano ownership (refers to post 2007 for Esaase concession, and post 2014 for all other concessions) is described in the following sections.

9.2 Grids and Surveys

All survey grid location information is in WGS 84, Zone 30N Universal Transverse Mercator (UTM) coordinates.

9.3 Geological Mapping

The broad framework of geological understanding on the AGM licences comes from geophysical interpretations completed in 2016 (Figure 9-1). This work has been built on through geological mapping as well as drilling and exposures at the various open pits. Geological mapping on the Asankrangwa Belt is hampered by a paucity of exposed basement rock, with deep weathering and laterite/alluvial cover making it more challenging. Often it is exposures created by artisanal mining workings that provides the most informative outcrop.

Field mapping has been undertaken at the target properties by AGGL geologists. Outcrop and visible features have been mapped and locations identified using handheld GPS. A targeted license-wide program of mapping and sampling was conducted in 2021, focusing on mineralized areas exposed by artisanal miners. This work was beneficial in understanding structural controls on mineralization and targeting of several prospective areas for follow-up reconnaissance-style RC drilling.

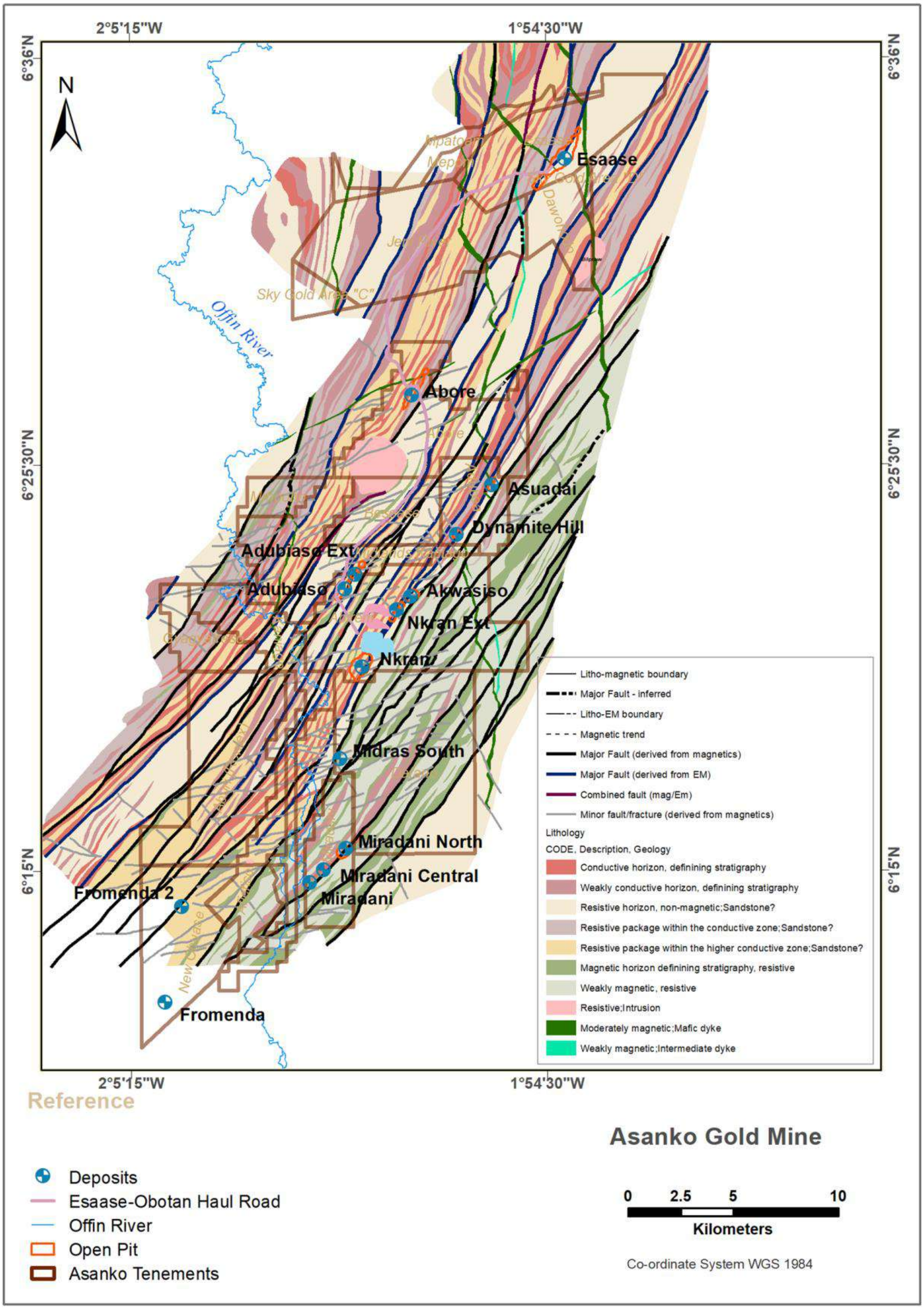


Figure 9-1 Regional Geological Interpretation from VTEM Survey

Source: Asanko Gold Mine, 2021

9.4 Geochemical Sampling

9.4.1 Soil Geochemical Sampling

Multiple soil geochemical surveys have been undertaken on the AGM licences by various explorers. Since 2017, a total of 1,246 surface geochemical samples (grab, soil, stream sediment) have been taken by AGGL geologists across the greater AGM licences with the focus on generation of greenfield targets. Sample media and year of sampling is detailed in Table 9-1 below.

Table 9-1 Summary of Surface Samples Taken by AGM Since 2017

Year	Channel	Grab	Soil	Total
2017		86	740	826
2018	2	11		13
2019		37		37
2021	31	331	8	370
Total	**33**	**465**	**748**	**1,246**

Sampling points are generated using Micromine™ or ArcGIS™ software and downloaded into a handheld GPS. The sampling points are pegged out in the field. Soil geochemical sampling is not conducted in formal settlements, roads, cemeteries and other culturally sensitive areas.

The sampling grid or sampling spacing may vary from one place to another and is determined by factors that control mineralization and the level of information required. Sampling programs are typically undertaken on 400 m x 50 m spacing, and the sampling line’s azimuth is determined by the orientation of the structure suspected to be associated with mineralization. In some cases, the sample spacing is reduced to 200 m x 25 m or 100 m x 25 m if broad spaced sampling suggests the need for tighter data density. The depth at which geochemical samples are collected is between 20-50 cm or more precisely on the B-horizon.

Sample sites are located with GPS receiver and entered into database/GIS platform. During sampling, organic material is avoided. The soil fraction is sampled and analysed (generally either bulk soil or a particular size fraction). The regolith landform setting is recorded and range in clast size is estimated. The proportion of transported and in situ lag (based on degree of clast rounding, size of clasts, composition of clasts) is estimated. Lag is swept up with plastic dustpan and brush over about a 5 m diameter area. A sample of approximately 2.5 kg is sufficient. Coarse pebbles and organic material (greater than 1 or 2 cm) are sieved and picked out on a plastic sheet. Figure 9-2 and Figure 9-3 illustrate on a regional level the location of the sampling points.

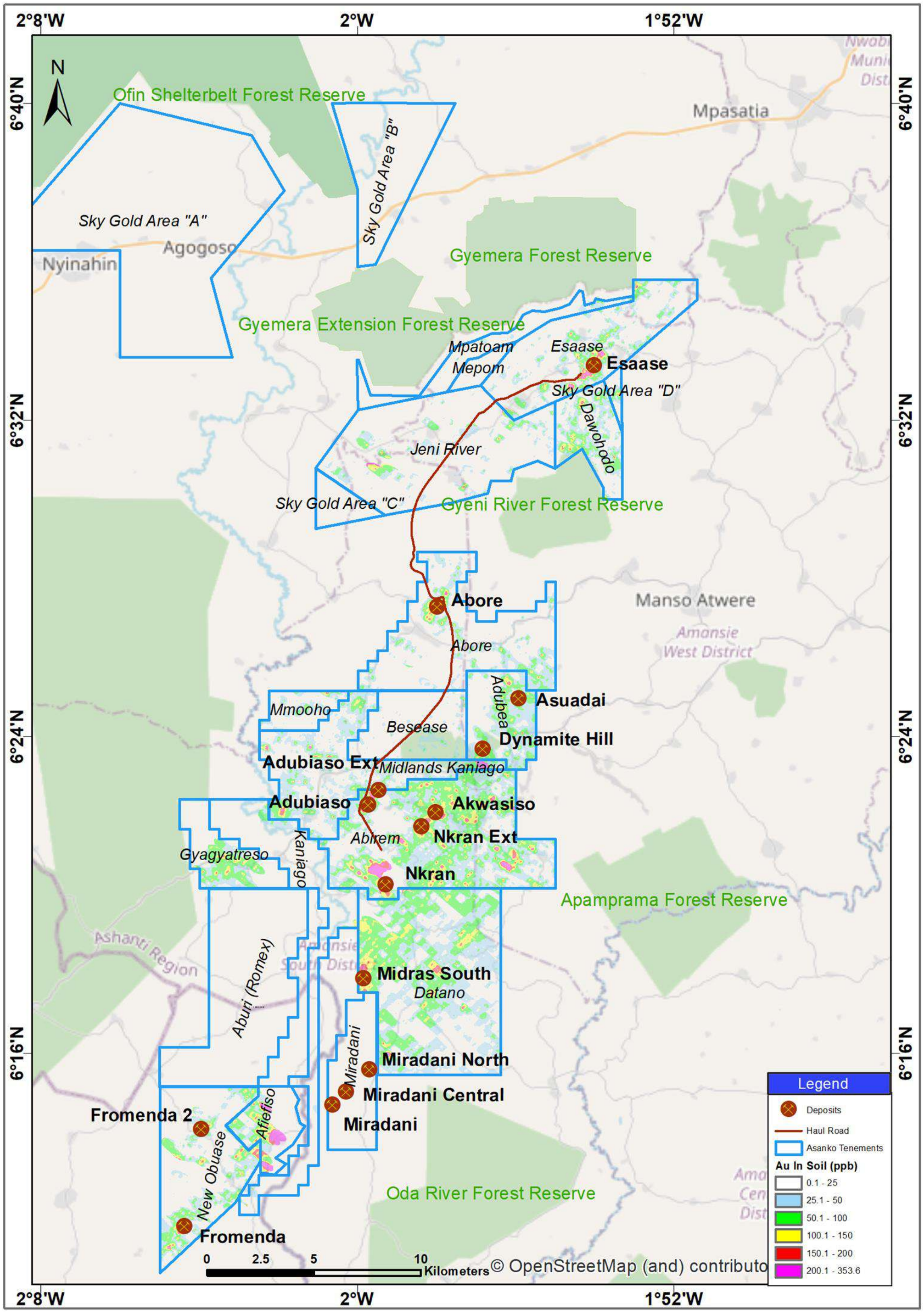


Figure 9-2 Plan Showing Gold-in-Soil Anomalies

Source: Asanko Gold Mine, 2021

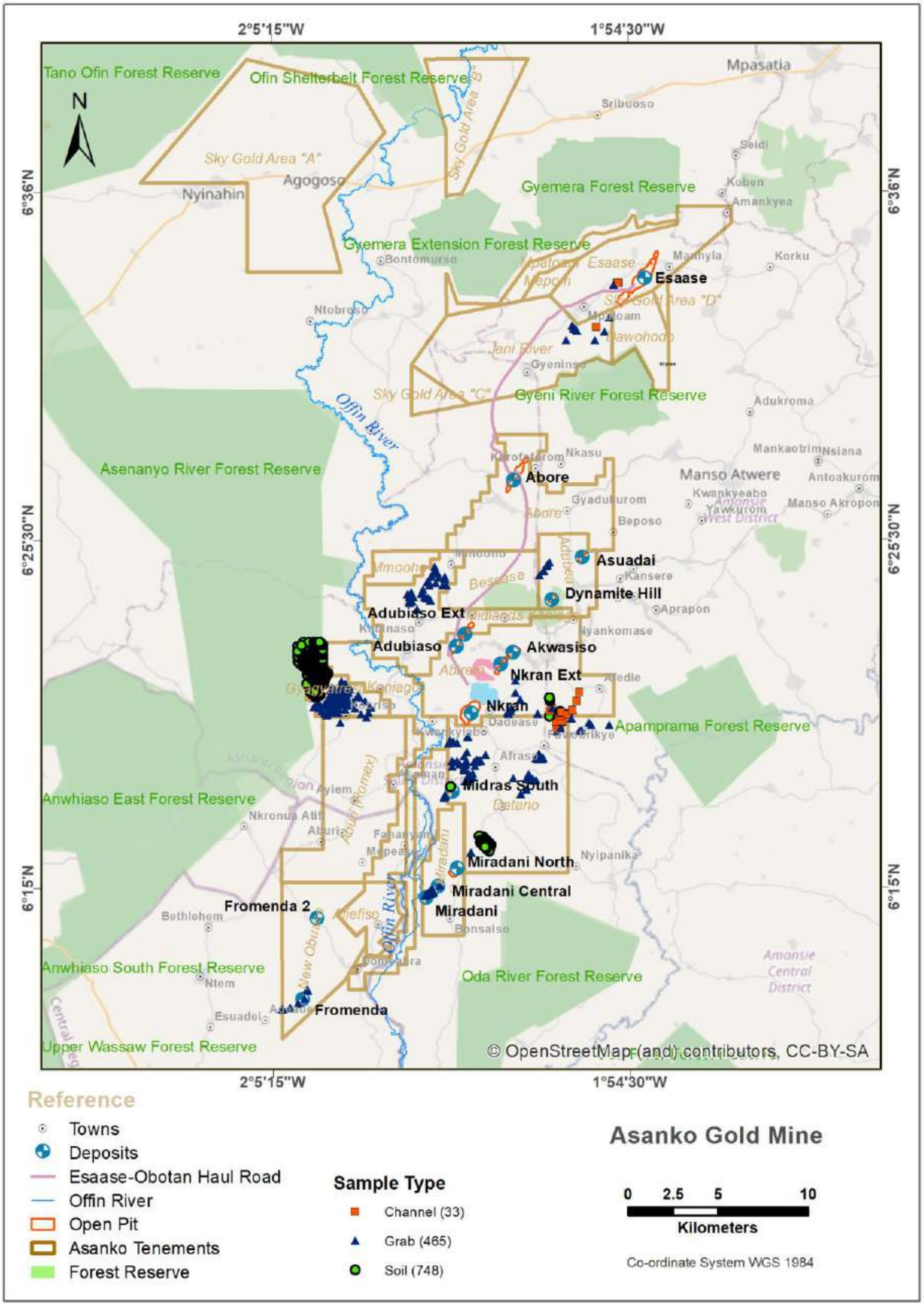


Figure 9-3 Surface Geochemistry Sampling Locations (2017 to 2021)

Source: Asanko Gold Mine, 2021

9.4.2 Trenching

Given the terrane's deep weathering and generally poor exposure, trenching is often the first tool used to assist with mapping areas of mineralization to collect quality geological information or reliable geochemical samples at surface. This information is not used in Mineral Resource estimation, but rather as a guide to drill targeting.

Trenching is undertaken when deemed appropriate to get preliminary information as to the width and structural features of possible exploration targets. In general topsoil horizons are too thick to use this method extensively.

Planned and approved programs are sited with a GPS by a geologist or technician, and after end points of proposed trenches have been clearly marked, must be ground-truthed by a geologist. The trenches are surveyed by the mine surveyor after or during the course of geological mapping and sampling of the trench. The trenches are excavated by excavator or manual labour. All open trenches are barricaded with caution or flagging tapes.

The saprolite exposure and regolith profile in the trench are mapped and the thicknesses measured with reference to the profile line. Rock type, lithological boundaries, structural measurements, visible mineralization, sample intervals and assay are recorded directly to DataShed™ using in a field computer or on a field data collection sample sheet and later entered into DataShed™.

Trench sampling is carried out by even chipping of the sample using a geological hammer or chisel along the sidewalls of the trench with a collecting cut PVC pipe. The sample is homogenized by rolling it once or twice in a canvas tarpaulin before collecting a split for assay. 2.5 kg of the homogenized sample is collected. The samples are placed in a clean labelled sample bag with the sample number and sample ticket number folded and stapled into a fold at the top of the bag. At the core yard, the labelled samples are sorted and re-checked.

QAQC samples are inserted as per the QAQC protocol (1-3% of total samples for blanks and field duplicates, and 1-7% for standards, or 2 to 2.5 per 20 samples). The samples are then placed in a big white bag and labelled with the project name, sample interval for each big white bag and the number of samples in it. The sample sequence numbers must be written on the big sample bags. Once samples have been bagged, they are ready for dispatch and are not reopened until they reach the laboratory. The analytical request sheet (sample submission sheet) is completed, signed and dated by the project geologist prior to dispatch. The project geologist keeps copies of the analytical request form. An Asanko Gold item removal form is completed by the project geologist and approved by the head of department (HOD) and the security manager before samples are allowed to be sent out of site.

Sampled intervals in the trench are photographed. The hole ID, sample interval and sample ID are written clearly on a white board and displayed within the sample interval before photographing. An example of a graphical trench map from the recent Jeni River trench program is shown in Figure 9-4 below. After data collection, all trenches are backfilled to allow vegetation regeneration.

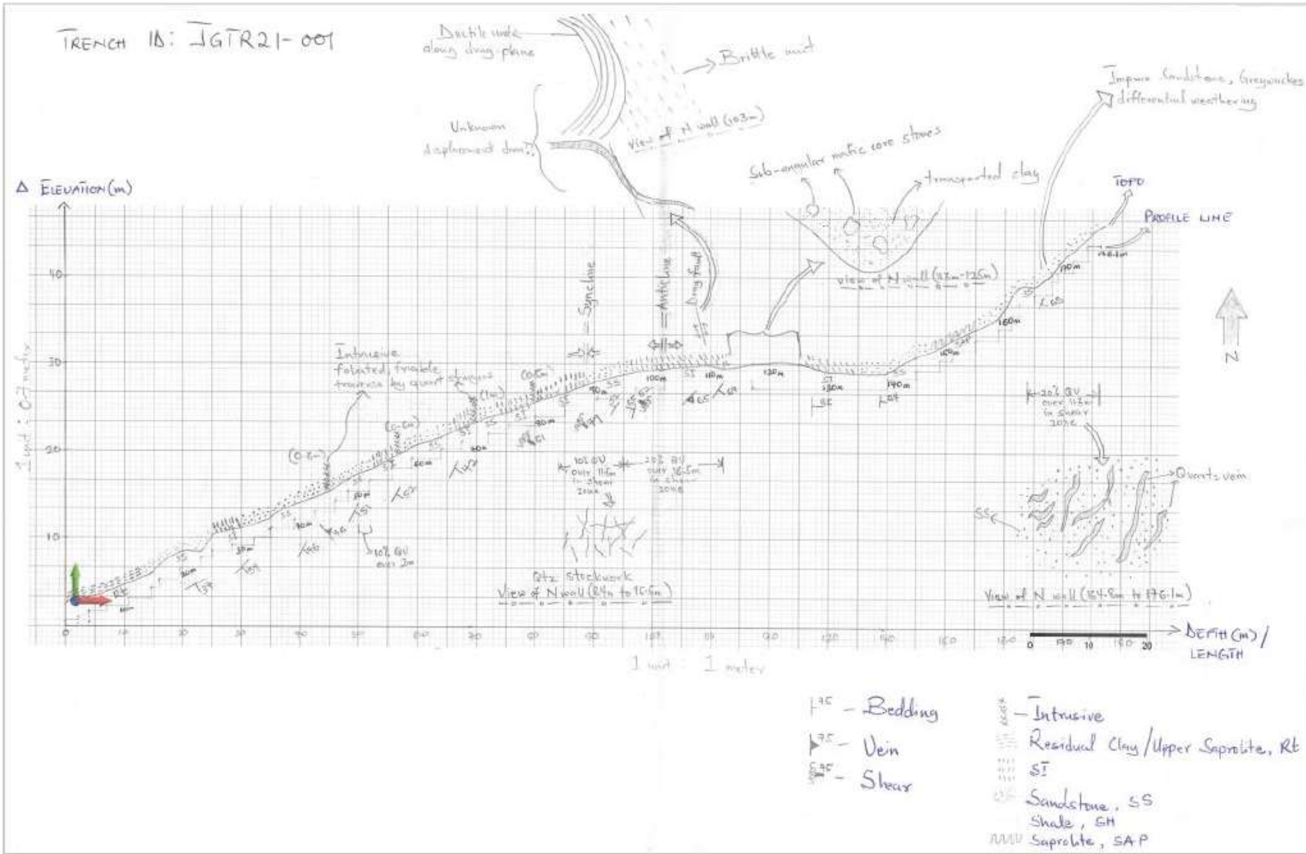


Figure 9-4 Trench Map from Trench JGTR21-001, Jeni River Prospect

9.5 Geophysical Surveys

Geophysical surveys over the property have included regional aeromagnetic imaging of the Ashanti Belt and adjacent Kumasi Basin by the Ghana Geological Survey, as well as IP ground geophysical surveying and airborne VTEM and magnetic survey centred over specific targets.

Airborne geophysical surveys were commissioned by AGGL during 2015/2016 to advance the understanding of the geological and structural settings of the Asankrangwa Belt. A map of regional VTEM over the AGM license package is shown in Figure 9-5. The regional magnetic and VTEM data for the Ashanti Belt and adjacent Kumasi Basin provide a good indication of the distribution of the principal geological units occurring in the region as well as on the property.

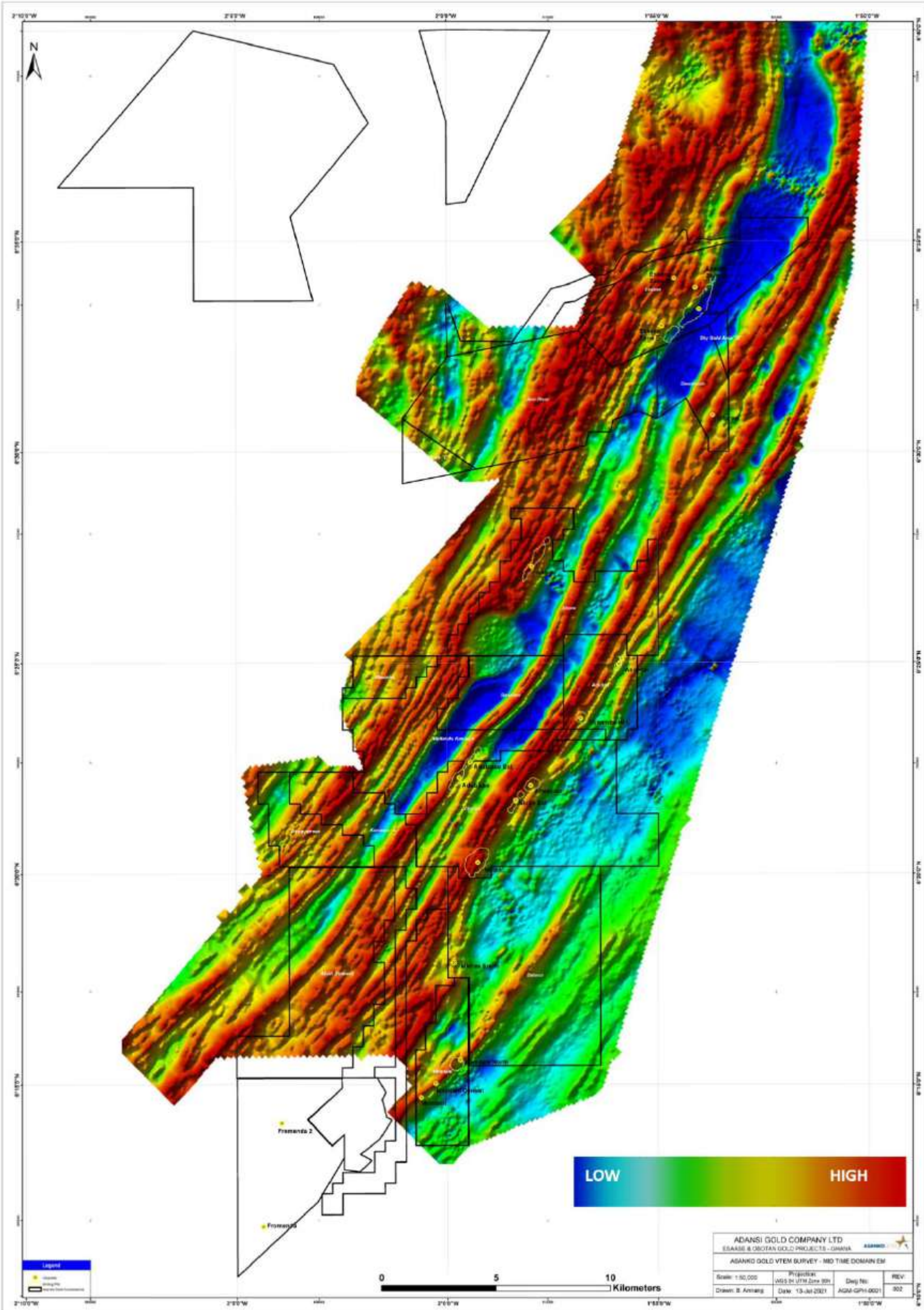


Figure 9-5 Map of Time-Domain EM Over the AGM License Package

Source: Asanko Gold Mine, 2021

A ground geophysics orientation study was initiated over the Esaase deposit in 2019 by Planetary Geophysics based in Australia. The orientation survey focused on four surveys that are known to produce useful results for the direct detection of orogenic gold deposits. Surveys completed over the Esaase deposit are as follows:

- Gradient array IP
- Pole-dipole resistivity
- HaiTEM MLEM (electromagnetic)
- Gravity.

Eleven Gradient Array blocks and six 2D Pole-dipole lines were read over the Esaase project for a total of 6,700-line metres. The Gradient Array IP survey data was particularly successful and appears to map what is interpreted to be sulphide content at depth (Figure 9-6).

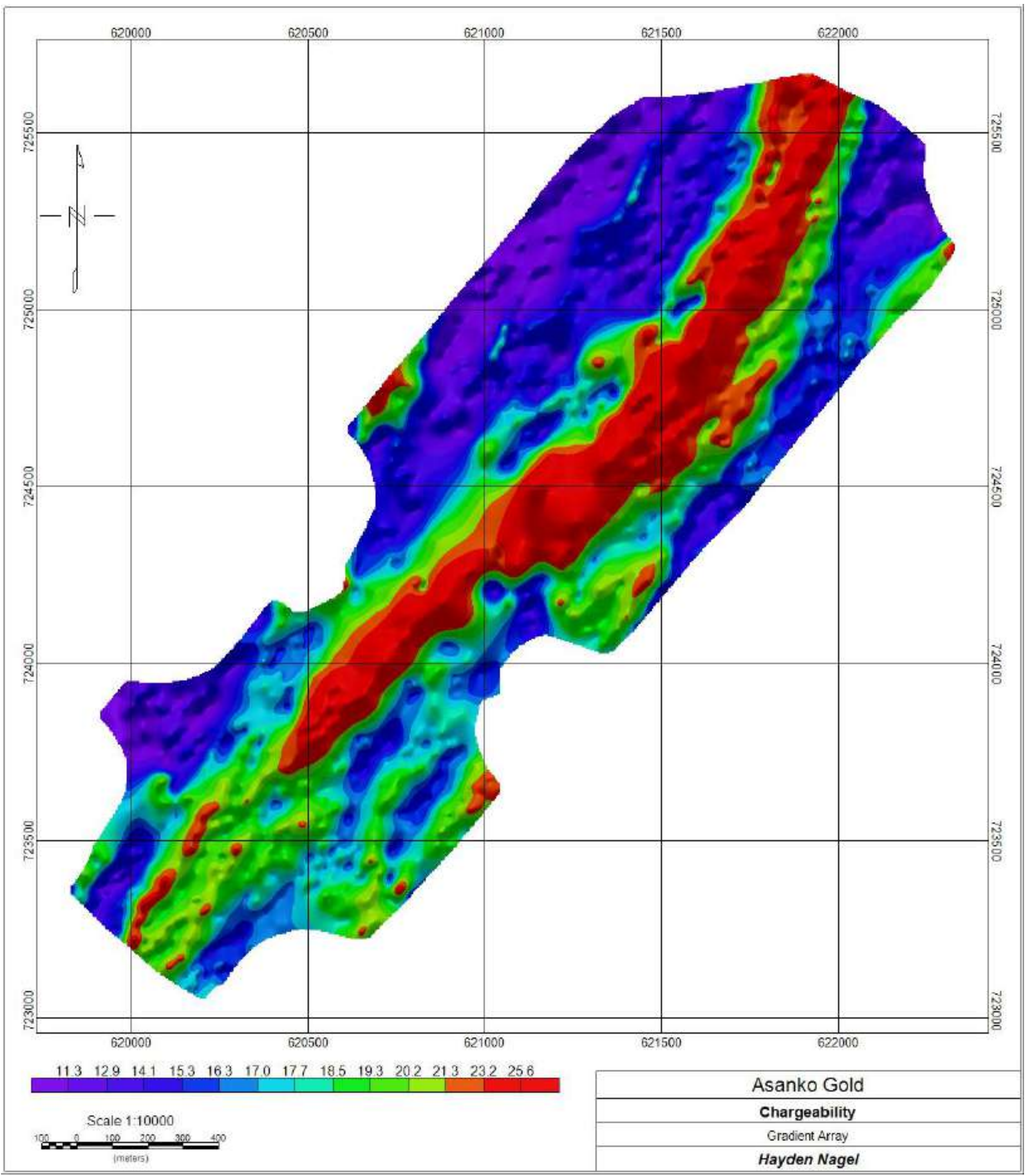


Figure 9-6 Gradient Array Survey Over the Esaase Deposit
Source: Planetary Geophysics, 2020 (units of measure, milli-seconds or 'ms')

This work was planned as a 'proof of concept' orientation survey, with the intention of completing a series of much larger gradient array and IP surveys within the Asanko license package. However, the global pandemic in 2020-2021 delayed commencement of this activity. Given the success of this Esaase survey, geophysical coverage of this type has a high likelihood of identifying other zones of high chargeability that may be a proxy for gold mineralization.

9.6 Exploration Potential

Considerable potential exists for the discovery of additional gold resources on the AGM licenses, near existing operations as well as regionally.

9.6.1 Nkran Deeps

Underground mining scenarios have long been considered at Nkran. Resolute Mining included a modest underground resource (Spiers, 2010), and AGM have reviewed the idea of underground mining at Nkran, at a conceptual level. Following completion of Cut 2 however, it was believed that insufficient resources remained at Nkran to support an underground operation. Additional deep drilling is recommended to explore for significant down dip and down plunge mineralization at Nkran.

A number of possible high grade shoot controls have been interpreted at Nkran, all plunging shallow to steeply northeast (Figure 9-7). These high-grade structures, if repeated at depth, could represent a significant step change for the AGM resource potential. Deep drilling to explore for these structures is recommended.

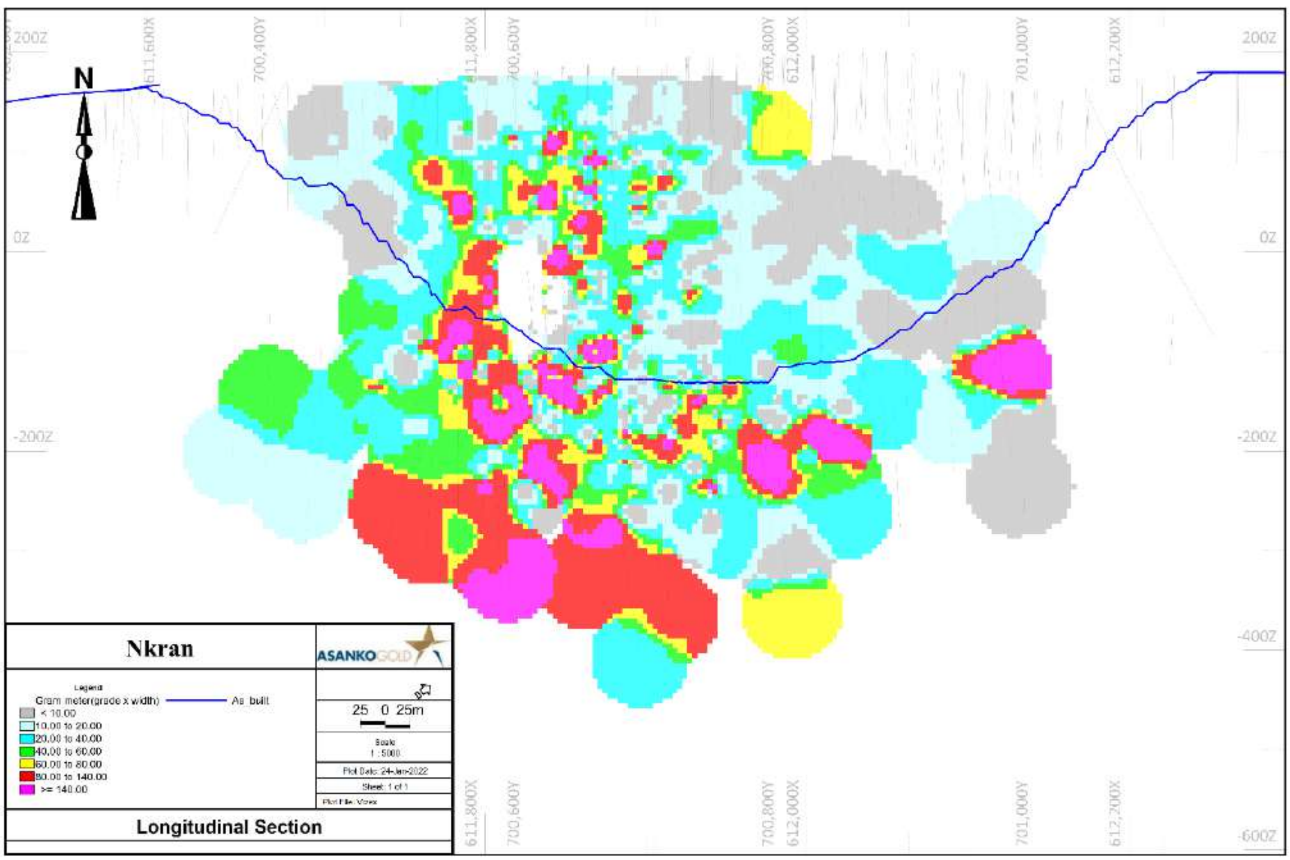


Figure 9-7 Longitudinal Section Through the Nkran Deposit Showing Multiple Shoot Trends That Hold Potential for Additional Resources

Source: Asanko Gold Mine, 2021

9.6.2 Miradani Deeps

The Miradani North deposit shows many similarities to Nkran, including a tonalite intrusive association and the existence of high-grade shoots. A well-defined steeply northeast plunging shoot is evident in longitudinal section through the deposit, as seen in Figure 9-8 below. This high grade +80 gm.m shoot remains open at depth and further drilling should be considered to explore for extensions and repetitions to this high grade.

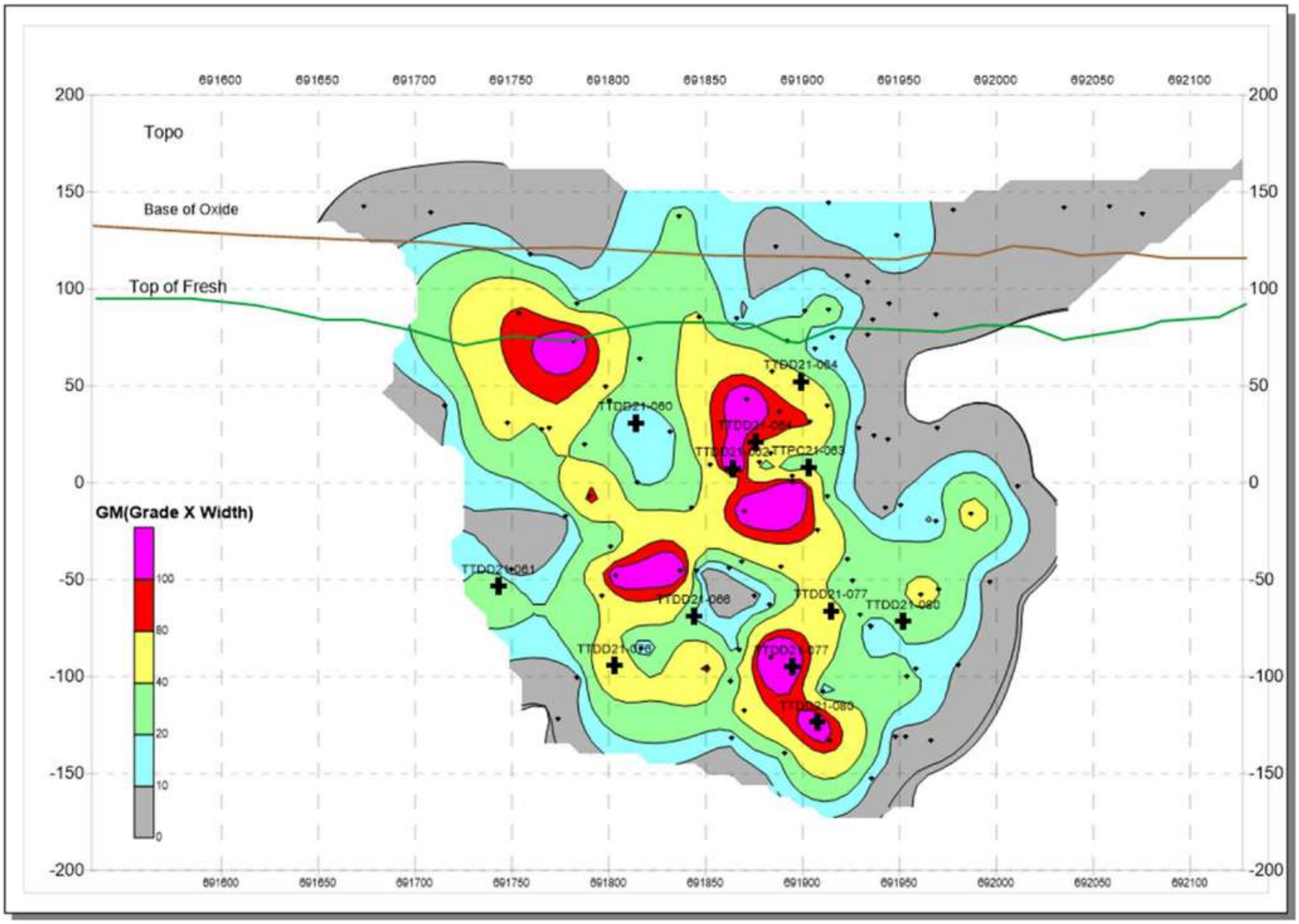


Figure 9-8 Longitudinal Section Through the Miradani North Deposit

Source: Asanko Gold Mine, 2021

9.6.3 Kaniago West

The Kaniago West prospect is located on exploration lease PL6/289 and is 5 km NW of the AGM processing plant. It was acquired as part of the Midlands Mineral Corporation property transaction in 2015. Midlands conducted an aggressive drilling campaign between 2011 to 2012, delineating gold mineralization over a 500 m strike length and a depth of 150 m, open in all directions. AGM followed up this work in 2021, intersecting broad zones of quartz breccia and veining with associated visible gold mineralization. Follow-up drilling is recommended for this prospect.

9.6.4 Midras South

Midras South is located on the Datano Mining Lease, 5 km south of the AGM's processing plant. The drill program at Midras South was designed to expand on the known mineralized systems in the area, and although only partially completed due to access issues, did provide some of the better high grade intercepts this year to date.

The Midras South prospect lies along the Takorase - Afraso shear zone, a laterally extensive structure recognized from airborne VTEM and magnetic surveys and extensively mapped on the ground. Midras South consists of 3 distinct zones of indicated mineralization, inferred to be fault offsets of the one mineralized zone.

Similar in character to Esaase and Kaniago West, indicated mineralization at Midras South is developed within a package of deformed sandstone, siltstone and phyllite. Stratigraphy and structure are both steeply dipping to the northwest as they do for most of the Asankrangwa Belt gold deposits. Indicated gold mineralization at Midras South occurs in association with quartz veining, arsenopyrite and pyrite, within a broader envelope of quartz-sericite-pyrite and carbonate alteration.

9.6.5 Amoaman

AGM acquired the Aburi lease in early 2020, known at that time as the Hawannah Mining Concession. The name was recently changed from Aburi to Amoaman to reflect the nearest community.

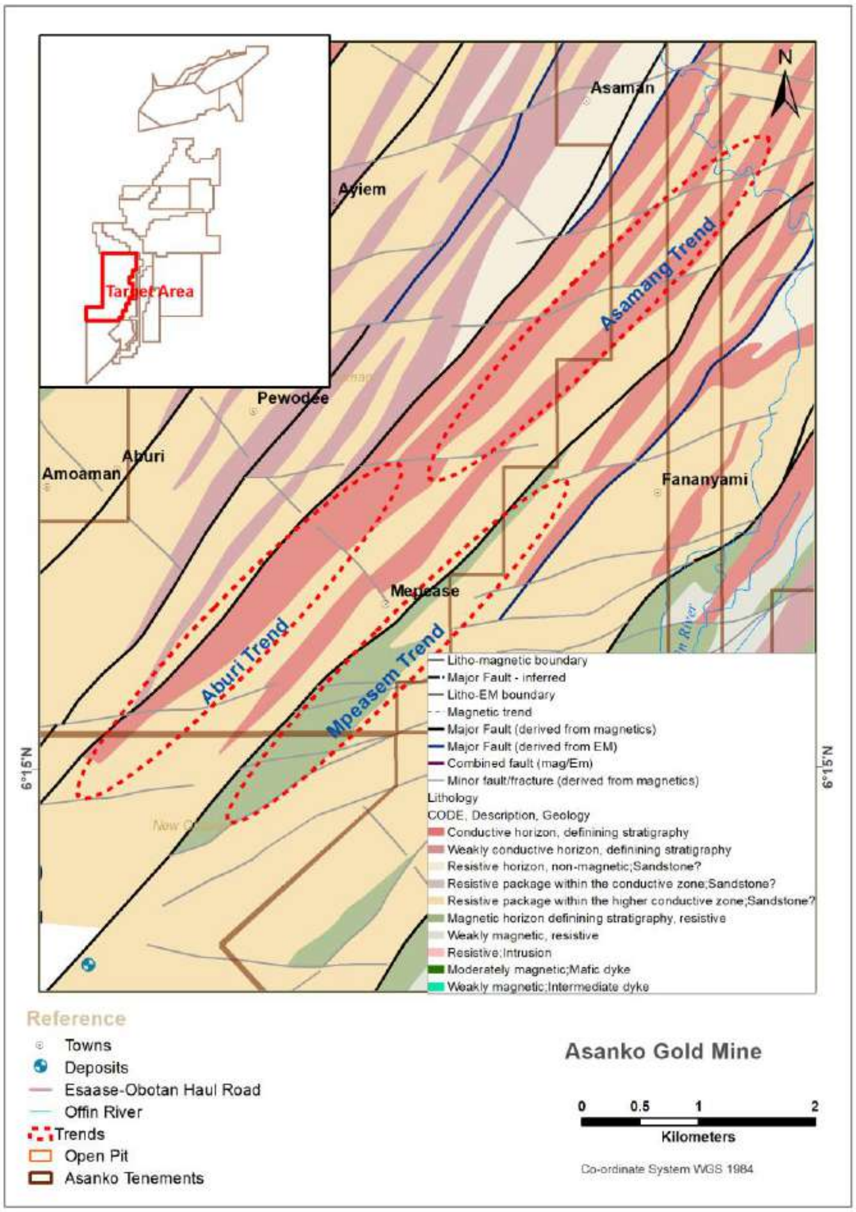


Figure 9-9 Interpreted Geology and Mineralized Trends on the Amoaman Property

Source: Asanko Gold Mine, 2021

Previous explorers Romex conducted exploration including a VTEM survey which included acquisition of a DTM, radiometrics, aeromagnetics and electromagnetic (resistivity). Romex also completed geochemical surveys including stream sediment sampling, rock chip sampling, and soil sampling. This work assisted in defining three mineralized trends, referred to as Mpeasem, Aburi and Asamang (SEMS, 2013). A phase of trenching to test various soil anomalies, and follow-up preliminary drilling was conducted with a focus on these three prospective trends. 43 diamond holes were drilled for 6,930 m, and 61 RC holes for 3,840 m. Continued exploration is recommended for this prospect.

9.6.6 Other Prospects

A number of poorly tested prospective trends recognized during earlier prospectivity analysis were followed up by AGM with mapping and sampling, and in some cases trenching in 2021. These include the Gyagatreso-Kaniago-Abore trend, the Greater Midras-Nkran-Takorase trend, the Datano-Fawotrikye trend and the Abore-Jeni River-Esaase trend. These areas were highlighted due a combination of coincident structural and soil geochemical anomalies, and in some cases topographic highs and may relate to zones of veining and silicification associated with mineralized systems. Follow-up exploration is recommended for these prospects.

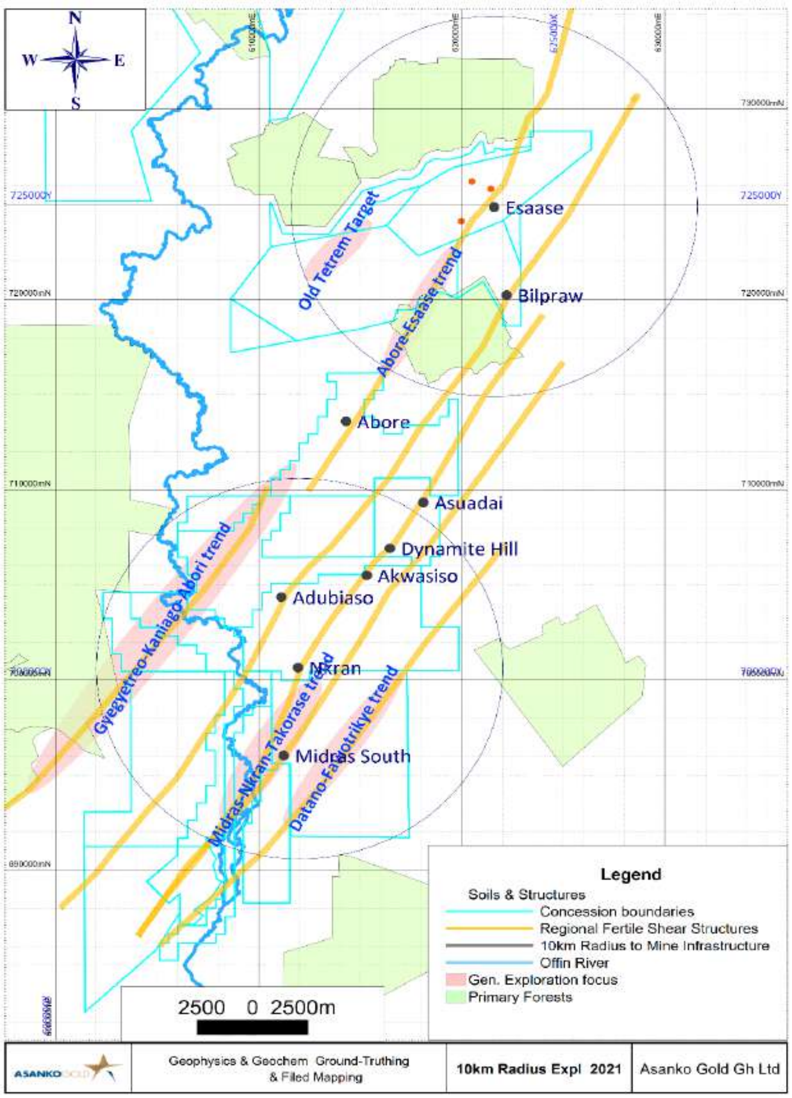


Figure 9-10 Mineralized Trends on the AGM License Package Recommended to Follow-up

Source: Asanko Gold Mine, 2021

10 DRILLING

Asanko Gold have integrated historical databases with more recent and ongoing drilling programs. Drilling completed under AGGL ownership is described in this section. Unless specified otherwise, all diagrams in this section are sourced from Asanko Gold Mine 2021.

10.1 Type and Extent of Drilling

Surface drilling at AGM included RC, DDH and RCD drilling. Drilling for Mineral Resource delineation focused on Nkran, Esaase, Miradani North, Dynamite Hill and Abore, although extensive drilling has also been undertaken at Akwasiso and Adubiaso. An overview of the historical drilling per deposit is provided in Section 6. Representative plans and sections of each deposit can be found in Chapter 7 and Chapter 14 of this Report.

To date, a combined total of 4,773 evaluation aircore (AC), DD, RC and RCD drill holes totalling 652,425 m have been drilled at the AGM deposits that are the subject of this Report, as well as additional grade control and other drill holes. Mineral Resource definition drilling at AGM mainly includes RC and DDH drilling. A summary of the drilling completed at each deposit that is the subject of this Report, on a yearly basis, is provided in Table 10-1. The table only reflects AC, DDH, RC and RCD drilling. Additional drilling work such as auger and airblast has been completed but is not used in the Mineral Resource estimation.

Table 10-1 Drilling Summary by Deposit (to February 28, 2022)

Prospect	Year	No. of Holes	Number Of Metres Drilled				
			AC	DDH	RC	RCD	Total
Aboabo	2010	58			5,522	3,354	**8,876**
	2011	19		490	242	3,918	**4,650**
Abore	2010	30		4,887			**4,887**
	2011	24		4,550			**4,550**
	2020	33			1,069	4,785	**5,854**
	2021	42		429	4,376	1,082	**5,887**
Abore North	2000	420		1,225	31,594		**32,819**
	2010	2		408			**408**
	2011	2		353			**353**
Adubiaso	1996	49			5,958		**5,958**
	1997	8			876		**876**
	1998	11			1,745		**1,745**
	2000	173		636	13,114	590	**14,339**
	2009	4		614			**614**
	2010	9		1,441			**1,441**
	2011	35		7,636			**7,636**
	2013	14			1,359		**1,359**
	2016	35			3,460		**3,460**
	2020	5			162	1,150	**1,312**
Akwasiso	1996	1		250			**250**
	1997	18		1,278	1,098		**2,376**
	1998	56		825	2,372		**3,197**
	2000	102		2,736	6,019		**8,755**
	2016	51		5,829	1,742	1,558	**9,129**

Prospect	Year	No. of Holes	Number Of Metres Drilled				
			AC	DDH	RC	RCD	Total
	2017	91		315	4,604	4,326	**9,245**
	2020	36		643	2,516	3,698	**6,857**
	2021	4			330		**330**
Akwasiso South	2018	65			4,946	225	**5,171**
Asuadai	2000	88		329	5,551		**5,880**
	2010	15		1,740			**1,740**
	2011	45		6,064			**6,064**
	2012	3		653			**653**
Esaase B Zone	2007	16		301	3,023		**3,324**
	2008	17			1,728	1,630	**3,358**
	2011	73		608	7,265	3,660	**11,533**
Esaase B1 Zone	2007	8		1,010	265		**1,275**
	2009	2				581	**581**
	2010	1				156	**156**
Esaase C Zone	2007	5		651			**651**
	2010	6			897		**897**
	2011	2			177		**177**
Esaase D Zone	2007	1		232			**232**
	2008	35			3,035	1,845	**4,880**
	2010	3			150	636	**786**
	2011	17			360	3,878	**4,238**
Dawahodo	2011	91			11,465		**11,465**
	2012	13			1,488	1,223	**2,711**
Dynamite	2013	90		408	10,446	249	**11,103**
	2014	42		2,094	4,611		**6,705**
	2016	56			5,176		**5,176**
	2021	30			1,470	4,640	**6,110**
Esaase E Zone	2008	2			251		**251**
	2009	3			351		**351**
	2011	12			1,303	802	**2,105**
Esaase	2020	32		1,370	3,370	1,373	**6,113**
	2021	18			1,184	3,027	**4,211**
	2022	2		299			**299**
Esaase Main Zone NE	2007	2		507			**507**
	2008	28			3,161	642	**3,803**
	2009	87			11,041	2,082	**13,123**
	2010	61			7,787	177	**7,964**
	2011	35		440	2,152		**2,592**
Esaase Main Zone North	2006	14		4,084			**4,084**
	2007	165		1,464	20,813	14,095	**36,373**
	2008	175		833	23,517	13,625	**37,975**
	2009	24		1,627	891	4,413	**6,931**

Prospect	Year	No. of Holes	Number Of Metres Drilled				
			AC	DDH	RC	RCD	Total
	2010	89		6,652	1,494	17,490	**25,637**
	2011	78		3,358	5,285	14,169	**22,813**
	2013	6		1,323			**1,323**
	2018	82			4,872		**4,872**
Esaase Main Zone South	2007	60		382	9,831	1,270	**11,483**
	2008	41		225	3,795	6,199	**10,218**
	2009	2		412			**412**
	2010	25		1,111	764	3,230	**5,105**
	2011	31		32	2,513	2,250	**4,795**
	2013	1		100			**100**
	2018	27			2,378		**2,378**
Miradani North	2019	12				3,380	**3,380**
	2020	46		6,273	198	3,709	**10,180**
	2021	42		5,209	2,794	1,057	**9,060**
	2022	2		351			**351**
Nkran	1995	57		4,306	985	1,286	**6,577**
	1997	59		100	3,435	1,325	**4,860**
	1998	2			190		**190**
	1999	1			100		**100**
	2000	611		32,377	20,500	3,001	**55,878**
	2010	22		9,550			**9,550**
	2011	79		34,147		944	**35,091**
	2012	443	20,677	546	800	1,976	**24,000**
	2017	11		1,700		2,237	**3,937**
	2020	72		2,693	7,205	1,143	**11,041**
	2022	19		8,313			**8,313**
Nkran Extension	1998	4			370		**370**
	2000	19			1,591		**1,591**
	2013	10			1,002		**1,002**
	2014	18			1,786		**1,786**
	2016	38			3,032		**3,032**
	2017	24		257	930	702	**1,890**
Nkran NE	2015	4			368		**368**
	2016	4			352		**352**
Sky Gold	2011	16			1,687		**1,687**
Total		**4,773**	**20,677**	**178,671**	**304,289**	**148,788**	**652,425**

Note: AC – Aircore; DDH – Diamond drill hole; RC – Reverse circulation; RCD – Reverse circulation with diamond tail. The following drilling is excluded from the above – Auger (AG), Rotary Air Blast (AB). Esaase B, B1, C, D & E zones do not form part of the declared Esaase Mineral Resources.

A property wide drill plan is shown in Figure 10-1.

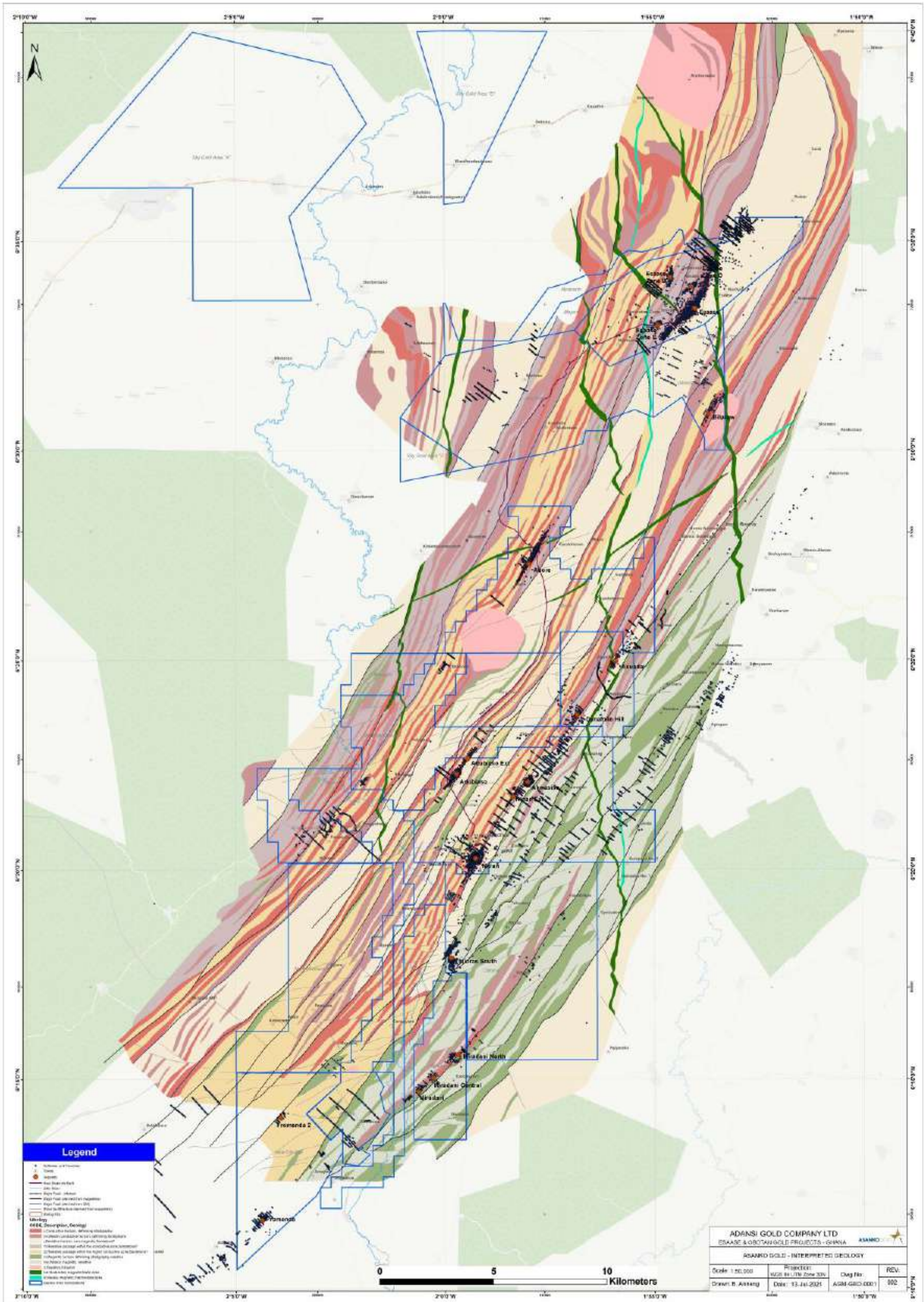


Figure 10-1 Distribution of Drilling and Trenching Across the AGM License Package, on Interpreted Geology

Plans showing the location of drill collars and drilling type per AGM deposits are provided in Figure 10-2 to Figure 10-9.

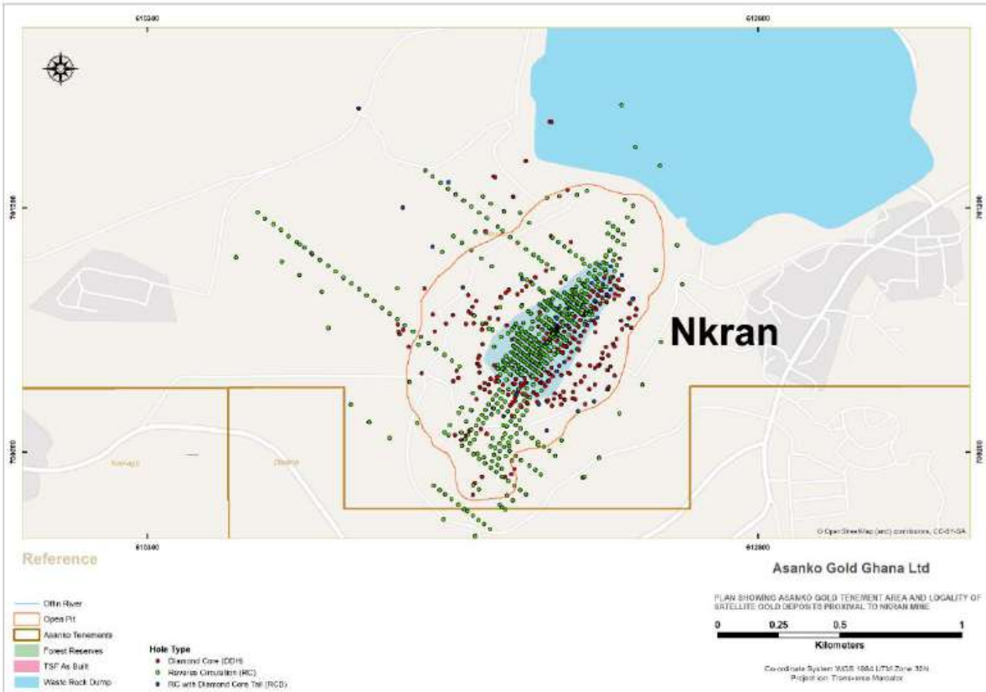


Figure 10-2 Plan Showing Distribution of Drill Hole Collars at Nkran Pit

Note: Areas in grey denote galamsey/artisanal mining disturbance areas

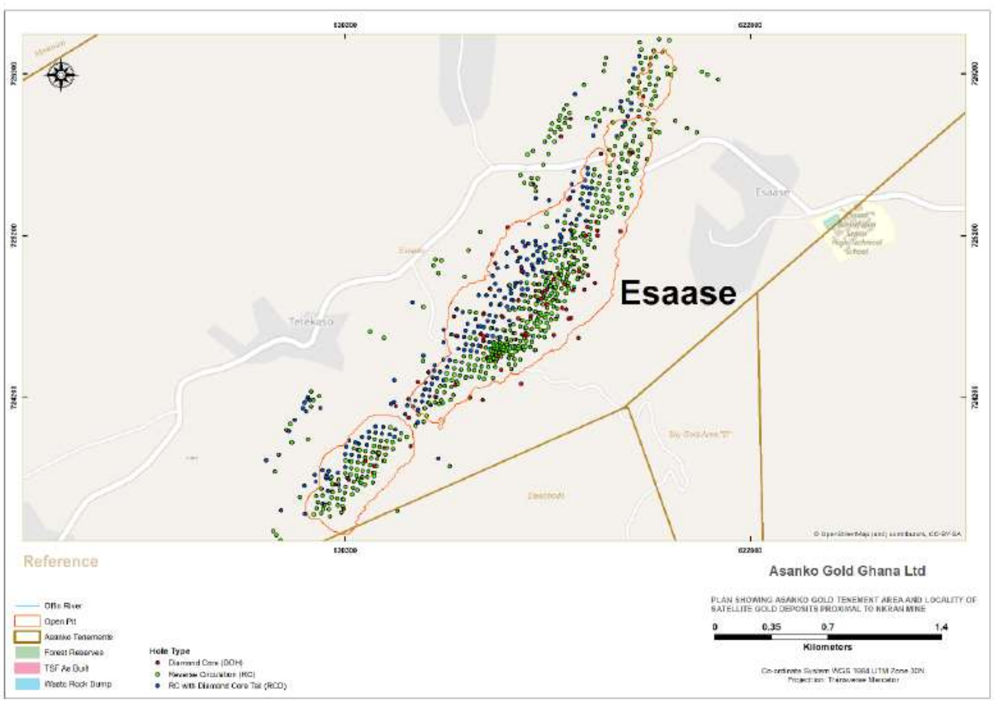


Figure 10-3 Plan Showing Distribution of Drill Hole Collars at Esaase

Note: Areas in grey denote galamsey/artisanal mining disturbance areas

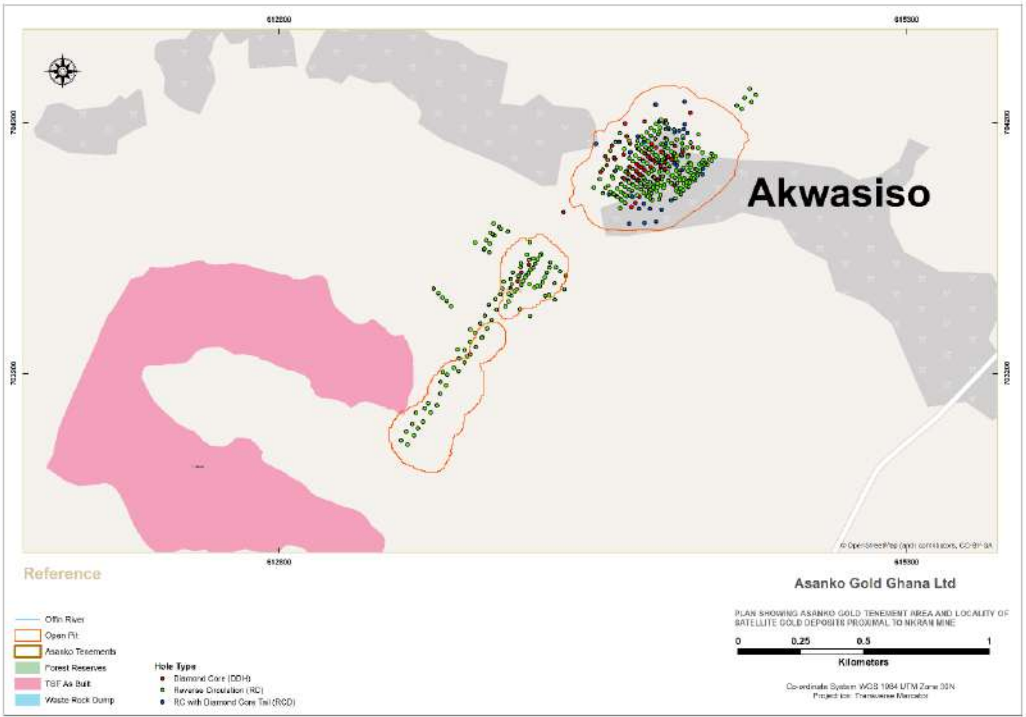


Figure 10-4 Plan Showing Distribution of Drill Hole Collars at Akwasiso and Nkran Extension
Note: Areas in grey denote galamsey/artisanal mining disturbance areas

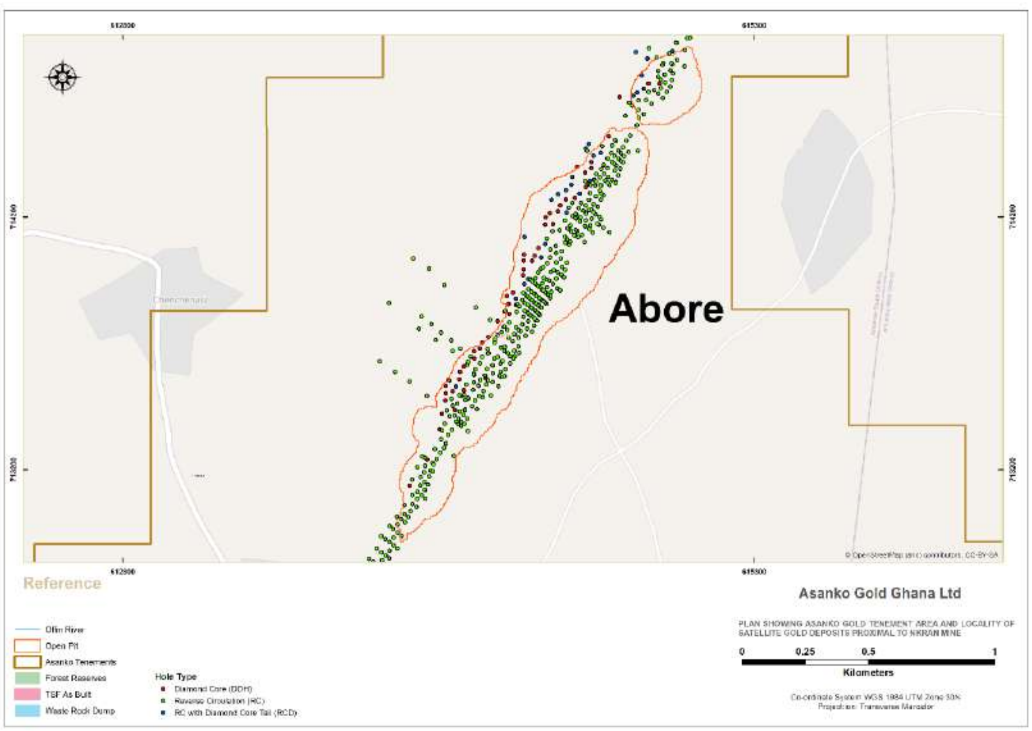


Figure 10-5 Plan Showing Distribution of Drill Hole Collars at Abore
Note: Areas in grey denote galamsey/artisanal mining disturbance areas

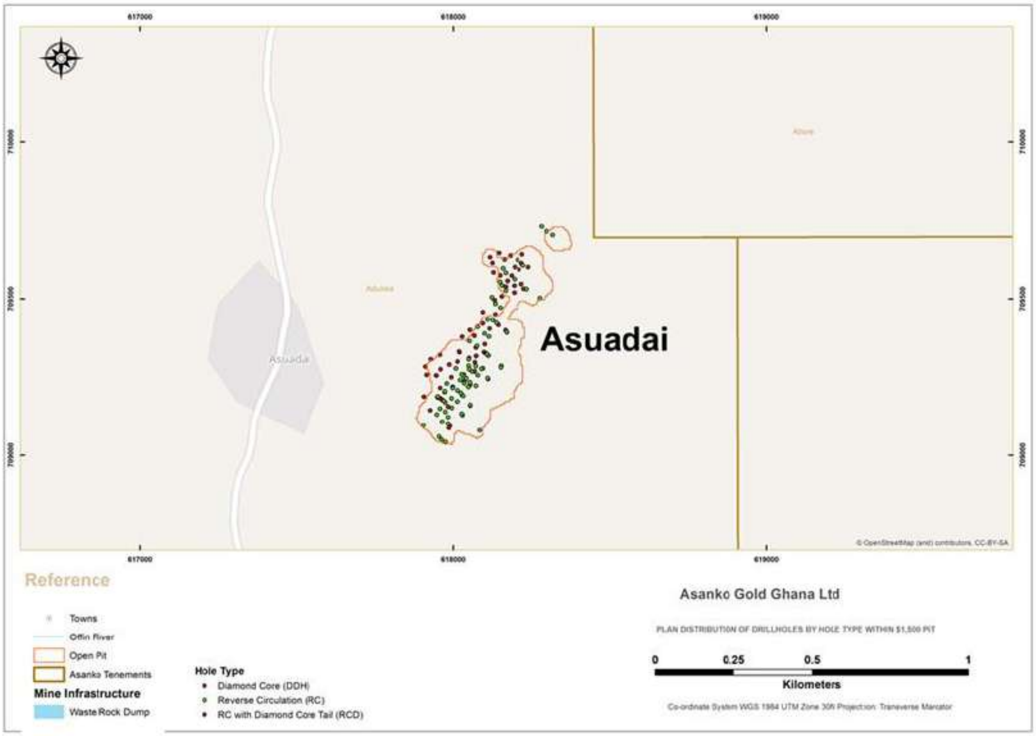


Figure 10-6 Plan Showing Distribution of Drill Hole Collars at Asuadai

Note: Areas in grey denote galamsey/artisanal mining disturbance areas

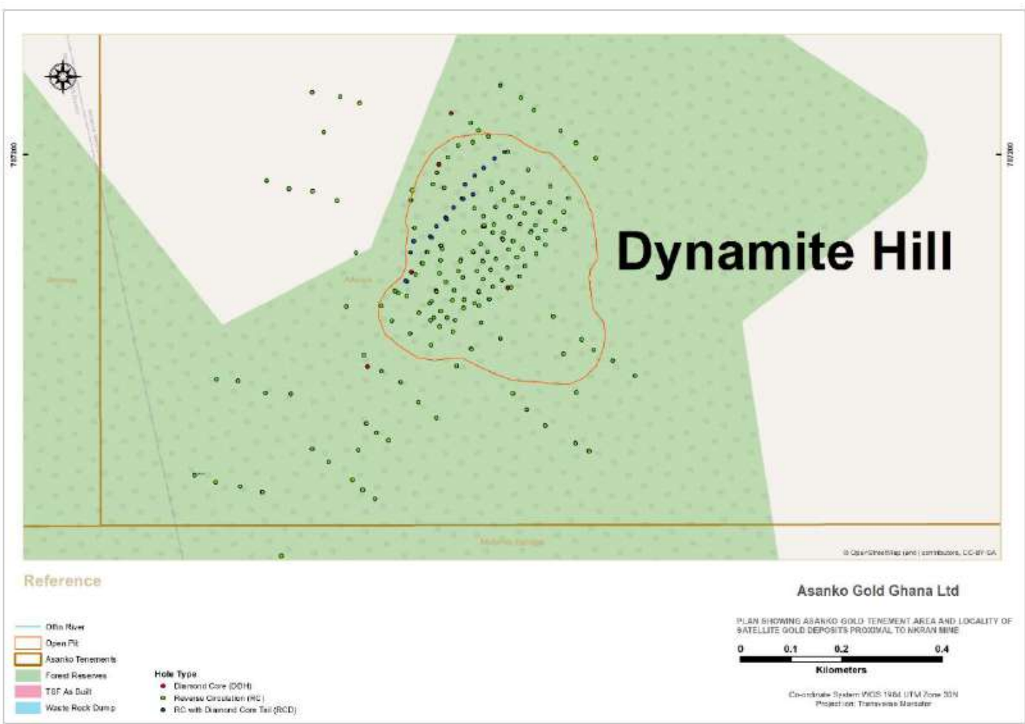


Figure 10-7 Plan Showing Distribution of Drill Hole Collars at Dynamite Hill

Note: Areas in grey denote galamsey/artisanal mining disturbance areas

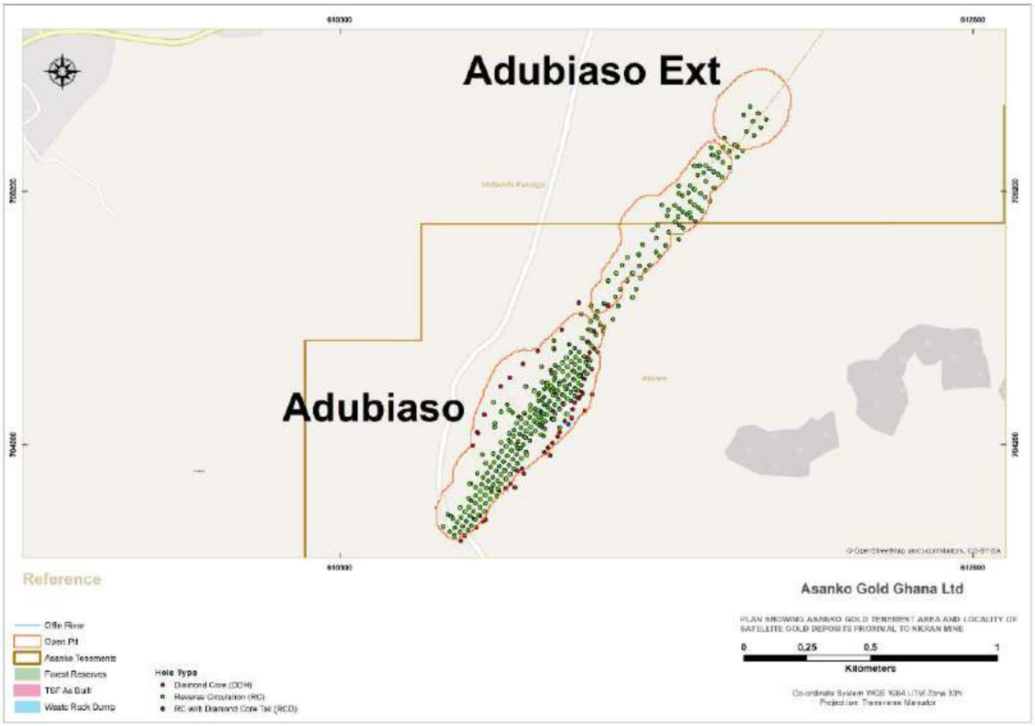


Figure 10-8 Plan Showing Distribution of Drill Hole Collars at Adubiaso and Adubiaso Extension

Note: Areas in grey denote galamsey/artisanal mining disturbance areas

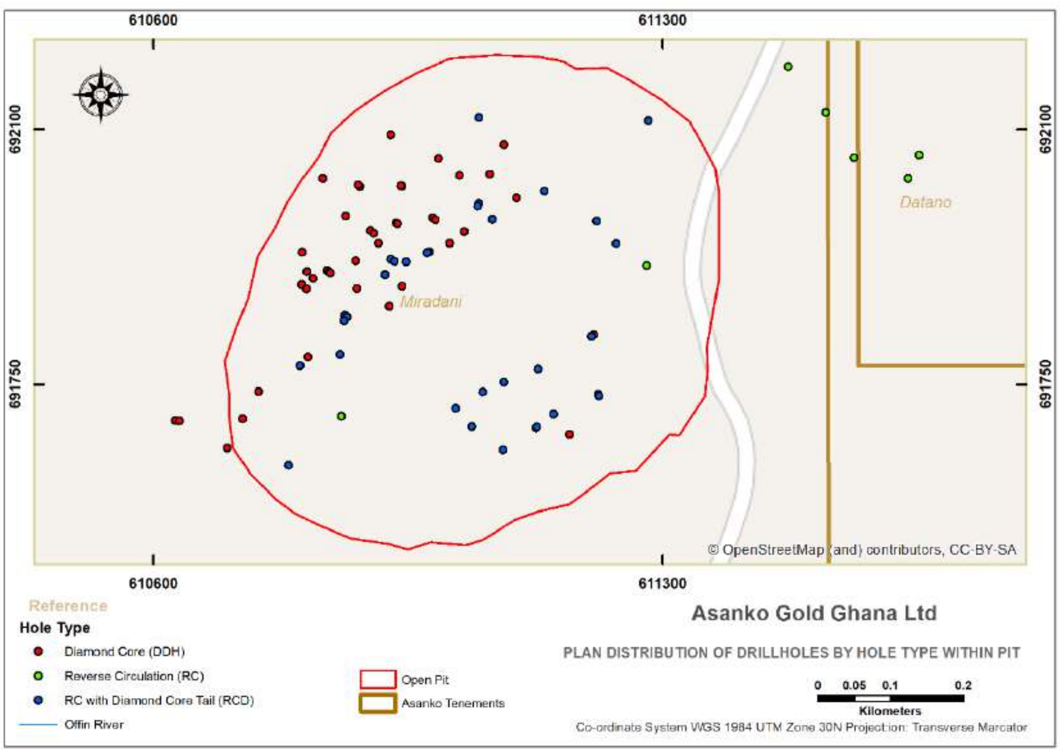


Figure 10-9 Plan Showing Distribution of Drill Hole Collars at Miradani North

Nkran has been drilled formally from the early 1990s prior to mine establishment and has since undergone numerous RC and DDH drilling and infill drilling programs to define and refine the resource model, as well as relogging of available core materials. Of note, a large proportion of (if not all) Nkran drilled by previous explorers has been mined out.

Drilling at Esaase by Keegan (precursor to Asanko/Galiano) from 2006 to 2012 focused mainly on the NE-striking, main gold bearing structures. An oxide RC infill drilling program was completed in May to June 2018 targeting the two-year oxide pit and drilled a staggered 40 m x 40 m infill pattern to increase the confidence in the mineralization within the upper portion of the deposit. Overall, the drill holes averaged approximately 60 m in depth and were spread along the length of the proposed two-year oxide pit. In addition to this program, 21,000 m of historical diamond drill core was re-logged from a selection of 83 holes covering the full strike of the Esaase Main deposit. A further 6,950 m was re-logged from 38 diamond drill holes covering the Esaase South deposit. In total, approximately 10% of core has been relogged for the purposes of refining the geological model at Esaase. An additional 11,809 m of infill drilling was completed during 2020-2021 to increase confidence and assist with the geological model development.

Resolute originally tested the Akwasiso oxide material in 2001 by RC and DD drilling. After acquiring Akwasiso, Asanko Gold completed further RC and DD drilling, including a second phase of RC and RCD drilling to upgrade the confidence of the Inferred Mineral Resources. Akwasiso was suspended as an operating pit in December 2018, and additional infill RC drilling was undertaken to define the continuation of mineralization below the current pit. Operations recommenced at Akwasiso in 2020. In 2020 to 2021 a program of 7,187 m combined RC and DD drilling was completed to upgrade the resource category and better define granitoid limits.

The Abore and Asuadai project database comprises historical drill hole data from Resolute and PMI. Between 2019 and 2021, AGM drilled an additional 11,311 m from 72 holes at Abore to extend the known resource at depth and along strike to the north. This data is used to upgrade the Abore Mineral Resource.

AGM continued testing the Adubiaso target during 2016 with a RC drilling program successfully identifying over 500 m of strike of additional multiple thin mineralized zones, which have subsequently been infill drilled. During 2016 AGM also conducted RC exploration and RC infill drilling on the NE extension of the Adubiaso pit mineralization. Minor infill drilling was completed at Adubiaso in 2020, for 1,312 m drilled.

Drill traverses for all deposits are generally aligned perpendicular to the local NE-SW mineralized trends. The drill hole spacing varies between the deposits, ranging from 10 m to 20 m across strike to 20 m to 50 m along strike (to define near surface projections of mineralization).

RC, DDH and RCD are the common drilling methods. Shallow drill holes targeting oxidized material and shallow fresh material generally use RC drilling.

The drilling density is considered appropriate to define the geometry and extent of the mineralization for the purpose of estimating Mineral Resources, given the understanding of the local geology, structure and confining formations. AGM’s strategy is to conduct drilling sufficient to assume geology and grade continuity to a level to support at least Indicated Mineral Resources and thus support the application of modifying factors in sufficient detail to support mine planning and evaluation of economic viability. Section 14 of this Report summarizes the drill hole data used in the estimation of Mineral Resources. Where concerns over legacy drilling (pre 2014) have been raised and the concerns verified, ensuing drill data has been excluded from use in Mineral Resource estimates. Legacy logging practices (PMI) have been well covered in Spiers (2010) and SRK (2011) and geological information related to these were verified by comparison with nearby AGM drilling where possible. This data has been further validated during generation of drill sections and geological interpretations, where any inconsistencies in geological logs, collar locations and downhole surveys were identified.

RC grade control (GC) drilling is conducted at the Nkran, Esaase, Akwasiso and Adubiaso pits. A summary of the drilling completed by Asanko Gold from 2014 to December 2021 is shown in Table 10-2.

Table 10-2 Grade Control Drilling Summary by Deposit (2014 to 2021)

Pit	No. of Holes	RC Metres Drilled
Adubiaso	323	11,877
Akwasiso	4320	98,400
Dynamite Hill	854	28,242
Esaase Main	25,686	629,056
Nkran Extension	470	11,028
Nkran	11,550	358,438
Total	**43,203**	**1,137,041**

In addition to this, grade control sampling has occurred as summarized in Table 10-3.

Table 10-3 Grade Control Sample Summary by Deposit Since 2014

Pit	COMP_RC	FC	Grab	RC	RPL	Total
Akwasiso				63,282	766	**64,048**
Dynamite Hill				19,028	33	**19,061**
Esaase Main				487,234		**487,234**
Nkran Extension				6,809		**6,809**
Nkran	50,186	23	54	170,117	136	**220,516**
Total	**50,186**	**23**	**54**	**727,442**	**902**	**797,668**

Note: RPL – Ripline; FC – Face channel; RC – Reverse circulation

Since 2014, Asanko Gold has taken a total of 38,469 channel, pulp, DDH and RC samples across the Adubiaso, Akwasiso, Esaase and Nkran deposits, as shown in Table 10-4. These samples are not used in Mineral Resource estimation.

Table 10-4 Drill Hole Sample Summary by Deposit for the Period of 2014 to 2021

Prospect	CHANNEL	CHIPS	DDH	PULP	RC	TOTAL
Abore			2,859		7,902	**10,761**
Adubiaso			571		3,826	**4,397**
Akwasiso			10,818		11,864	**22,682**
Dynamite			2,217		9,290	**11,507**
Esaase		119	2,057		9,072	**11,248**
Esaase Main Zone North				960	3,871	**4,831**
Esaase Main Zone South					2,325	**2,325**
Miradani North			12,983		5,611	**18,594**
Nkran	9		3,724		7,330	**11,063**
Total	**9**	**119**	**35,229**	**960**	**61,091**	**97,408**

Note: DDH – Diamond drill hole; RC – Reverse circulation.

10.2 Drill Logging Procedures

Geological information gained through the efforts of legacy operators (such as PMI and Resolute) was first validated by check logging and comparison with nearby AGM logged holes before integration into the current database. Logging procedures by PMI are well covered by Spiers (2010) and SRK (2011). The QP has also reviewed this information and considers it of an appropriate industry standard.

Since 2014, logging records include the prospect name, hole ID, person logging, date of logging, depth from/to:

- Lithology

  - Lithological unit
  - Regolith domain
  - Stratigraphic domain.
- Alteration
  - Alteration intensity
  - Alteration mineral
  - Sulphide intensity and type.
- Structure
  - Structure type
  - Younging (if visible for beds)
  - Alpha (dip of structure)
  - Beta (strike of structure)
  - Structure style
  - Lode name (if known).
- Structure zones
- Veining
- Veining density.

All logging data is captured digitally and then transferred to Maxwell DataShed™ software. Once imported into DataShed™, all data is validated and undergoes QA/QC. Validated data is stored in a SQL database and is exported into appropriate file formats for resource estimation in Isatis™ and Datamine™ RM.

10.3 Collar Survey

The proposed drill hole coordinates are prepared by the geologist and approved by the project manager. The geologist provides the field technician with the proposed drill hole coordinates and corresponding location map; and the proposed coordinates are saved in the drill hole database.

The drill hole collar location is marked and surveyed in the field using a handheld GPS to an accuracy of 1 m. If any deviations in the proposed drill hole location are encountered due to topography or other reasons, alternative locations are determined by the field technician and communicated to the geologist for approval before pad construction begins.

Once the drill hole has been completed, the surveyor returns to pick up the “final coordinate” with a total station GPS.

10.4 Downhole Survey

AGM uses the Reflex EZ Shot single shot survey tool in all RC and DD holes. The first survey is collected within the first run (3 rods or 9 m) and subsequently at 30 m intervals. The last run to end of hole (EOH) is surveyed. The down hole survey is monitored by the rig geologist while drilling so that any excessive deviation (0.2 degrees per metre) can be identified and resurveyed. The Reflex EZ Shot tool is a completely manual single shot tool and only gives a read out of the basic azimuth (AZ), dip (Incl), temperature (Temp) and magnetic susceptibility (Mag Field) data which is manually recorded and reported via a Reflex data (template) which is signed by the drilling supervisor.

10.5 Core Recovery

Core recoveries are typically calculated at the drilling site by qualified technicians or once the trays are delivered back to the core facility/yard and recorded in the geological logs. The recording of recoveries is the responsibility of the geologist. Core recoveries are typically in excess of 95%.

10.6 Core Handling

Prior to loading with core, core boxes are labelled with the drill hole number, box sequence and depth recorded in permanent marker. To ensure that pieces of core are not lost, rotated end for end, or misplaced in the tray the operator reconstructs the core after it has been placed in the tray. Wooden block markers are inserted by the driller to record depth.

A Reflex ACT IID electronic core orientation tool and barrel is used for orienting and marking core. The barrel is oriented using the electronic orientation unit prior to the drill run. The full, oriented barrel is then retrieved, the core aligned and marked using a bottom hole convention. The down hole direction is marked on the core at the base. If two sections of broken core cannot be matched, then no structural mark-up is made for the lower (down hole) part of the core run until the next barrel is retrieved and oriented.

10.7 Core Photography

Prior to cutting, all core is routinely photographed by the geologists both dry and wet. The colour and texture of the rock are best seen when the core is wet but the fracture patterns which are important to the geotechnical study are best viewed when the core is dry.

The project location, drill hole ID, tray number, depths start/end of tray and indication whether the core was dry or wet is written on white board and placed at the top of the box.

10.8 Core Cutting and Sampling

Sampling is undertaken after geological, structural and geotechnical logging. Sampling intervals are selected by the geologist, and for both HQ and NQ core conform to a minimum sample length of 30 cm and maximum of 200 cm. Sample intervals do not cross lithological boundaries as defined by the logging and are defined within similar alteration zones and structural features. The following procedures are followed:

A coloured orientation line is marked along the length of the core to indicate where the core should be cut in two equal halves. The line is traced perpendicular to the stratification; where there is mineralization, the optimum distribution is used so that 50% of mineralization is represented in each half of the core. The same side of the cut core is removed consistently throughout the drill hole (i.e. the right-hand side from the top to the bottom of the hole). The core is cut completely in two halves using an electric diamond blade saw. In the upper oxide zone, where the core is too friable for diamond saw cutting, the core is dry cut or cleaved.

A sampling form is completed with the intervals indicated for the samples. Ticket forms are completed with the drill hole ID number and FROM-TO interval for the sample. The samples numbers must be in consecutive order and are derived from the sample ticket book. Only the sample numbers are written on the plastic sample bags.

Metallic marker blocks are inserted at the start and end of each sample and the number of the corresponding sample is written with felt-tip pen on the core box to the side of the marker. Samples of approximately 2 to 3 kg are collected carefully and placed in plastic bags. The sample number is written on the plastic sample bag with a permanent marker pen. The sample ticket is stapled on the upper part of the bag, and the bag sample number is checked against ticket sample number. The bag is sealed with plastic ties.

10.9 QC Insertions

Field technicians are responsible for the bulk of QC insertions, overseen by the site logging geologist. Ultimate compliance with procedures is with the Exploration Manager and Unit Manager – Spatial Data. QC insertions are inserted onsite (at the Esaase coreyard for Esaase drilling, and at the Obotan coreyard facility for all other projects).

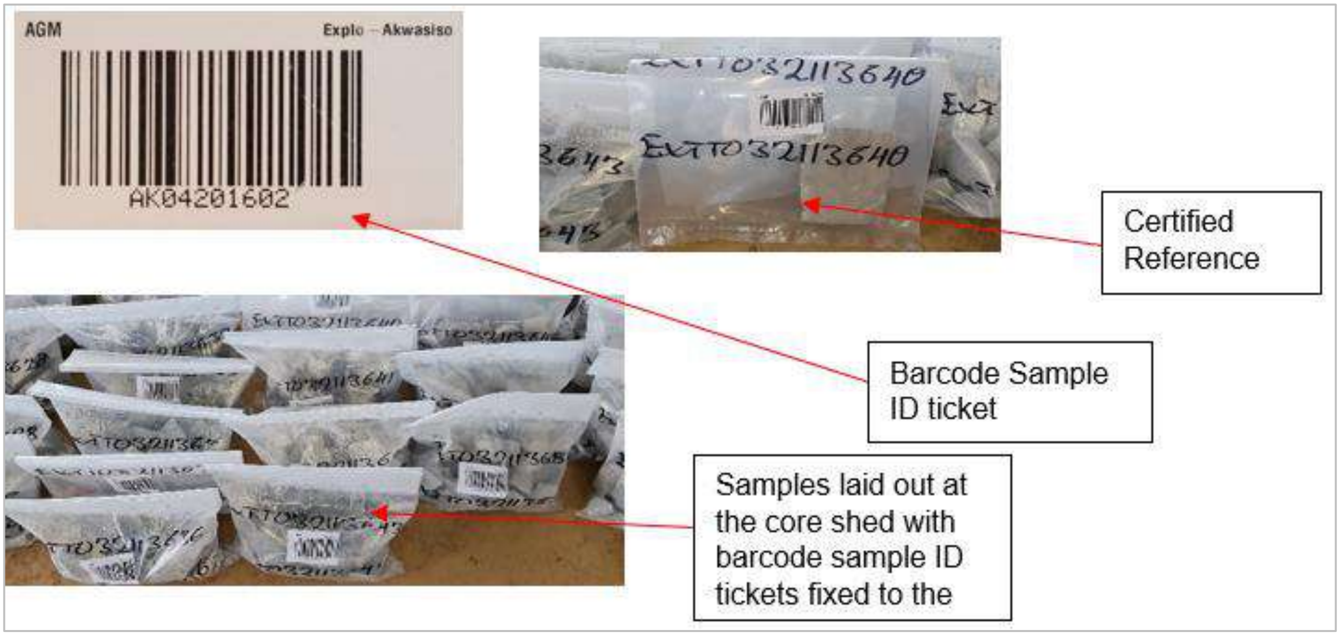


Figure 10-10 Sample Labelling Example

Each assay/sampling job follows the below steps:

- Barcode sample ID tickets should be printed out. Sample IDs for QAQC materials follow the same sequence as regular samples IDs. Samples must be laid out and QAQC materials inserted at their correct positions before putting everything together in a batch.
- Asanko Certified Reference Materials (CRM) are sourced from Geostats Pty, Australia.
- Standards (CRM's) should be inserted into routine sample batches at a rate between 2.5 per 20 samples and 5 per 40 samples. At the very minimum, quality control samples should never be less than two percent of a batch. When a standard is to be inserted, select a standard within the grade-range of the expected values in the routine samples.
- Blanks are similarly inserted onsite, alternating with standards at a rate between 2.5 per 20 samples and 5 per 40 samples.
- Duplicates are inserted into routine analytical batches at a rate of 1% to 3%, depending on the confidence level with the laboratory and the size of the batch. In the case of drill core, duplicates should be quarter (¼) of the drill core.
- DataShed™ software is used to import laboratory files, check for standards, blanks & duplicates and issue a report on standards performance for the batch. Data processing personnel communicate the outcome of the assay results and corresponding standard names for any inserted standards.

10.10 Geotechnical Logging

Geotechnical characteristics of the rock mass are described to provide all necessary data for rock mass classification schemes. Logging records include:

- Depth from/to
- Core diameter
- Recovery
- Rock quality designation
- Lithology
- Alteration
- Defects
- Origin
- Alpha, beta
- Planarity, roughness
- Infill type and thickness
- Hardness
- Broken zone
- Orientation.

Four geotechnical rock tests may be undertaken, including point load testing and tilt testing (conducted on-site), and uniaxial compressive strength (UCS) testing and direct shear testing (conducted at off-site laboratory).

10.11 Core Storage

A core shed facility is located at Nkran. This facility has spacious core logging facilities, a dedicated XRF/spectrometer office, a dedicated core saw/splitter facility, covered core storage on pallets and pallet racking with a forklift, and containerized storage for pulps. With the exception of Esaase, all core from the other deposits is transported to the Nkran core shed for logging and storage.

The storage facility at Esaase consists of sheds with elevated racks on concrete floors that are sheltered from wind and rain. The core is stored following geological logging, photography, core cutting and sampling.

10.12 Density Sampling

The logging geologist selects a 10 to 20 cm length of half core for the density measurement. One representative sample is taken in each 10 m interval of unmineralized core, or in each 5 m interval of mineralized core. The geologist marks with a permanent marker pen the interval of the half core which is to be sampled. A technician labels the density sample with a black permanent marker indicating the hole number and the “FROM” and “TO” measurements. Details of each sample are recorded on a density sample registration form.

The technician in charge of the density measurement takes a photograph of the sample outside the core box with the sample registration details. The photographs are downloaded to a computer. Photographs are named using the HOLE NUMBER_FROM_TO information, and download on the exploration database computer, with a backup in the server. A wooden block is placed in the core box where the sample was taken. The sample interval (“FROM” and “TO”) is written on the wedge, together with the word ‘Density’. Density is measured at the Asanko lab onsite following the Archimedes method, outlined in Section 11.

Duplicate measurements were taken by the laboratory for every tenth sample. Selected samples (1 in 30), located adjacent to the primary samples, were sent to a second laboratory (Intertek – Tarkwa) for check density measurements.

10.13 RC Sampling

Prior to commencing drilling, a series of sample bags for each hole are labelled with “FROM” and “TO” depths. For the original samples 40 cm x 50 cm bags are used, and for the reject samples 50 cm x 100 cm bags are used. Chip trays are labelled with Hole ID, sample number and From-To depths, as well as any quality control samples with FB (field blank) or FD (field duplicate).

The hole is drilled dry to maximize sample recovery and avoid losing fines, and a rig mounted rotary splitter is used wherever possible. In exploration drilling, a triple-tiered riffle splitter is used whenever a rotary splitter is not available. In GC drilling, a stationary cone splitter is used whenever a rotary splitter is not available. The auxiliary booster and compressor must be operational and used if water is encountered.

The cyclone is continuously monitored to avoid contamination from clogging and to ensure it is cleaned as required, and at a minimum, after completing each hole. The drill rods, down-hole hammer bit and the sampling equipment are cleaned regularly using compressed air, at each rod addition and after each hole. Sample buckets/bags are removed when the hole is flushed by the driller at the change of rods. The triple-tiered riffle splitter is frequently inspected and cleaned with compressed air or by hammering the side of the splitter between each sample, to avoid contamination and ensure representative samples.

Samples are taken at precise 1 m intervals for exploration drilling and 1.5 m intervals for GC drilling with no lag in the sampling. For every sample, the complete sample interval is collected from the cyclone.

Samples of approximately 2-3 kg are collected in the pre-labelled (FROM_TO) plastic bags and sealed with plastic tags. Samples are collected from the drill site every shift and transported to the Obotan (Nkran) and Esaase camp.

In exploration drilling, rejects are placed in plastic bags correctly labelled with FROM-TO depths and the samples bag securely closed. Reject bags are placed on the ground in organized piles. After each sample is placed in a sample bag, the technician takes a sub-sample of the field reject, sieves and washes the sample where fresh, and spoons the sample into the sequential trays. This provides a permanent record of the geology of each sample.

The sampling method (riffle splitter, rotating cone splitter, rotating wet splitter), estimation of recovery (%) and sample condition (dry, damp, wet) are recorded in a log.

A sample weighing program is undertaken on the RC rig, across each shift over a 24-hour period, to ensure that the optimal sample size is being taken, and to determine the recovery. All material reporting through the splitter is weighed for every interval drilled. The A and B samples are weighed to ensure a representative split, and the field reject is weighed to allow calculation of total sample recovery per interval drilled. The A and B samples must be consistently within 10% of the weight of each other. If this is not achieved it must be communicated to the driller, drilling manager and Project Manager so that the rotary/cone splitter can be calibrated.

As the samples are drilled, they are lined-up in order according to the FROM-TO intervals. The ordered samples are checked against the log sheet from the drill rig. The technician then writes the sample bag number on the plastic sample bag according to the number in the log sheet. Sample tickets are stapled to the plastic bags (bag sample number against ticket number is checked).

As with diamond core sampling summarized above, field technicians are responsible for the bulk of QC insertions, overseen by the site logging geologist. Ultimate compliance with procedures is with the Exploration Manager and Unit Manager – Spatial Data. QC insertions are inserted onsite (at the Esaase coreyard for Esaase drilling, and at the Obotan coreyard facility for all others). QC insertions are made as follows:

- Standards (CRM's) should be inserted into routine sample batches at a rate between 2.5 per 20 samples and 5 per 40 samples. At the very minimum, quality control samples should never be less than two percent of a batch. When a standard is to be inserted, select a standard within the grade-range of the expected values in the routine samples.
- Blanks are similarly inserted onsite, alternating with standards at a rate between 2.5 per 20 samples and 5 per 40 samples.
- Duplicates are inserted into routine analytical batches at a rate of 1% to 3%, depending on the confidence level with the laboratory and the size of the batch.

Detailed logging is undertaken by the exploration or grade control RC geologist using the MaxGeo LogChief™ data collection system.

10.14 Pre 2014

Drilling procedures for PMI prior to 2014 are covered in Spiers (2010) and SRK (2011). Procedures followed by Resolute are not well documented. In summary:

- Once core is thoroughly washed, individual core trays are photographed when wet.
- Core boxes are laid onto logging racks in numerical order and the recoveries measured, reconciled by drillers core blocks.
- Metre marks are directly on the core.
- Logging includes detailing all relevant lithologies, fractures, foliations, laminae, crenulations, cleavages and angles of formational contacts.
- Rock Quality Designation (RQD), indicating the strength of the rock units, are also noted and recorded.

Relogging and inspection of sample results from this period indicates drilling, logging, and sampling procedures were similar to the current methods. Recovery and density measurements are less frequent or not recorded. QC insertion types and rates are less than current and in some cases no QC insertion is evident, however this data contributes to an insignificant portion of the Mineral Resource estimate.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Legacy Data (Pre-2014)

This subsection refers to sample preparation and analyses methods employed by PMI and Resolute (pre-2014) on samples from the Nkran, Abore, Akwasiso, Asuadai and Adubiaso deposits.

11.1.1 Resolute

No detailed breakdown on Resolute sampling and quality control measures was available for review.

11.1.2 PMI

These procedures have been reviewed and discussed by Spiers (2010) and SRK (2011).

In summary, the PMI core sampling procedures are as follows (from Spiers, 2010):

- Once the geological logging is complete, intervals to be sampled are pre-determined by referring to the drill logs and the drill core. Intervals are kept at one meter separations, within the normal mineralized zones, but at shorter intervals where isolated narrow mineralized features occur. Within “waste” zones, four-meter composite sample intervals are taken. Intervals to be assayed are marked directly on the core, using a permanent marker.
- The core is then ready to be sawn, using a diamond core cutting machine. One half of each sawn core section is carefully returned to its respective position in the core box for permanent storage. On occasion for data analysis purposes, where coarse gold was noted in the section, the entire section was submitted for assay.
- Sample numbers are allocated to each sawn portion of core, from each drill hole. Sample numbers are pre-written on plastic bags, into which the samples are carefully and individually placed and sealed with a stapler.

PMI RC sampling procedures as follows (from Spiers, 2010, via pers comm with PMI geologists):

- Sampling of reverse circulation drill cuttings is initiated at the drill site, where each representative sample is collected from the RC cyclone cuttings, corresponding to each meter of hole “depth”.
- The entire length of each RC hole is sampled. Samples, which usually weigh approximately 25 kg, are reduced in size to about 2-3 kg, by riffle splitting.
- Typically two duplicate splits are taken – one for assaying and a second for “pan” gold counts.
- As recovered from the drill cyclone, each sample is bagged, identified, permanently marked, recorded and secured by PMI’s Drill Geologist. The bagged ‘assay’ samples are transported to PMI’s sorting site (in the Geologist’s pickup) where they are laid out in appropriate rows according to their respective drill holes and “footages”.
- At the end of each shift these RC samples are transferred to PMI’s field office where they are secured in a clean, dry and locked storage room and recorded in the Company’s data base.
- Typically, results from the panning of duplicate samples are available within one day of the drilling. This is also recorded in the Company’s database and used to cross-check the assay results. Where significant visible gold is noted in the panning – the duplicate ‘assay’ sample is submitted as a 1 meter sample; where low gold colours are noted – the ‘assay’ samples are typically combined to form 2 to 4 metre composites for assay.

Laboratory location, accreditation status for assay results before 2015 are shown in Table 11-1. Although accreditation is unknown before 2014, these laboratories are operated by reputable independent companies which typically exercise expected industry standards.

Table 11-1 Summary of Laboratory Location and Accreditation Status

Laboratory	Locality	Period	Accreditation
SGS	Accra	1995	unknown
Inchcape	Obuasi	1995-1997	unknown
Analabs	Nkran Site	1997-1998	unknown
SGS	Bibiani	2009 - 2012	unknown
SGS	Tarkwa	2010-2011	unknown
Min Analytical	Perth	2011-2014	unknown
ALS Kumasi	Kumasi	2006-2014	unknown
Trans World (TWL)	Tarkwa	2009-2010	unknown
Intertek	Tarkwa	2010-2014	unknown
Performance Labs	Bibiani	2010-2012	unknown

Laboratory sample preparation and analysis methods for assays before 2014 are summarized in Table 11-2.

Table 11-2 Laboratory Sample Preparation and Analysis Methods Before 2014

Laboratory	Locality	Period	Preparation	Au Assay Method	Lower Detection Limit
SGS	Accra	1995	Jaw crush to -6 mm, then cone crushed or disk milled to -2 mm. Pulverisation of 300 g to 1 kg split -200 mesh in labtechnic homogenizing mill	Fire assay	0.01 g/t
Inchcape	Obuasi	1995-1997	Dry, crush, pulp 2 kg. SFA dry at 105 °C, ringmill 500 g to 1.5 kg 75 µms	Fire assay, screen fire assay	0.01 g/t
Analabs	Nkran Site	1997-1998	Drying, jaw crushing to nominal 6 mm to 12 mm. Sample volume reduction - riffle split. Ringmill <1 kg, nominal 75 microns	Fire assay	0.01 g/t
SGS	Bibiani	2009 - 2012	3 kg or less of sample is dried, disaggregated, and jaw crushed to 3 mm. Sample is pulverized to 95% passing 75 µm using an LM2 pulverizer. Two pulp samples are taken for analysis and pulp storage	Fire assay	0.01 g/t
SGS	Tarkwa	2010-2012	3 kg or less of sample is dried, disaggregated, and jaw crushed to 3 mm. Sample is pulverized to 95% passing 75 µm using an LM2 pulverizer. Two pulp samples are taken for analysis and pulp storage	Fire assay, screen fire assay	0.01 g/t
Min Analytical	Perth	2011-2014	3 kg or less of sample is dried, disaggregated, and jaw crushed to 3 mm. Sample is pulverized to 95% passing 75 µm using an LM2 pulverizer. Two pulp samples are taken for analysis and pulp storage	Fire assay	0.005 g/t
ALS Kumasi	Kumasi	2006-2014	3 kg, or less of sample is dried, disaggregated, and jaw crushed with 70% passing 2 mm. Sample is pulverized to 85% passing 75 µm using an LM2 pulverizer. Two pulp samples are taken for analysis and pulp storage	Fire assay, Leachwell bottle roll*, screen fire assay	0.01 g/t
Trans World (TWL)	Tarkwa	2009-2010	3 kg or less of sample is dried, disaggregated, and jaw crushed to 3 mm. Sample is pulverised to a nominal 95% passing 75 µm using an LM2 pulveriser. Two pulp samples are taken for analysis and pulp storage	Fire assay	0.01 g/t
Intertek	Tarkwa	2010-2014	Samples are crushed to 2 mm and pulverised to 75 µm	Fire assay, Leachwell bottle roll*	0.01 g/t
Performance Labs	Bibiani	2010-2012	Samples are crushed to 2 mm and pulverised to 90% passing 75 µm in LM2 pulverisers. 250 g pulp sample taken for analysis	Fire assay, BLEG	0.01 g/t

11.2 Current Data (Post 2014)

This section refers to methods employed post-2014 on samples from the Esaase, Nkran, Abore, Akwasiso, Asuadai and Adubiaso, Dynamite Hill, and Miradani North deposits, as well as regional exploration samples. Unless specified otherwise, all diagrams in this section are sourced from Asanko Gold 2021.

11.2.1 Sample Preparation Methods and Quality Control Measures Taken Before Submission to the Laboratory

Diamond drill core samples are determined by the logging geologist and should be between 30 cm and 150 cm in length. Samples must not cross lithological boundaries and must be defined within similar alteration zones and structural features. Samples should weigh between 2 and 3 kg. QC samples are inserted by the logging geologist at the core shed.

RC samples of approximately 2 to 3 kg are collected from the cyclone at 1 m intervals and split in a riffle splitter. If the resultant sample is greater than 3 kg, then the entire sample is re-split. The cyclone is continuously monitored to avoid contamination from clogging and at a minimum cleaned after every hole. The drill rods, down-hole hammer bit and the sampling equipment are cleaned regularly using compressed air. To determine recovery and ensure that the optimal sample size was taken, recovery is monitored by weighing samples at the RC rig.

The geologist ensures that the quality control samples are inserted at the core yard and monitors the dispatch of the samples to the laboratory. A 2 to 3 kg duplicate sample is taken in an identical manner as the original and stored in a pre-labelled sample bag.

To avoid contamination, no metal jewellery is permitted to be worn by the Asanko Gold samplers.

Samples with visible gold were routinely submitted for either screen fire assay or a bulk cyanide leach assay. All sample preparation, apart from discussed above, is undertaken by the preparation and analytical laboratories. The quality of analysis at the laboratories was monitored using blanks, standards, duplicates and check assays.

With the exception of Esaase, all exploration samples are processed and stored at the AGM exploration facilities at Obotan. Esaase RC chips, half-core and core photographs, duplicate pulps and residues of all submitted samples are retained and stored at the Asanko Gold exploration camp at Tetrem.

Grade control samples were collected by reverse circulation drilling with an optimal drilling depth of 30 meters. Samples were taken at regular 1.5 m intervals and 2.5 kg to 3.0 kg of samples were collected using automatic cone splitter mounted on the GC drill rig. All samples were collected into plastic bags, labelled and sealed on site before transported to the Asanko mine laboratory for preparation and analysis. The QP has reviewed the procedures of the RC drilling, sample collection, preparation, transportation, QAQC measures and is of the opinion that the procedures established at AGM met the industry standards of similar mining operations.

Diamond core cutting procedures vary slightly between the earlier work and the current AGM sampling. In both cases an orientation line was drawn on the core and an electric diamond core saw used to cut the core, retaining the left-hand side for reference (when looking down hole). Historical samples were cut 1 cm to the right of the line and AGM samples are cut along the line. Asanko Gold procedures state that the line should be traced perpendicular to the stratification, or where there is mineralization one should try to get the optimum distribution so that 50% of mineralization is represented in each half of the core.

Where core was too friable to cut with a diamond saw, the core was dry cut or cleaved.

Nkran exploration RC samples were taken from the drilling rig using a rotary splitter which produced equal aliquots to mitigate any bias. A 3 kg sample was collected for laboratory submission and coarse rejects of all samples were kept as a backup for at least three months (GC) and six months (exploration).

Esaase and other RC samples are split using a three-tier riffle splitter (1 in 8 split) to obtain a sub-sample of 3 kg or less and collected in pre-labelled plastic bags. Rejects are stored in plastic bags.

11.2.1.1 Bulk Density Measurements

Esaase bulk density measurements were collected over a range of lithological and weathered profiles. The Archimedes principal was used and is summarized as follows:

- 10 cm billet of clean, dry core (core dried in oven for 4 hours at 60°C) was weighed
- Core was immersed in paraffin wax and then reweighed (to determine wax weight)
- Billet was suspended and weighed in water
- Bulk density (BD) calculated as: BD = [Mass Core] / [(Mass Air - Mass Water) – (Mass Wax / 0.9)].

Asanko Gold samples are sent for laboratory bulk density analysis using the Archimedes method, methodology as follows:

- 10 to 20 cm length of half core from each 10 m interval of unmineralized core, or 5 m interval of mineralized core (dried in an oven at 105ºC) was weighed (W1)
- Samples were coated with paraffin wax and reweighed (W2)
- The volume of the sample was measured (V1)
- Density was calculated from the following equation:
  - Density= W1 /(V1- ((W2-W1)/DP) where DP = wax density (0.8 g/cm^3).

Duplicate measurements were taken by the laboratory for every tenth sample. Selected samples (1 in 30), located adjacent to the primary samples, were sent to a second laboratory for check density measurements.

11.2.1.2 Quality Control Sample Insertions

QC insertion procedures are adequately covered in Section 10.9 and Section 10.13.

11.2.1.3 Security Measures

At Nkran, individually bagged core and RC drilling samples were packed in polyweave, or heavy plastic sacks, tied with binding wire and prepared for transport to the laboratory. The geologist was responsible for sample security and prior to dispatch, the samples were firmly secured and locked in a designated sample room at PMI's field office.

Esaase (and Akwasiso) sampling procedures required samples to be collected in staple-closed bags once taken from the rig or core-cutting facility. The samples were then transported to the project camp to be picked up by the laboratory truck and taken directly to the laboratory.

The AGM procedure for sample submission is as follows:

- RC samples are collected from the drill site every shift and transported to the Obotan and Esaase camp
- Samples are packed in 50 kg bags and stored in the logging shed until shipped to the laboratory
- The QA/QC geologist supervises loading of samples on to the truck
- A sample dispatch form accompanies the samples, and another signed by the exploration manager is provided to the security guards to authorise the shipment to leave the camp
- At the laboratory, the laboratory representative signs the sample dispatch form confirming receipt and change of custody for the samples.

11.2.2 Laboratory Certification

Since 2014, exploration samples are sent to either ALS laboratory in Kumasi, Intertek laboratory in Tarkwa, or the AGM Mine laboratory at Obotan. ALS and Intertek are independent from Galiano Gold Inc. The AGM Mine laboratory is not independent from Galiano Gold Inc.

ALS Ghana in Kumasi received accreditation of ISO/IEC 17025:2005 in 2018 and received ISO/IEC 17025:2017 accreditation in 2020. The scope of accreditation includes analysis for gold by fire assay followed by acid digestion and AAS finish. Before 2018 the laboratory was operating as per the ISO standards but was not certified or accredited.

The Intertek laboratory in Tarkwa received ISO/IEC 17025:2005 accreditation in 2017 and received ISO/IEC 17025:2017 accreditation in 2019. The scope of accreditation included analysis for gold by fire assays followed by acid digestion and AAS finish. Before 2017 the laboratory was operating as per the ISO standards but was not certified or accredited.

The AGM Mine laboratory holds no certification or accreditation. The mine laboratory QAQC procedure and data was independently reviewed by independent consultant, Richard Minnitt (Minnitt, 2020) in November 2020. No significant issues were identified. The QP visited the AGM mine laboratory multiple times in 2021, reviewed the process and interviewed the laboratory personnel, and is of the opinion that AGM laboratory is operated at industry standard. Table 11-3 summarizes primary laboratory location and accreditation.

Table 11-3 Primary Laboratories Between 2014-2021

Laboratory	Locality	Period	Accreditation	Scope of Accreditation
ALS	Kumasi	2014-2021	2014-2020 none 2020 - ISO/IEC 17025:2017	analysis for gold by fire assays followed by acid digestion and AAS finish
Intertek	Tarkwa	2014-2021	2014-2017 - none 2017-2019 - ISO/IEC 17025:2005 2019-2021 - ISO/IEC 17025:2017	analysis for gold by fire assays followed by acid digestion and AAS finish
Asanko Gold	Obotan	2017- 2021	none	none

11.2.3 Laboratory Sample Preparation and Analysis

Table 11-4 summarizes sample preparation methods at each of the primary laboratories.

Table 11-4 Summary of Analytical Laboratories Sample Preparation and Gold Assay Techniques

Laboratory	Locality	Period	Preparation	Au Assay Method	Lower Detection Limit
ALS	Kumasi	2014-2021	PREP-31 - 3 kg, or less of sample is dried, disaggregated, and jaw crushed with 70% passing 2 mm. Sample is pulverised to 85% passing 75 µm using an LM2 pulveriser. Two pulp samples are taken for analysis and pulp storage	30 g fire assay and AAS 30 g screen fire assay	0.01 g/t 0.05 g/t
Intertek	Tarkwa	2014-2021	Samples are crushed to 2 mm and pulverised to 75 µm	Fire assay Leachwell bottle roll*	0.01 g/t 0.001 g/t
Asanko Gold	Nkran site	2017-2021	Samples are crushed to 2 mm and pulverised to 90% passing 75 µm in LM2 pulverisers. 250 g pulp sample taken for analysis	Fire assay Leachwell bottle roll*	0.01 g/t 0.001 g/t

**Leachwell bottle roll assays used for grade control*

11.2.4 Check Assay Analysis

There were no check assays for exploration samples done in 2014.

Exploration samples were initially analyzed at Asanko Lab from 2015-2016, and were check assayed at the ALS lab in Kumasi.

Exploration samples analyzed at the Intertek Laboratory during 2017-2021 were sent to ALS.

No check samples have been submitted for grade control samples.

11.2.5 Pre-2020 Quality Assurance and Quality Control Results

SRK, CJM, and CSA Global have reported results of their reviews of the Quality Control results in the 2012, 2014, 2015, 2017, and 2020 technical reports. In 2015 CJM concluded the QA/QC undertaken by Resolute, PMI and Asanko is adequate and that the current QA/QC systems in place to monitor the precision and accuracy of the sampling and assaying are adequate. In 2017 CSA Global concluded there was little to no quality control results available to support historical (Resolute and PMI) assay results and that QC results for Akwasiso and Esaase were insufficient to adequately monitor the sampling and assay contamination, accuracy and precision.

In the 2020 technical report, CSA Global concluded sample preparation, security, and analytical procedures for the Asanko Gold deposits under investigation are acceptable for use in Mineral Resource estimation. CSA Global also identified several QAQC issues and recommended further action to improve the quality of data. Summary comments by CSA Global from their 2020 review are shown in Table 11-5.

No exploration drilling was undertaken at Dynamite Hill between 2017 and 2020, and CSA Global concluded in the 2017 report that sample preparation, security, and analytical procedures for Dynamite Hill were acceptable for use in Mineral Resource estimation. No specific recommendations were made regarding QAQC at Dynamite Hill at that time. The drilling at Miradani was limited to four holes and was not discussed in detail.

The QP has reviewed the CSA Global, CJM and SRK reports and agrees the QAQC procedures and quality control results for sampling before 2020 have provided assay results suitable to support Mineral Resource estimation.

Table 11-5 Summary Findings From Previous QC Reviews

Primary Laboratory Results	Comments
Nkran	No material concerns with cross contamination or assay accuracy and insufficient samples to assess precision for sample from 2017 onwards. Historical data had indications of cross contamination as well as multiple CRM failures, and no precision controls.
Esaase	No material concerns with cross contamination or assay accuracy for the range up to approximately 3 ppm Au. Over 3 ppm Au, there are no controls on assay accuracy
Akwasiso	No material concerns with cross contamination or assay accuracy for the range up to approximately 3 ppm Au. Over 3 ppm Au, there are no controls on assay accuracy; (DD) have acceptable; RC results from the Asanko Gold mine lab have poor repeatability precision
Abore	No material concerns with cross contamination or assay accuracy, insufficient duplicates to assess precision; the proportion of blank and CRM samples included with the primary samples was lower than industry norms.
Asuadai	No material concerns with cross contamination or assay accuracy; insufficient duplicates to assess precision
Adubiaso	No material concerns with cross contamination or assay accuracy; RC sample assay precision is poor; no DD duplicate data available
Check Laboratory Results	
Nkran	Poor repeatability. Only ten external check samples were available for review

Primary Laboratory Results	Comments
Esaase	Poor repeatability
Akwasiso	Significant bias but original samples were analyzed at the AGM laboratory using a bottle roll cyanide leach and the umpires at Intertek Tarkwa by fire assay
Abore	Only five samples available for review, therefore no definitive conclusions could be made
Asuadai	Only five samples available for review, therefore no definitive conclusions could be made
Adubiaso	Only eight samples available for review, therefore no definitive conclusions could be made

The QP considers that Table 11-5 above represents an adequate summary of findings from previous QAQC reviews.

11.2.6 Post 2020 Quality Assurance and Quality Control Results

11.2.6.1 Nkran

Seventy-one holes were drilled in between June 1st to September 30th, 2020 at Nkran. No drilling was completed in 2021. Mining ceased early Q2 2020, so no GC were samples submitted. QC insertion rates are summarized in Table 11-6.

Table 11-6 Nkran QAQC Samples For Period 01/06/2020 to 30/09/2020

Reference Material	Number Inserted	Total No of Samples Sent	Percentage of Reference Material (%)
Blanks	240	-	2.99
CRM	266	-	3.31
Duplicates	260	-	3.24
Total	**766**	**8,022**	**9.54**

Cross Contamination

Blanks were used 240 times during sampling of Nkran drilling program. All blanks passed at ±2 standard deviation.

An example of a Blank control chart is shown in Figure 11-1.

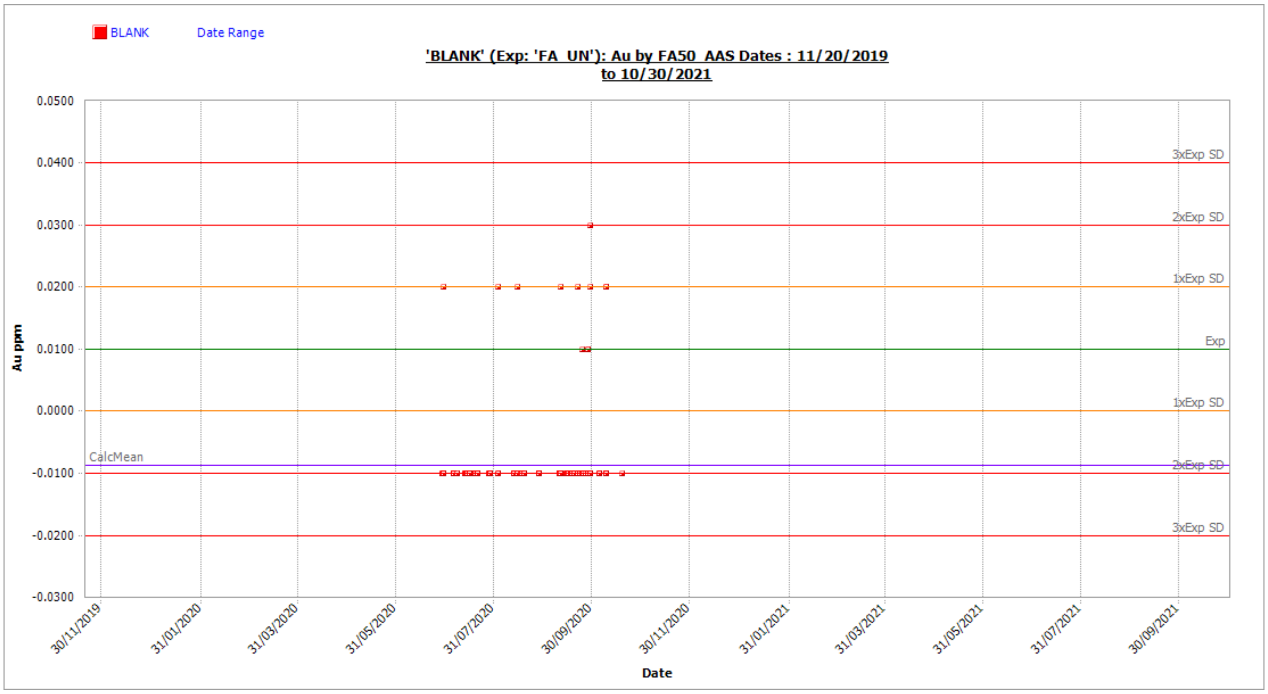


Figure 11-1 Plot of Nkran Blanks for the Period Noted

Assay Accuracy (Bias)

- All standards are within mean ±3 times the standard deviation with nearly 98% of those are within the mean ±2 times the standard deviation.
- No significant bias relative to the expected mean is evident.
- Table 11-7 summarizes the results of the Standards.

Table 11-7 Standard Materials for Nkran Submitted to Lab - 2020

Au Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Au	SD	CV	Mean Bias
G300-9	FA50_AAS	FA50_AAS	1.5300	0.0600	91	1.5427	0.0678	0.0440	0.83%
G311-8	FA50_AAS	FA50_AAS	1.5700	0.0800	91	1.5711	0.0678	0.0432	0.07%
G910-6	FA50_AAS	FA50_AAS	3.0900	0.1300	84	3.1307	0.1090	0.0348	1.32%

Assay Precision

- 260 Field Duplicates were collected.
- Figure 11-2 below shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Nkran, with warning set to 15% variation limit.
- Figure 11-3 shows that nearly 55% of the paired duplicates had an absolute relative difference of less than 30%, typical for field duplicate gold analysis.

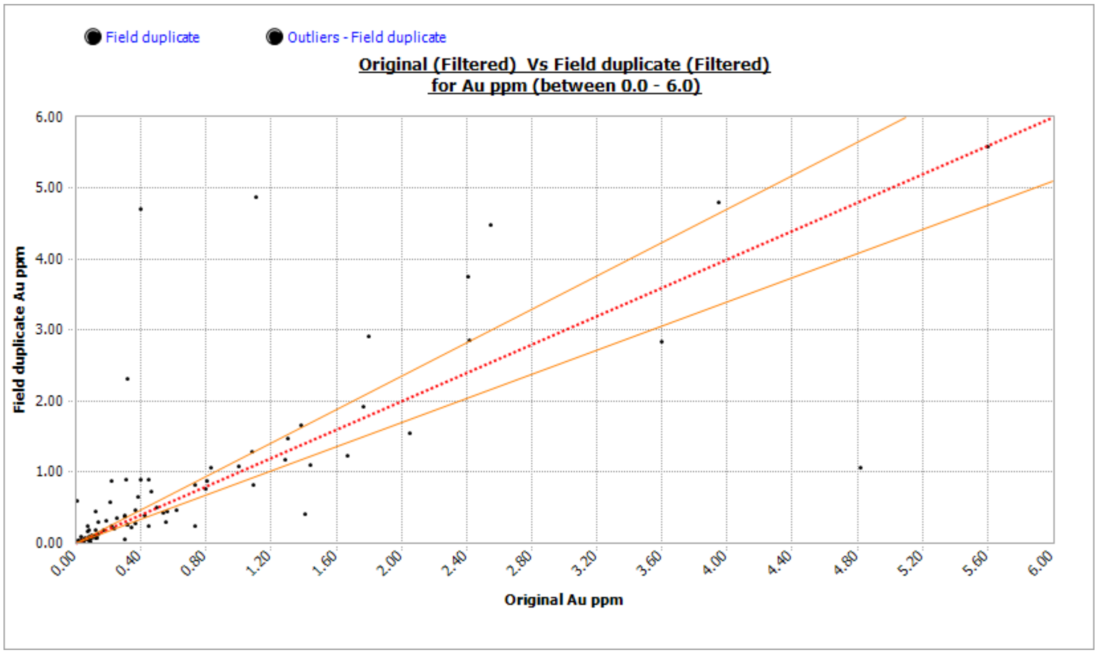


Figure 11-2 Scatter Plot of Nkran Exploration Field Duplicates

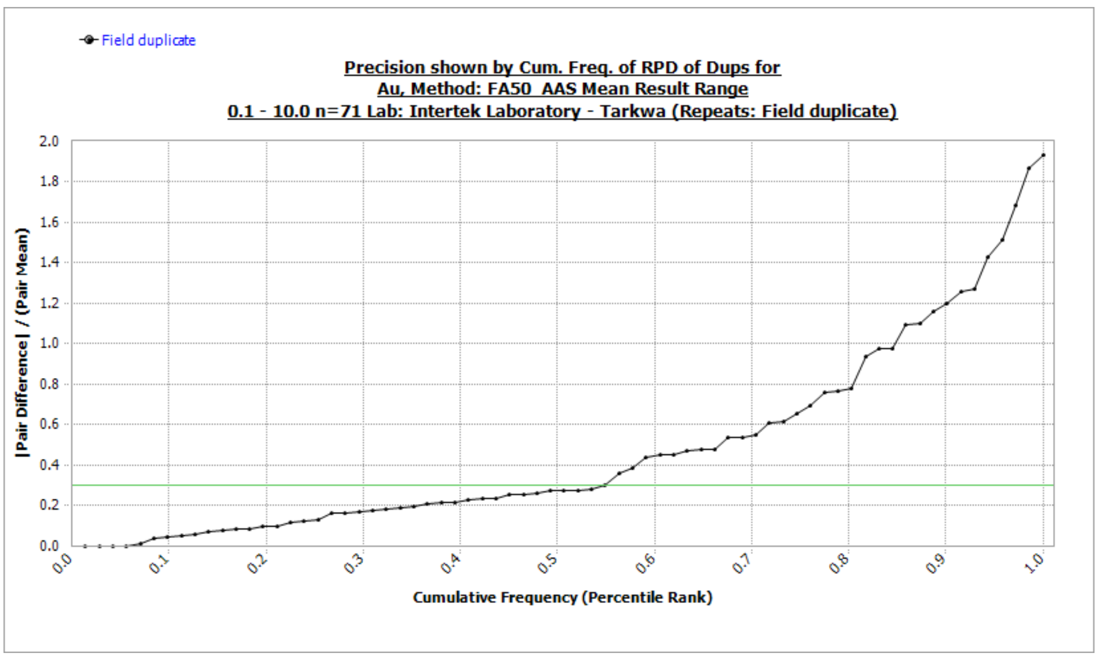


Figure 11-3 Half Absolute Relative Difference (HARD) Plot of Nkran Field Duplicates from Exploration

Primary Laboratory Quality Control Insertions

- Intertek lab typically includes 4% pulp duplicate/re-split "checks" in each batch. Original results and pulp duplicate results generally compare very well for grades below 7 g/t.

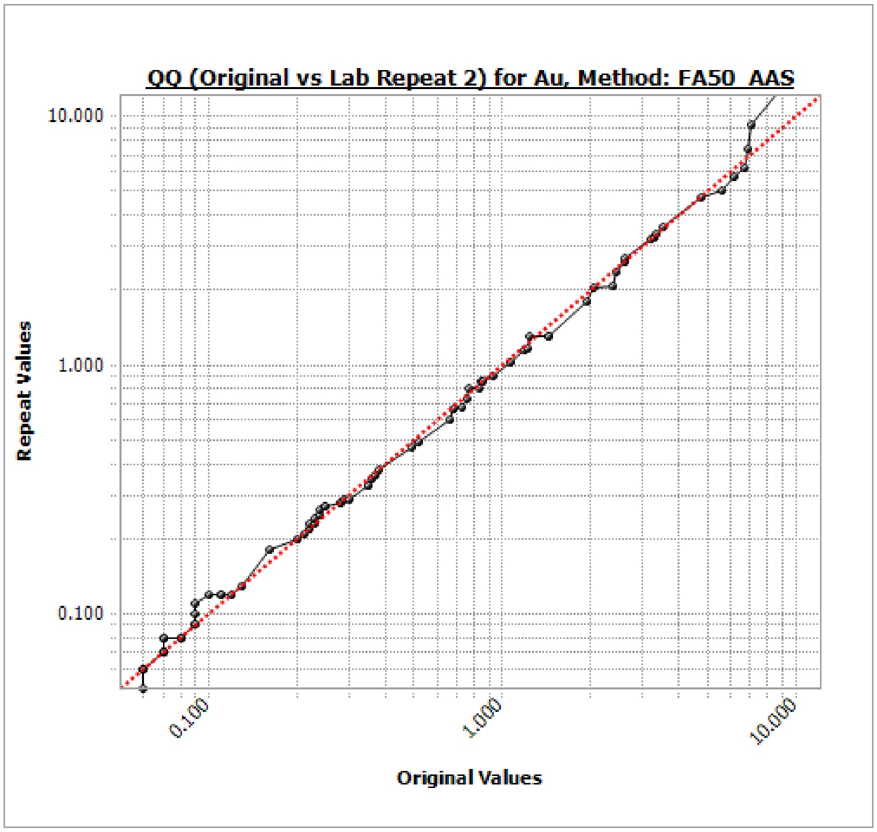


Figure 11-4 QQ Plot of Nkran Pulp Duplicates From Exploration

Between Laboratory Bias

- Ninety umpire samples originally assayed by Intertek Kumasi, were sent to ALS to check lab performance. No bias was noted.

Samples from the 2020 Nkran program show no significant cross contamination, systematic assay bias or precision issues.

11.2.6.2 Esaase

Twenty exploration holes were drilled in between January 1st and August 23rd, 2021 at Esaase. QC insertion rates for exploration samples are summarized in Table 11-8.

Table 11-8 Esaase QC Samples for the Period 1/01/2021 to 23/08/2021

Reference Material	Number Inserted	Total No of Samples Sent	Percentage of Reference Material (%)
Blanks	523		3.27
CRM	522		3.26
Duplicates	524		3.28
Total	1,569	15,991	9.81

Cross Contamination

- 523 blank samples were submitted to the lab to check contamination during sample preparation. Less than 0.2% of returned values less than ±2 times the standard deviation.
- Figure 11-5 is an example of a Blank control chart.

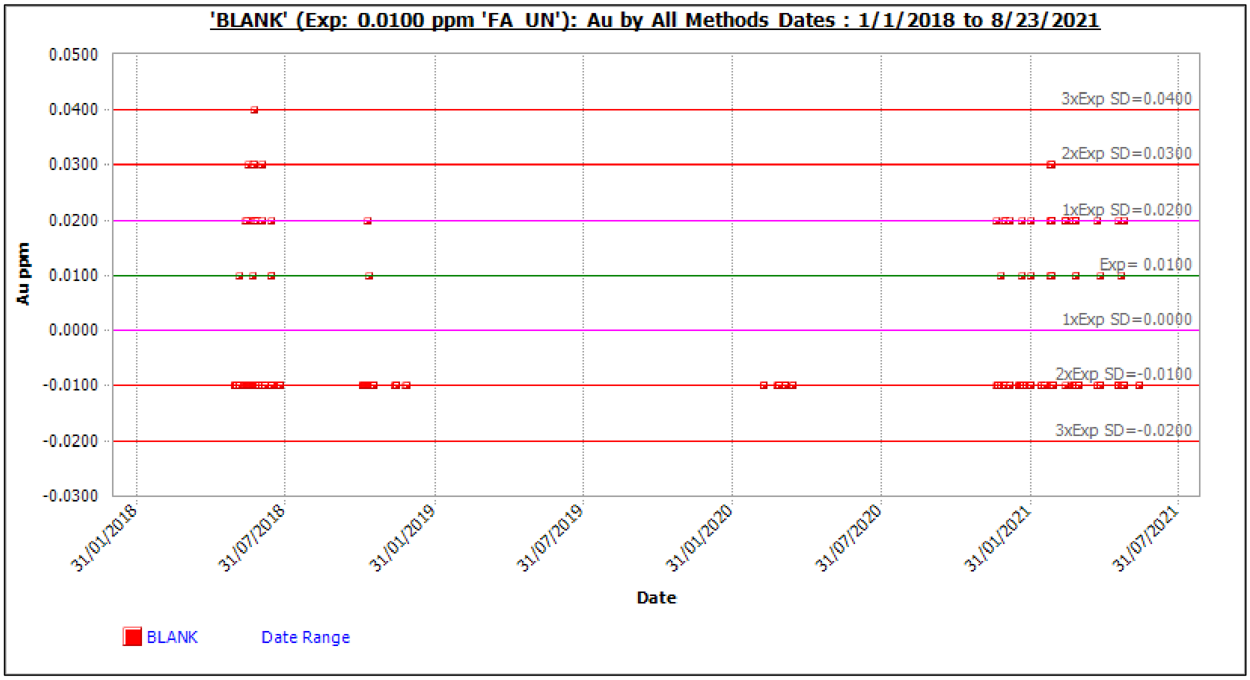


Figure 11-5 Plot of Blanks for Esaase Exploration/Infill Drilling for the Period Noted

Assay Accuracy (Bias)

- CRM's performed well with no significant breaches of the mean ± 3xSD limit in exploration data. Minor samples that did breach were either within waste zones or performed well on rerun. Figure 11-6 illustrates these breaches, circled in red.
- Except for CRM's GLG911-4 and G911-4 no significant bias is evident (Table 11-9). GLG911-4 is a low grade to almost blank level sample (4.65 ppb). G911-4 is likely mislabelled. The low number of analyses for these two prevents meaningful assessment of these results.

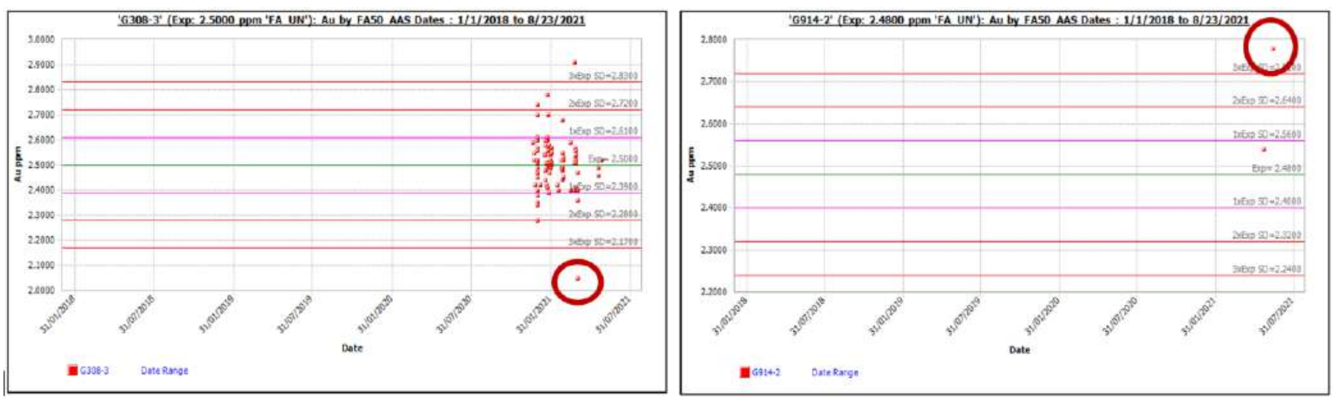


Figure 11-6 Plots of the Performance of CRM's G308-3 and G319-2 for Esaase Exploration Drilling

Table 11-9 Esaase Exploration CRM Results

Au Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Au	SD	CV	Mean Bias
G300-9	FA50_AAS	FA50_AAS	1.5300	0.0600	68	1.5343	0.0668	0.0435	0.28%
G308-3	FA50_AAS	FA50_AAS	2.5000	0.1100	87	2.5111	0.1074	0.0428	0.45%
G311-5	FA50_AAS	FA50_AAS	1.3200	0.0600	79	1.3552	0.0460	0.0340	2.67%
G317-2	FA50_AAS	FA50_AAS	12.9700	0.4100	47	12.4906	0.4373	0.0350	-3.70%
G901-3	FA50_AAS	FA50_AAS	2.8700	0.1400	9	2.8600	0.1843	0.0644	-0.35%
G910-1	FA50_AAS	FA50_AAS	1.4300	0.0600	50	1.4280	0.0763	0.0534	-0.14%
G910-6	FA50_AAS	FA50_AAS	3.0900	0.1300	84	3.0944	0.0910	0.0294	0.14%
G912-2	FA50_AAS	FA50_AAS	2.5100	0.1500	9	2.4767	0.0731	0.0295	-1.33%
G914-10	FA50_AAS	FA50_AAS	10.2600	0.3800	13	10.4792	0.4156	0.0397	2.14%
G914-6	FA50_AAS	FA50_AAS	3.2100	0.1200	76	3.1864	0.1252	0.0393	-0.73%

*Note: * No systematic bias noted; SD – Standard deviation; CV – Coefficient of variation; CRM – certified reference material*

Sample Precision

- 524 Field Duplicates were collected.
- Figure 11-7 shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Esaase, with warning set to 15% variation limit.
- Figure 11-8 shows that nearly 55% of the paired filed duplicates had an absolute relative difference of less than 30%, typical for field duplicate gold analysis.

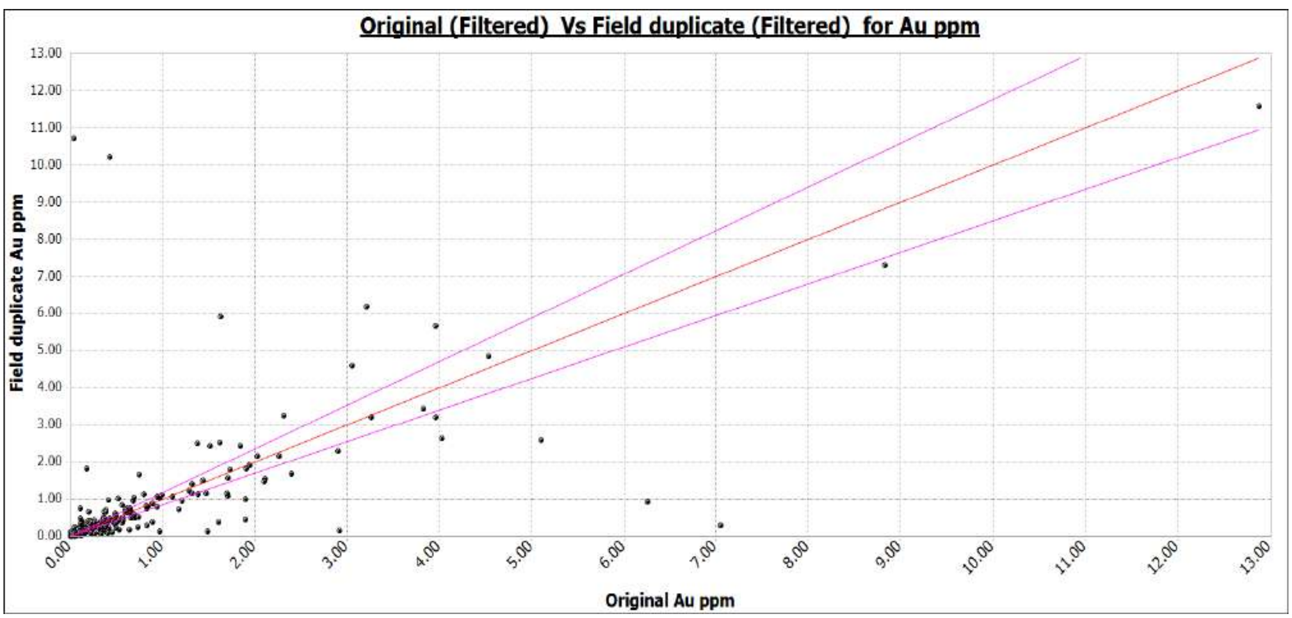


Figure 11-7 Scatter Plot of Original vs Field Duplicates for Esaase Exploration/Infill Drilling

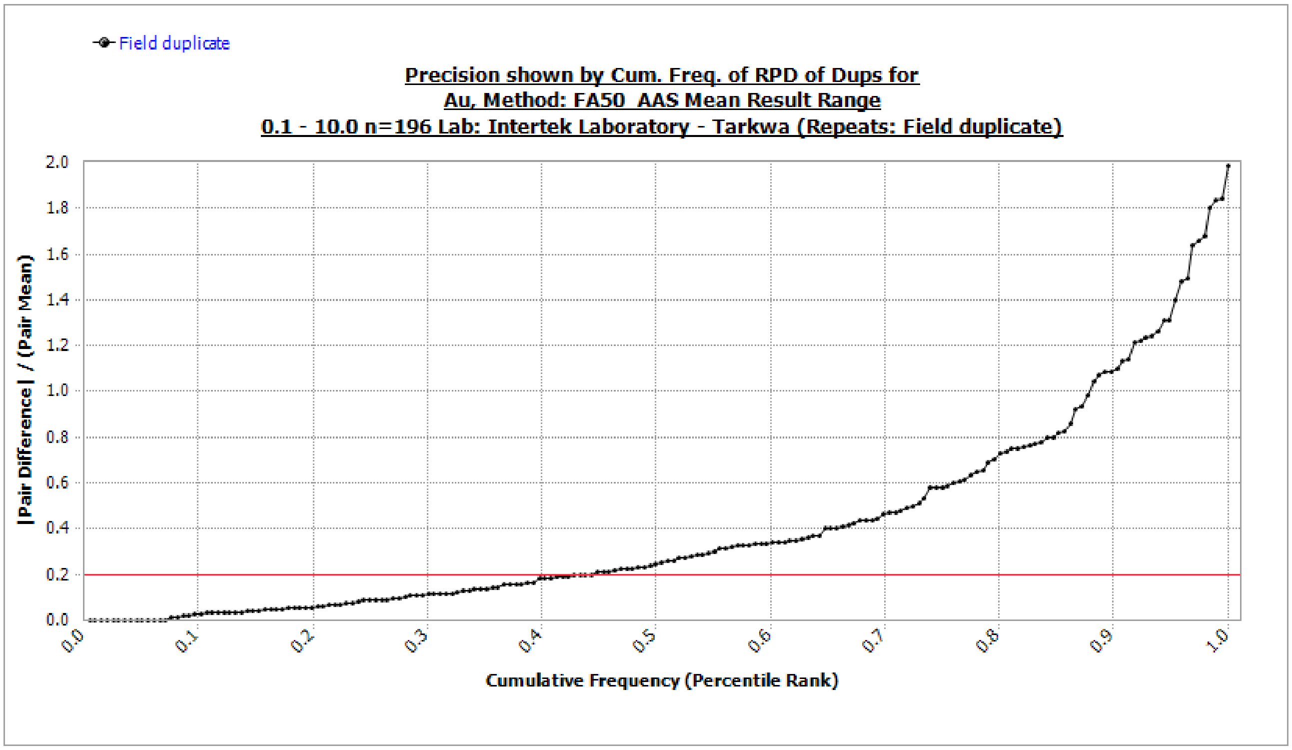


Figure 11-8 HARD Plot of Original vs Field Duplicates for Esaase Exploration/Infill Drilling

Between Laboratory Bias

- No umpire samples were submitted for the Esaase infill program.

Primary Laboratory Quality Control Insertions

- Intertek lab typically includes 4% pulp duplicate/re-split “checks” in each batch. Original results and pulp duplicate results generally compare very well for grades below 7 g/t.

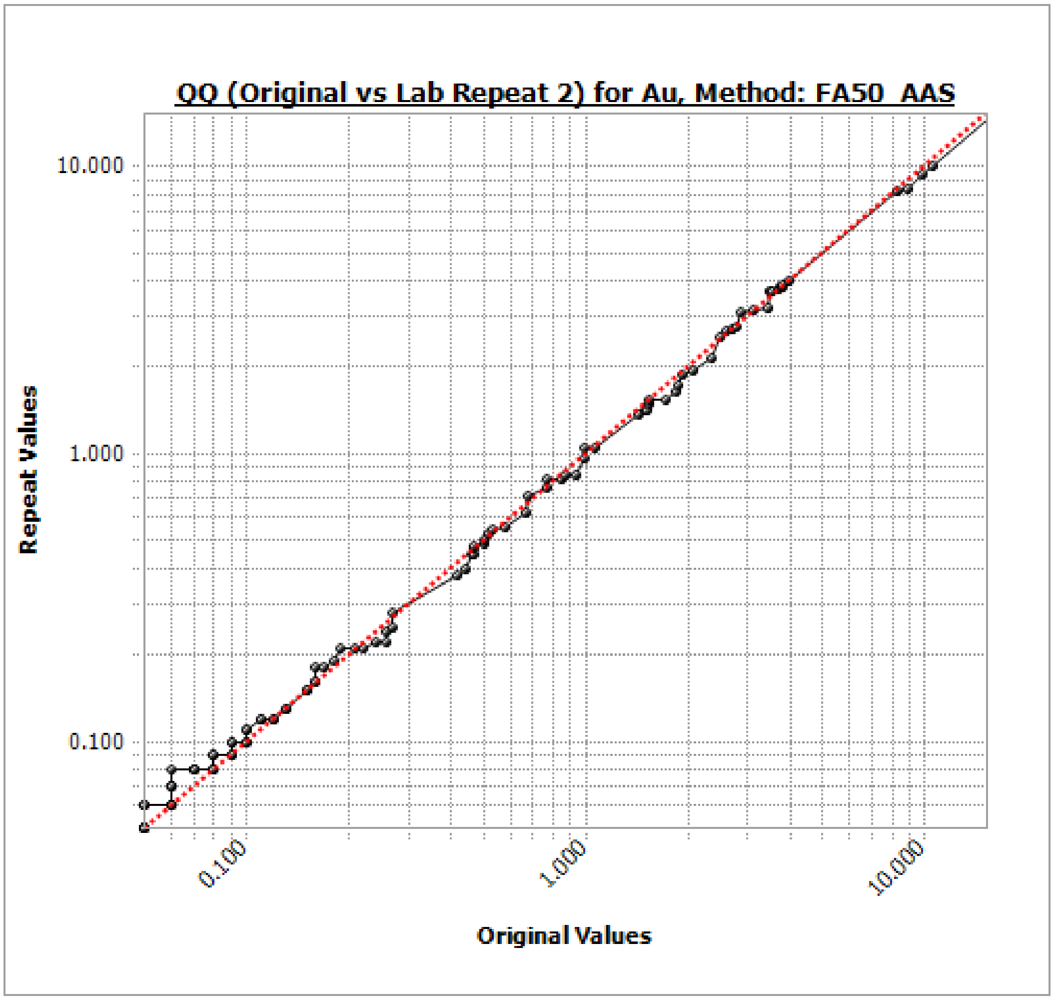


Figure 11-9 QQ Plot of Original vs Pulp Duplicates for Esaase Exploration/Infill Drilling

Samples from the 2020 Esaase program show no significant cross contamination, systematic assay bias or precision issues.

Esaase Grade Control QC

Grade control samples were used in 2021 Esaase resource estimation to a limited extent. The QP responsible for Esaase resource model did a thorough review of statistical and spatial distribution of the GC data in comparison with exploration data, and concluded that the GC data was suitable for global resource estimation and short-term mine planning may benefit from the use of GC data in the grade estimation. GC data was used only in the first pass of grade estimation with a maximum of 40 meters range of influence. More details and relevant GC data assessment are presented in Esaase section of Chapter 14.

Table 11-10 Esaase GC Sample Statistics for the Period of 20/11/2019 to 30/10/2021

Laboratories	ASANKO LAB
No. of Batches	2,895
No. of DH Samples	460,048
No. of QC Samples	31,082 (6.8%)
No. of Standard Samples	52,239 (11.4%)

GC samples were assayed at the AGM laboratory by leachwell bottle roll for oxide material and fire assay for fresh material.

GC Cross Contamination

A significant portion of the results returned greater than 2 times the lower detection limit suggesting the blank being used may not be satisfactorily devoid in gold mineralization or a sample preparation issue in the laboratory.

Figure 11-10 is an example of a Blank control chart

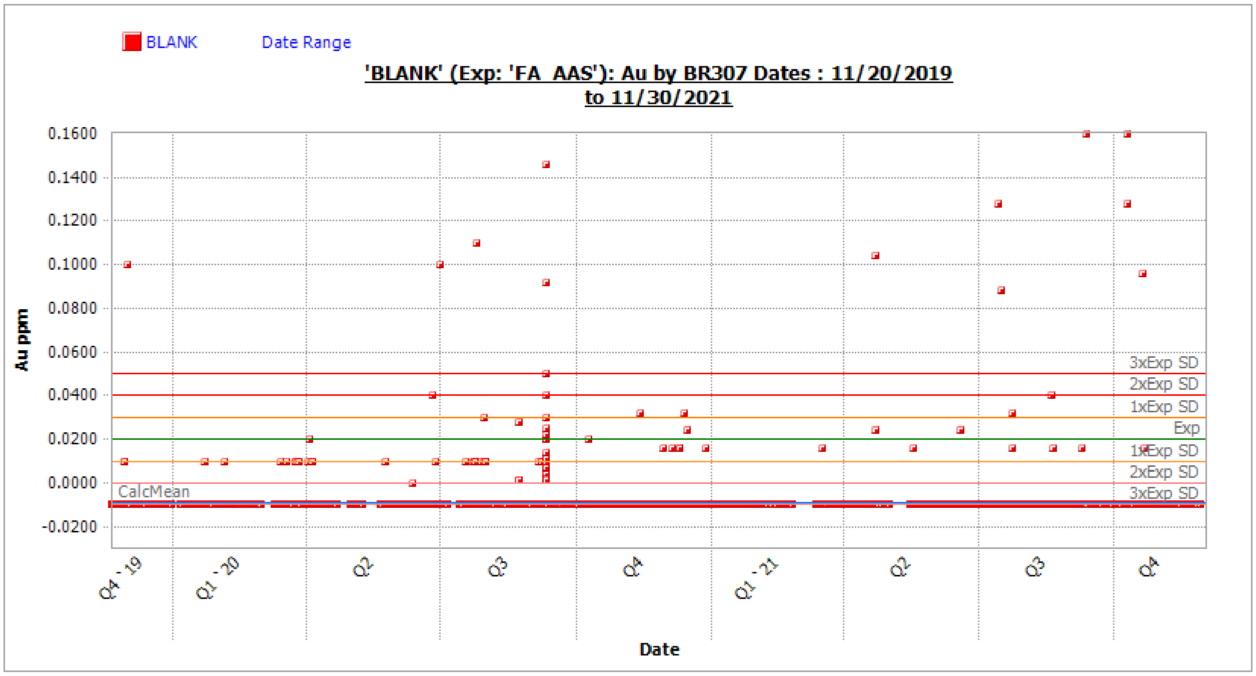
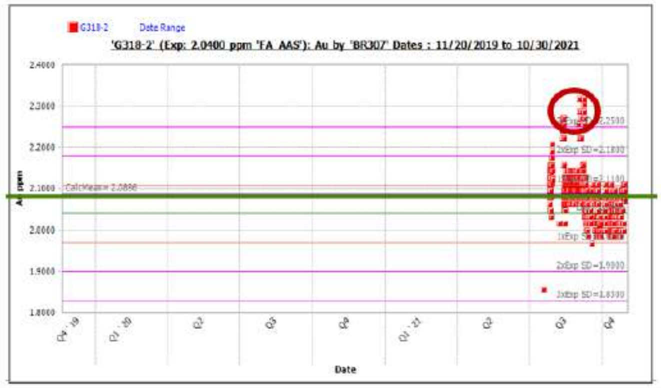


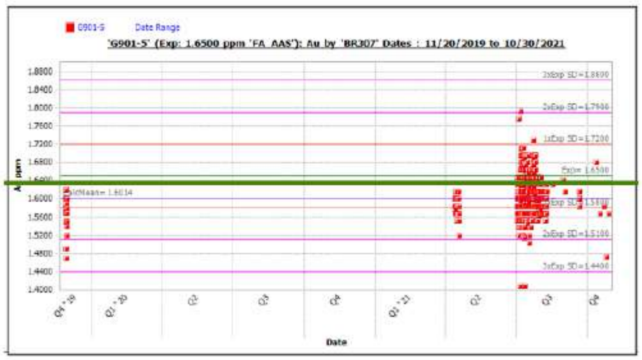
Figure 11-10 Plot of Blanks for Esaase Grade Control Drilling for the Period Noted

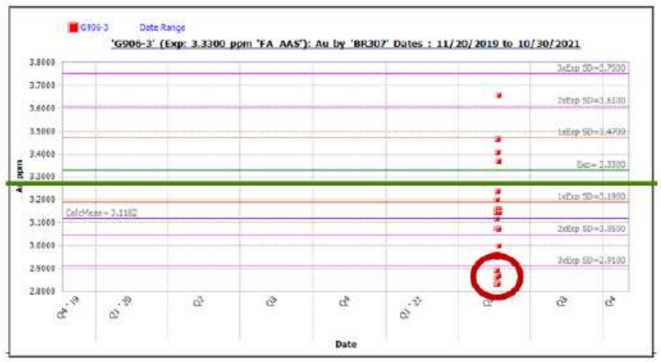
GC Assay Accuracy (Bias)

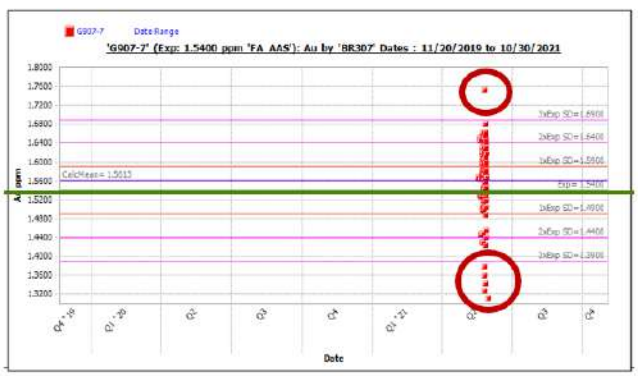
- A significant number of breaches of mean ± 3SD for grade control samples noted across a range of CRM materials, throughout the time period. These are illustrated in Figure 11-11 below and circled in bold red.
- No significant bias relative to the expected mean grade is evident for most CRMs (Table 11-11). Two CRMs indicate a significant high bias relative to the expected mean grade for very high grades. Two CRMs indicate a significant low and high biases relative to the expected mean grade near 0.8 and 0.9 g/t.

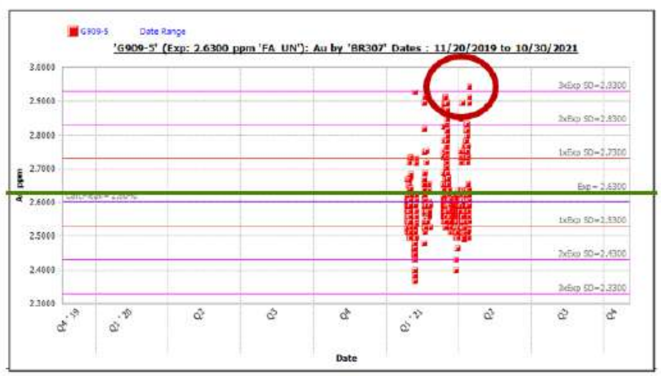

'G313-4' (Exp: 2.0000 ppm 'FA AAS'): Au by 'BR307' Dates : 11/20/2019 to 10/30/2021
Date

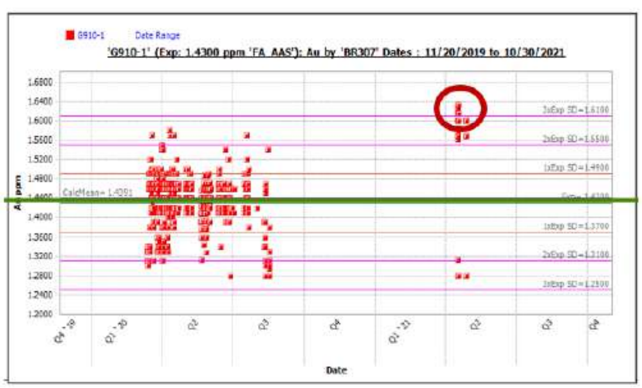

'G318-2' (Exp: 2.0400 ppm 'FA AAS'): Au by 'BR307' Dates : 11/20/2019 to 10/30/2021
Date

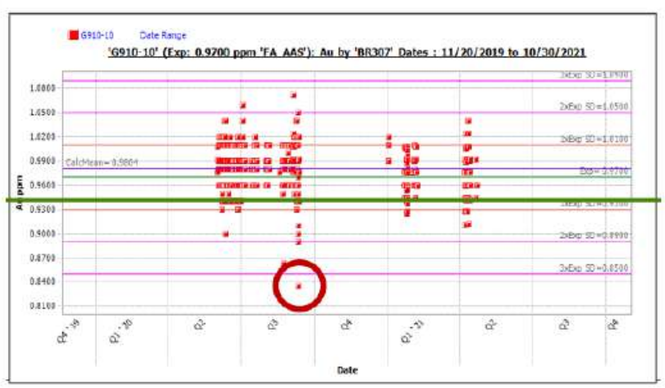

'G901-5' (Exp: 1.6500 ppm 'FA AAS'): Au by 'BR307' Dates : 11/20/2019 to 10/30/2021
Date


'G906-3' (Exp: 3.3300 ppm 'FA AAS'): Au by 'BR307' Dates : 11/20/2019 to 10/30/2021
Date


'G907-7' (Exp: 1.5400 ppm 'FA AAS'): Au by 'BR307' Dates : 11/20/2019 to 10/30/2021
Date


'G909-5' (Exp: 2.6300 ppm 'FA_UN'): Au by 'BR307' Dates : 11/20/2019 to 10/30/2021
Date


'G910-1' (Exp: 1.4300 ppm 'FA AAS'): Au by 'BR307' Dates : 11/20/2019 to 10/30/2021
Date


'G910-10' (Exp: 0.9700 ppm 'FA AAS'): Au by 'BR307' Dates : 11/20/2019 to 10/30/2021
Date

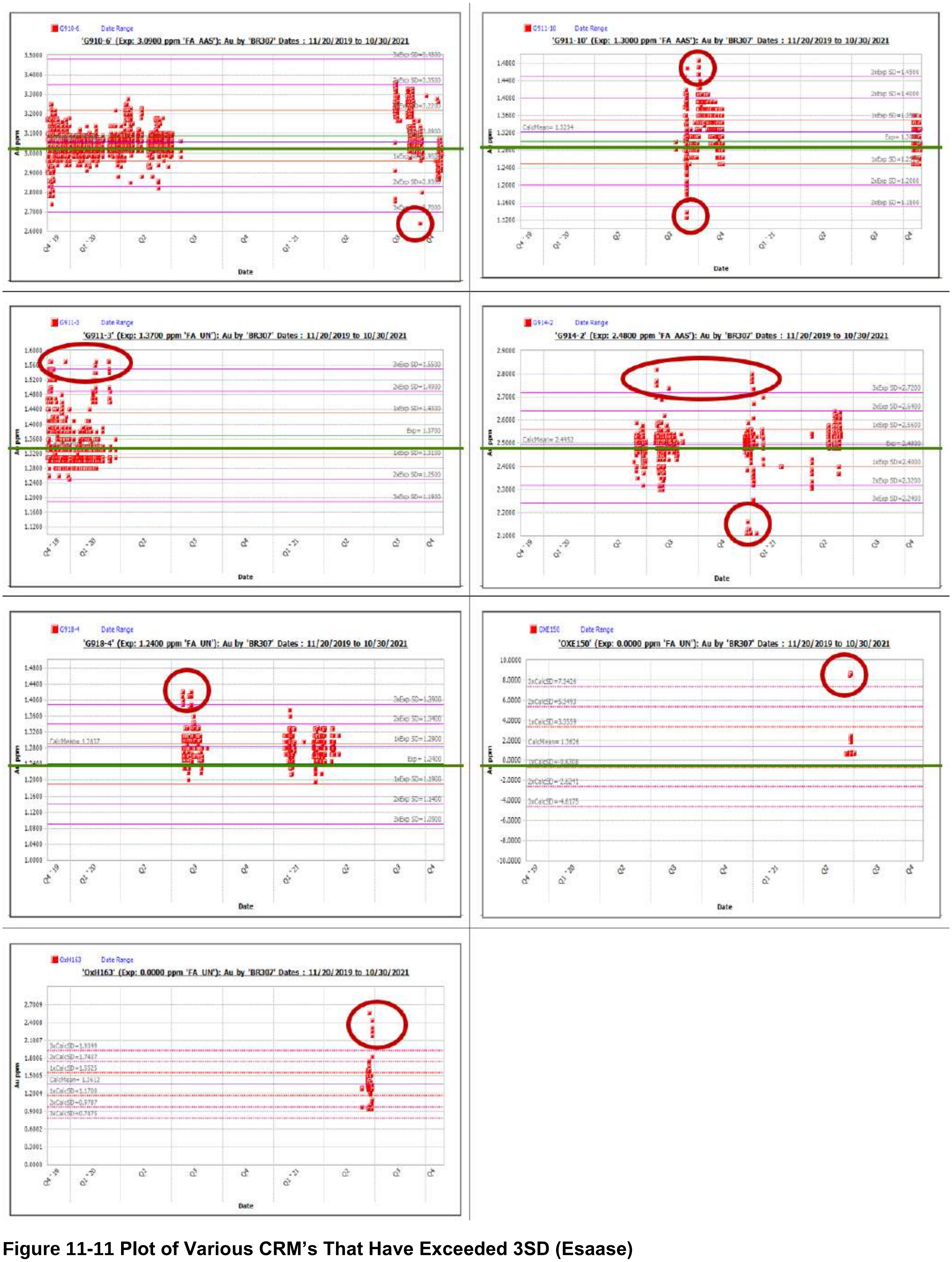


Figure 11-11 Plot of Various CRM's That Have Exceeded 3SD (Esaase)

Table 11-11 Esaase Grade Control CRM Results (Method BR307)

Au Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Au	SD	CV	Mean Bias
G300-9	BR307	BR307	1.5300	0.0600	57	1.5791	0.0462	0.0293	3.21%
G302-3	BR307	BR307	2.3300	0.1200	154	2.3913	0.2626	0.1098	2.63%
G308-3	BR307	BR307	2.5000	0.1100	125	2.5570	0.0476	0.0186	2.28%
G311-5	BR307	BR307	1.3200	0.0600	151	1.3337	0.0669	0.0502	1.04%
G311-8	BR307	BR307	1.5700	0.0800	1,013	1.5653	0.1023	0.0653	-0.30%
G313-4	BR307	BR307	2.0000	0.0800	1,327	2.0962	0.0785	0.0375	4.81%
G314-2	BR307	BR307	0.9900	0.0400	1,650	1.0006	0.2240	0.2239	1.08%
G315-2	BR307	BR307	0.9800	0.0400	1,360	1.0033	0.1404	0.1399	2.38%
G318-2	BR307	BR307	2.0400	0.0700	1,123	2.0731	0.1477	0.0713	1.62%
G396-8	BR307	BR307	4.8200	0.2900	45	4.3610	0.9221	0.2114	-9.52%
G900-7	BR307	BR307	3.2200	0.1600	21	3.1889	0.3067	0.0962	-0.97%
G901-5	BR307	BR307	1.6500	0.0700	1,215	1.5996	0.1200	0.0750	-3.06%
G906-3	BR307	BR307	3.3300	0.1400	32	2.9647	0.3576	0.1206	-10.97%
G907-7	BR307	BR307	1.5400	0.0500	150	1.6881	0.4767	0.2824	9.62%
G909-5	BR307	BR307	2.6300	0.1000	712	2.5687	0.0674	0.0262	-2.33%
G910-1	BR307	BR307	1.4300	0.0600	1,323	1.4388	0.0575	0.0399	0.61%
G910-10	BR307	BR307	0.9700	0.0400	1,134	1.0064	0.2295	0.2280	3.75%
G910-2	BR307	BR307	0.9000	0.0500	468	1.0247	0.2886	0.2817	13.85%
G910-6	BR307	BR307	3.0900	0.1300	3,946	3.0461	0.1722	0.0565	-1.42%
G911-10	BR307	BR307	1.3000	0.0500	1,831	1.3216	0.0845	0.0639	1.66%
G911-3	BR307	BR307	1.3700	0.0600	1,205	1.3466	0.1514	0.1125	-1.71%
G912-2	BR307	BR307	2.5100	0.1100	1,316	2.5415	0.1237	0.0487	1.25%
G914-2	BR307	BR307	2.4800	0.0800	1,202	2.4845	0.1404	0.0565	0.18%
G916-10	BR307	BR307	2.8100	0.1400	1,505	2.6492	0.4006	0.1512	-5.72%
G918-4	BR307	BR307	1.2400	0.0500	1,187	1.3143	0.2676	0.2036	5.99%
G998-3	BR307	BR307	0.8100	0.0500	830	0.7014	0.0888	0.1266	-13.41%

Note: SD – Standard deviation; CV – Coefficient of variation; CRM – certified reference material

GC Sample Precision

- Figure 11-12 shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Esaase, with warning set to 15% variation limit.
- Figure 11-13 illustrates a QQ plot shows reasonable agreement between distributions of field duplicate pairs

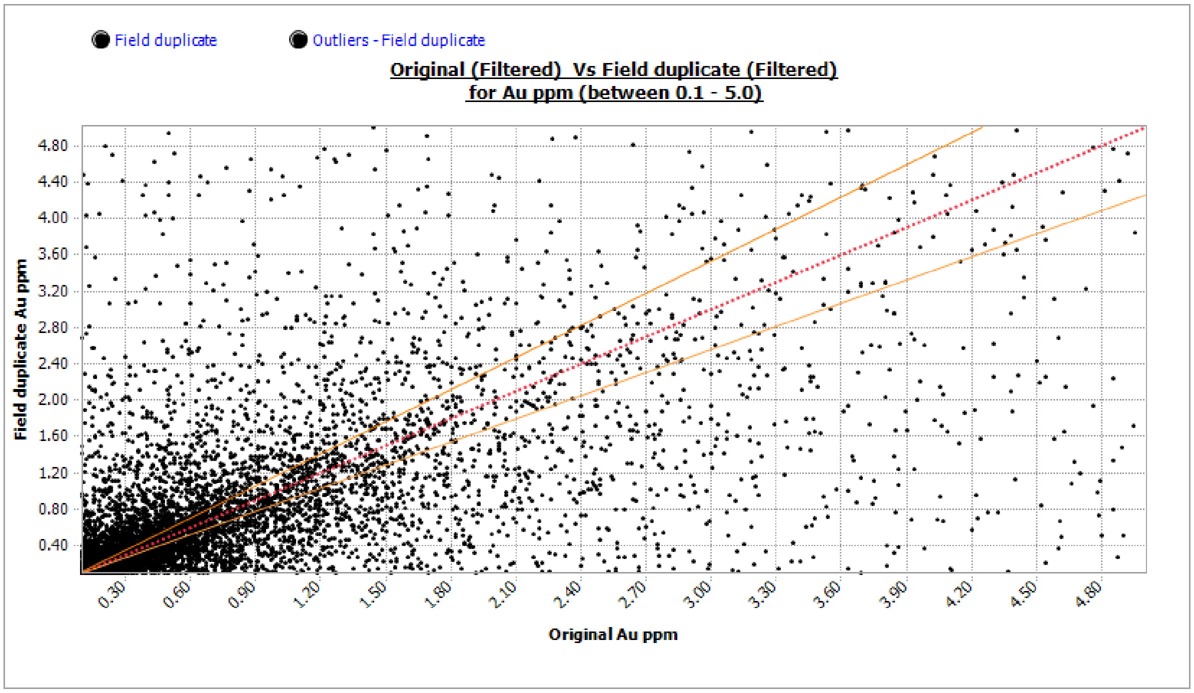


Figure 11-12 Scatter Plot of Original vs Field Duplicates for Esaase Grade Control Drilling

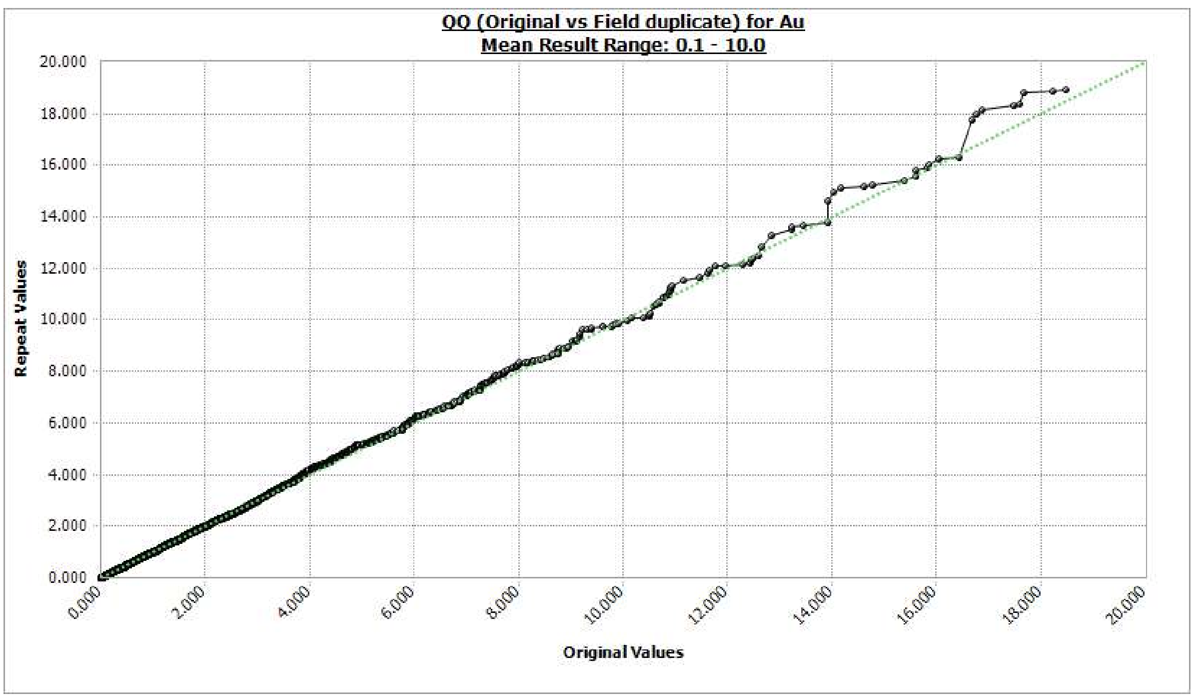


Figure 11-13 QQ Plot of Original vs Field Duplicates for Esaase GC RC Drilling

Low ratio of blanks to samples in GC RC data is of concern, as is the number of CRM breaches above and below 3xSD. Based on a thorough review of statistical and spatial distribution of the GC data in comparison with exploration data, the wide scatter of values in GC RC duplicate data is not considered a material issue in the context of the deposits resource estimation.

11.2.6.3 Miradani North

Forty-six holes were drilled between November 20th, 2019 to October 30th, 2021 at Miradani North. QC samples insertion rates are summarized in Table 11-12. This dataset represents the entire dataset used to support grade estimation at Miradani North.

Table 11-12 Miradani North QAQC Samples for Period 20/11/2019 to 10/30/2021

Reference Material	Number Inserted	Total No of Samples Sent	Percentage of Reference Material (%)
Blanks	569		3.25
CRM	567		3.24
Duplicates	731		4.17
Total	**1,867**	**17,508**	**10.66**

Cross Contamination

- A total of 569 BLANK samples were submitted to the lab.
- All blanks passed at -1 & +3 standard deviations.
- Figure 11-14 is an example of a Blank control chart.

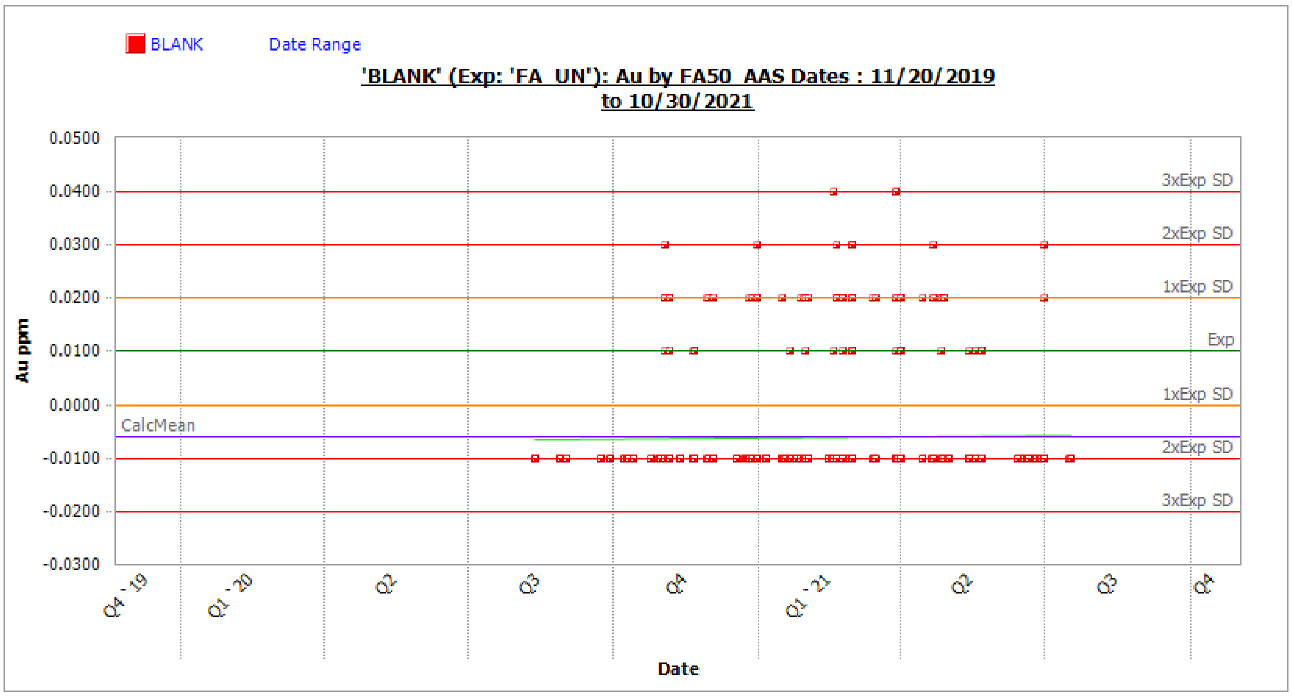


Figure 11-14 Plot of Blanks for Miradani North Exploration Drilling for the Period Noted

Assay Accuracy (Bias)

- 567 CRM were inserted
- CRM's performed well with no significant breaches of the mean ± 3SD limit in exploration data. Minor samples that did breach were either within waste zones or performed well on rerun. A small number of failures noted, all within waste zones (see Figure 11-15 and Figure 11-16 with breaches circled in red)
- Table 11-13 shows no significant bias is evident.

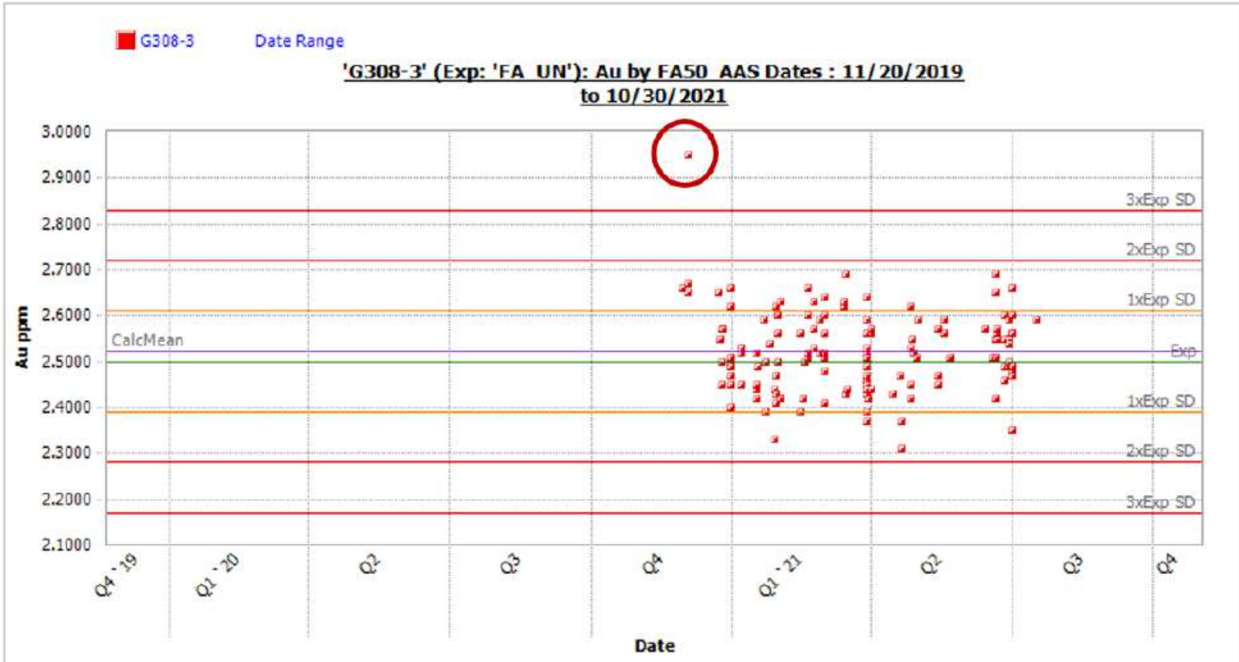


Figure 11-15 Plot of CRM Standard Performance for G308-3 for Miradani North Exploration

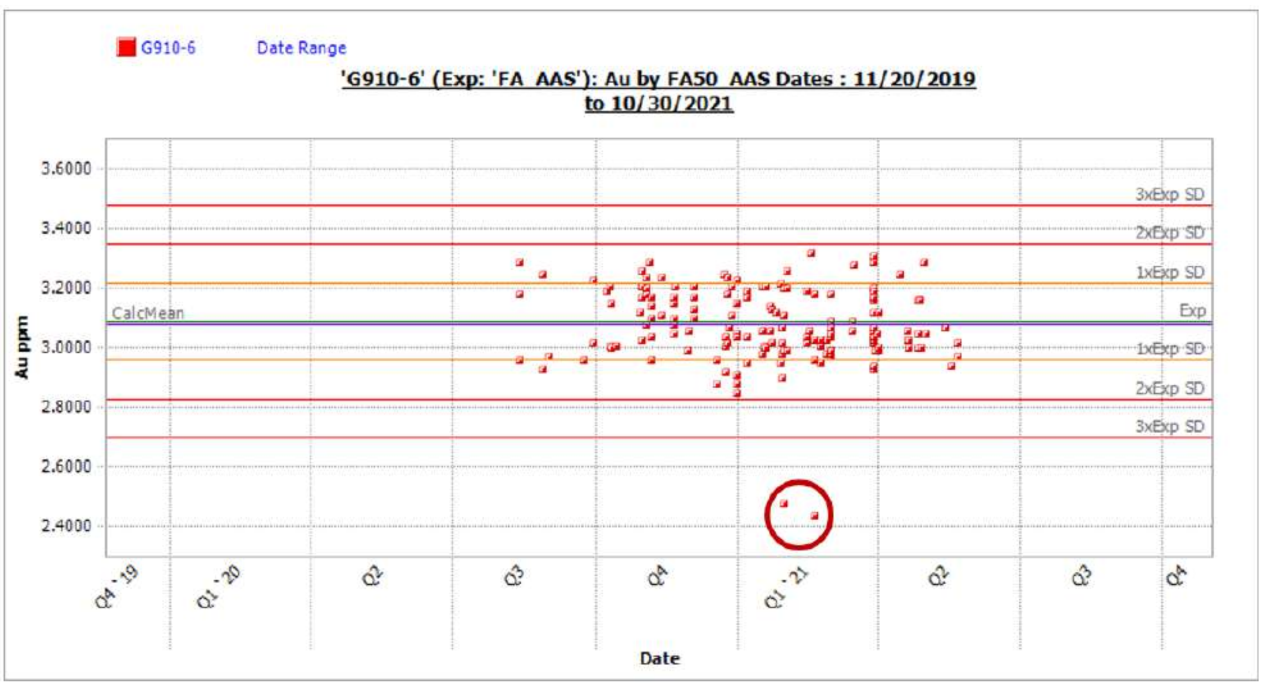


Figure 11-16 Plot of CRM Performance for G910-6 for Miradani North Exploration

Table 11-13 Miradani North CRM Results Showing Mean Bias

Au Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp	Exp	Exp SD		Mean Au	SD	CV	Mean
G300-9	FA50_AAS	FA50_AAS	1.5300	0.0600	121	1.5389	0.0595	0.0387	0.58%
G308-3	FA50_AAS	FA50_AAS	2.5000	0.1100	134	2.5222	0.0893	0.0354	0.89%
G311-8	FA50_AAS	FA50_AAS	1.5700	0.0800	47	1.5800	0.0600	0.0380	0.64%
G317-2	FA50_AAS	FA50_AAS	12.9700	0.4100	19	13.0188	0.5783	0.0444	0.38%
G910-6	FA50_AAS	FA50_AAS	3.0900	0.1300	157	3.0776	0.1260	0.0409	-0.40%
G914-10	FA50_AAS	FA50_AAS	10.2600	0.3800	71	10.3185	1.0208	0.0989	0.57%
G914-2	FA50_AAS	FA50_AAS	2.4800	0.0800	18	2.5356	0.0713	0.0281	2.24%

Assay Precision

- 731 field duplicate samples were collected to check the sample variability.
- Figure 11-17 below shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Miradani, with warning set to 15% variation limit.
- Figure 11-18 shows that approximately 65% of the paired filed duplicates had an absolute relative difference of less than 30%, good for field duplicate gold analysis.

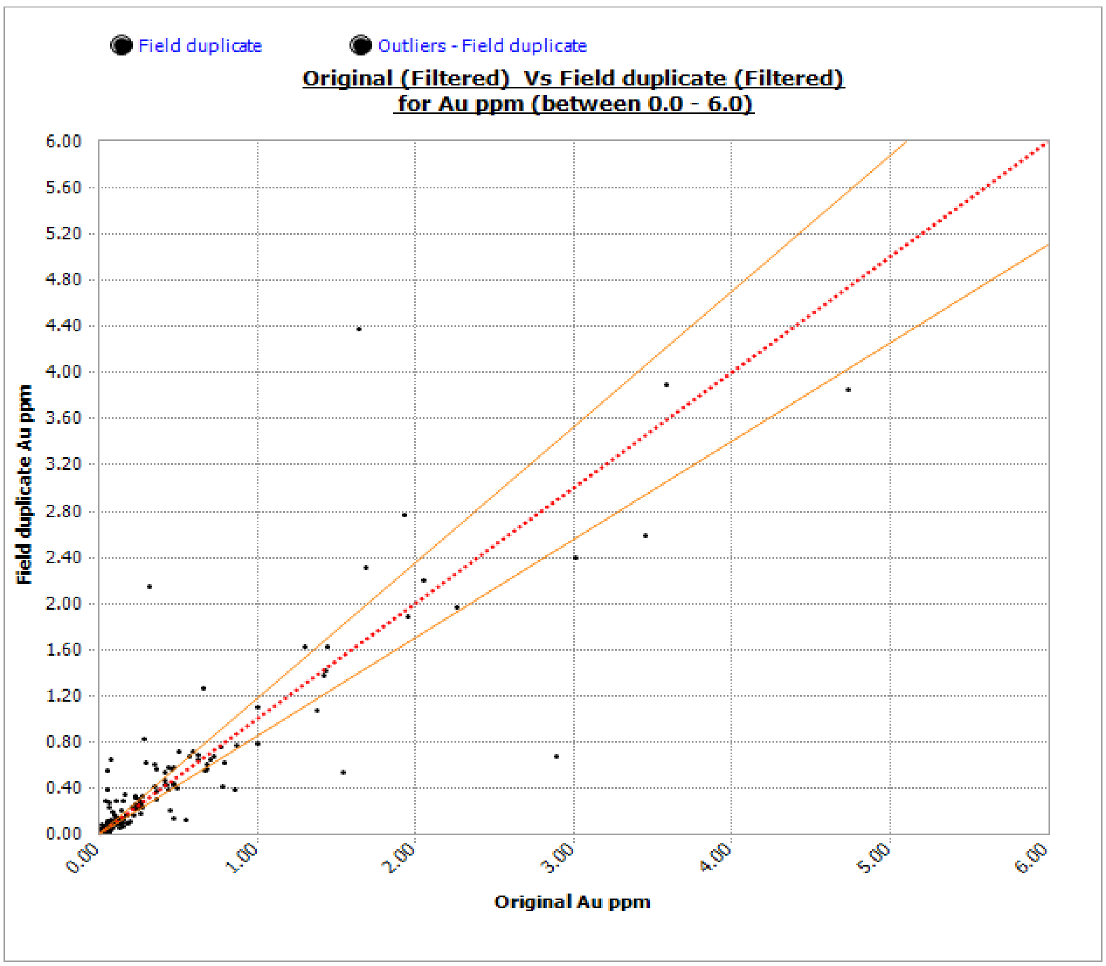


Figure 11-17 Scatter Plot of Originals vs Field Duplicate Samples at Miradani North

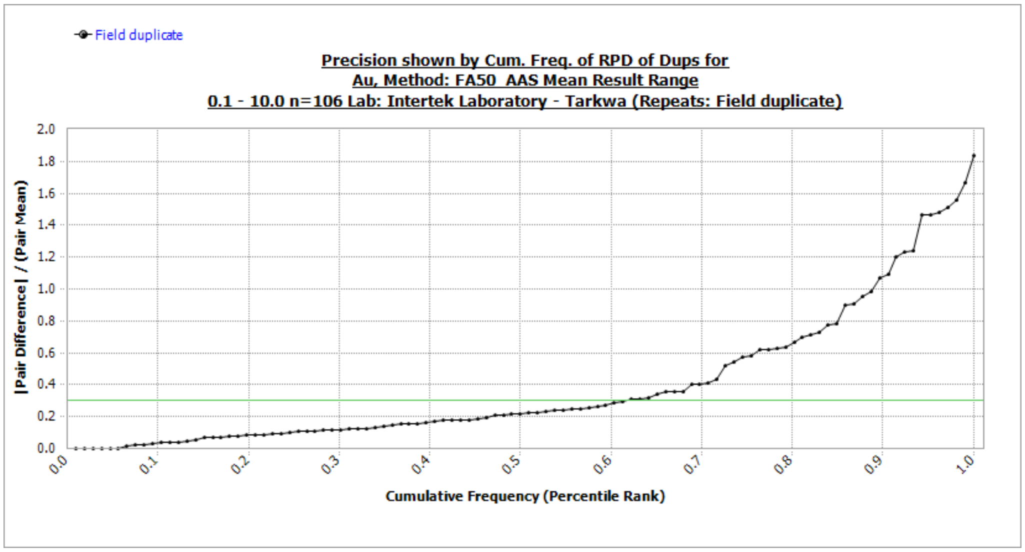


Figure 11-18 HARD Plot for Miradani North

Between Laboratory Bias

- One hundred and twenty-two umpire samples originally assayed by Intertek Kumasi, were sent to ALS to check lab performance. No bias was noted.

Primary Laboratory Quality Control Insertions

- Intertek lab typically includes 4% pulp duplicate/re-split “checks” in each batch. Original results and pulp duplicate results generally compare very well for grades below 7 g/t.

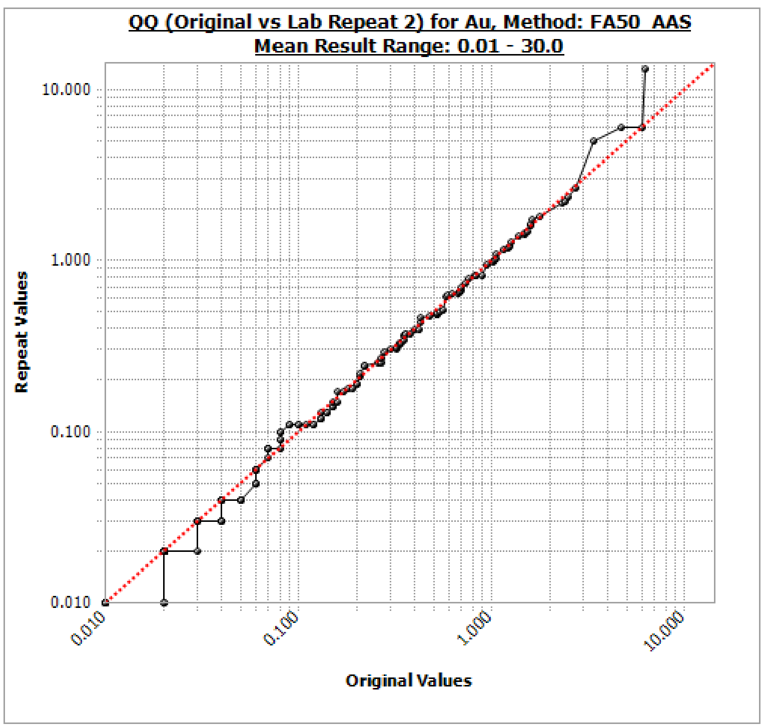


Figure 11-19 QQ Plot For Pulp Duplicates at Miradani North

11.2.6.4 Dynamite Hill

Thirty holes were drilled between July 16th, 2021 to September 7th, 2021 at Dynamite Hill. QC sample insertion rates are summarized in Table 11-14.

Table 11-14 Dynamite Hill QAQC Samples For Period 16/7/2021 to 7/9/2021

Reference Material	Number Inserted	Total No of Samples Sent	Percentage of Reference Material (%)
Blanks	188	-	3.38
CRM	188	-	3.38
Duplicates	188	-	3.38
Total	**564**	**5,554**	**10.14**

Cross Contamination

- There were 188 BLANKS samples submitted to the lab together with original samples
- All blanks passed at -2 and +3 standard deviation
- Figure 11-20 shows an example of a Blank control chart

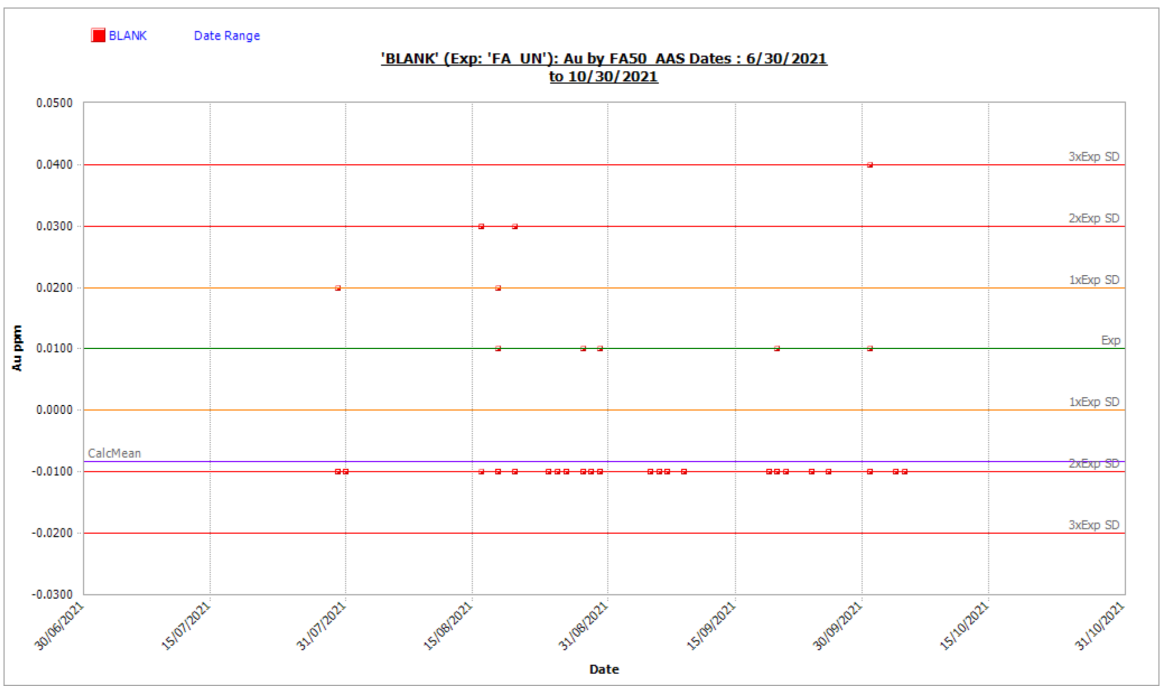


Figure 11-20 Plot of Blanks Performance at Dynamite Hill for the Period Stated

Assay Accuracy (Bias)

- 188 CRM were inserted
- CRM's performed well with no significant breaches of the mean ± 3SD limit in exploration data. Minor samples that did breach were either within waste zones or performed well on rerun. A small number of failures noted, within waste zones as with CRM G308-3 in Figure 11-21 below, with breaches circled in red. The breach in G910-6 (Figure 11-22) was investigated and was suspected to be a case of wrong labelling. This sample falls within a wide waste zone and so was not re-assayed
- Table 11-15 shows no significant bias is evident

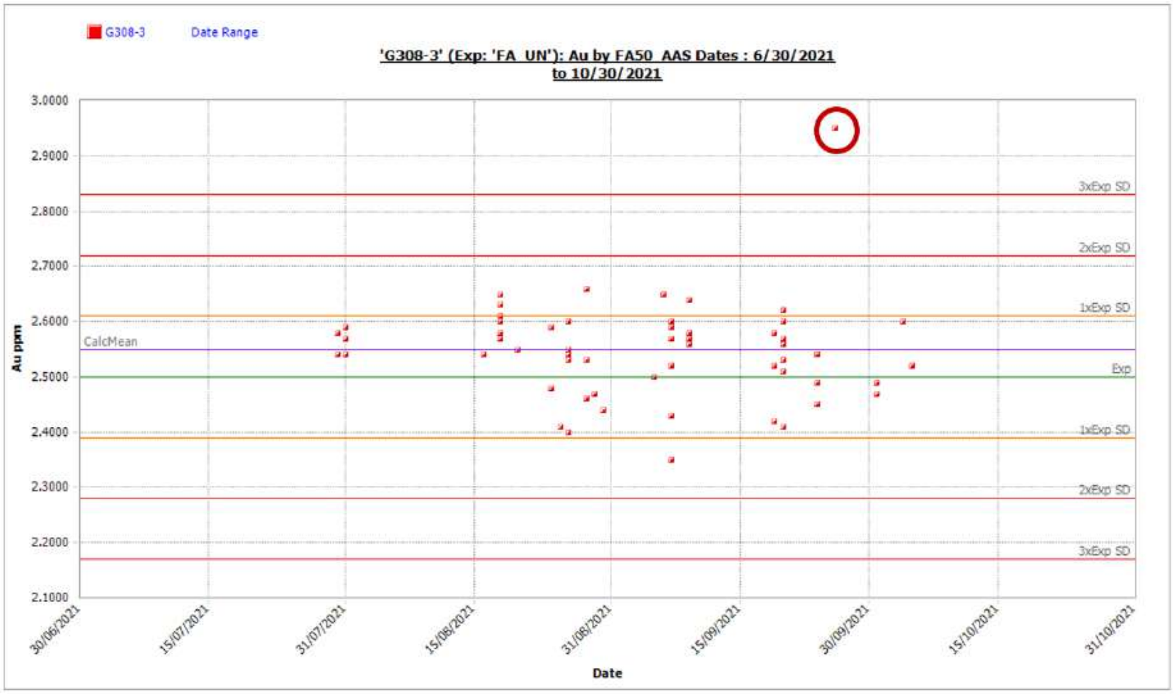


Figure 11-21 Plot of CRM Performance for G308-3 for Dynamite Hill Exploration

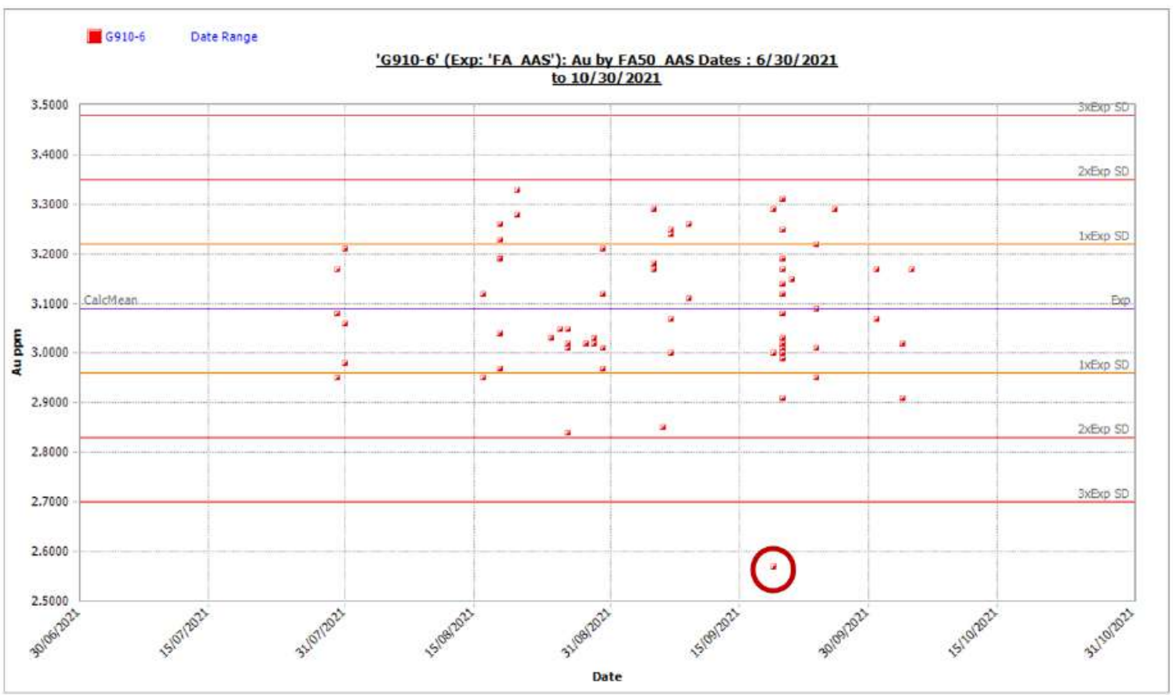


Figure 11-22 Plot of CRM Performance for G910-6 for Dynamite Hill Exploration

Table 11-15 Dynamite Hill CRM Results Showing Mean Bias

Au Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Au	SD	CV	Mean Bias
G300-9	FA50_AAS	FA50_AAS	1.5300	0.0600	11	1.5445	0.0548	0.0355	0.95%
G308-3	FA50_AAS	FA50_AAS	2.5000	0.1100	62	2.5485	0.0861	0.0338	1.94%
G311-8	FA50_AAS	FA50_AAS	1.5700	0.0800	48	1.5648	0.0784	0.0501	-0.33%
G910-6	FA50_AAS	FA50_AAS	3.0900	0.1300	67	3.0899	0.1346	0.0436	0.00%

Assay Precision

- 188 field duplicate samples were collected to check the sample variability.
- Figure 11-23 below shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Dynamite Hill, with warning set to 15% variation limit.
- Figure 11-24 shows that approximately 60% of the paired filed duplicates had an absolute relative difference of less than 30%, good for field duplicate gold analysis.

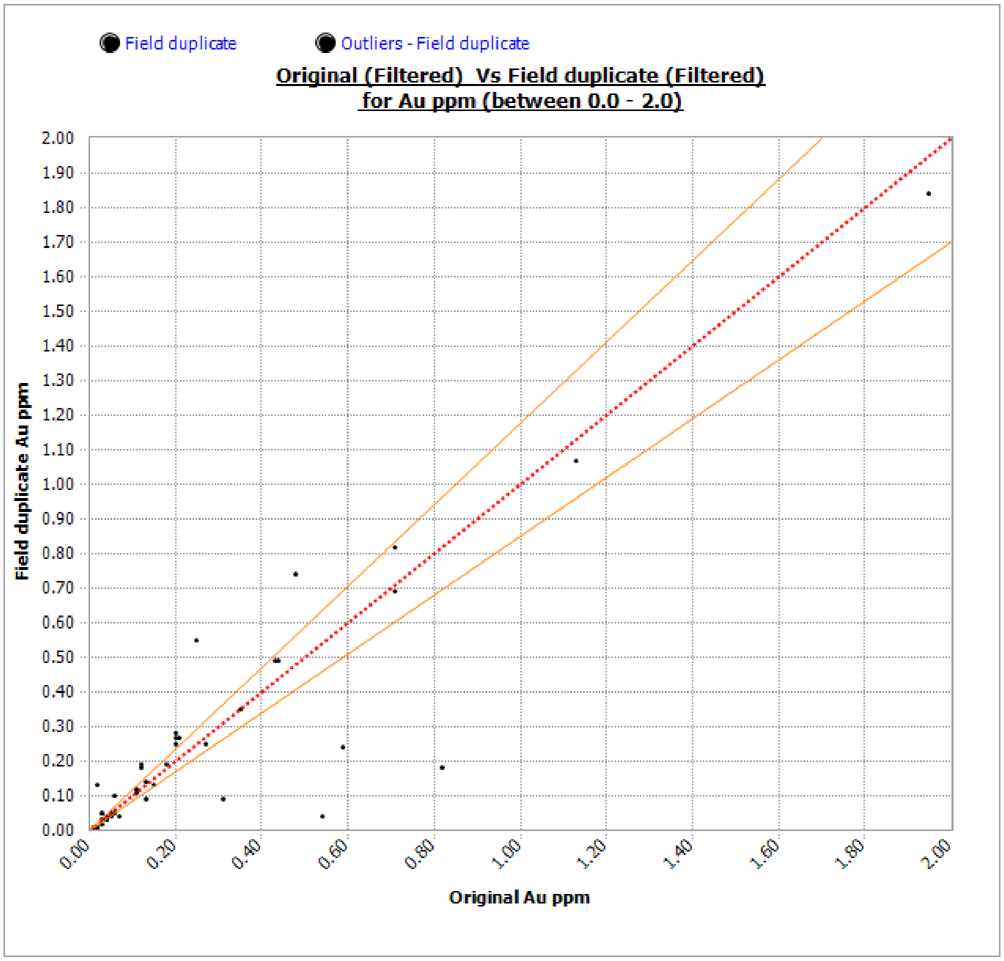


Figure 11-23 Scatter Plot of Duplicate vs Original Performance at Dynamite Hill

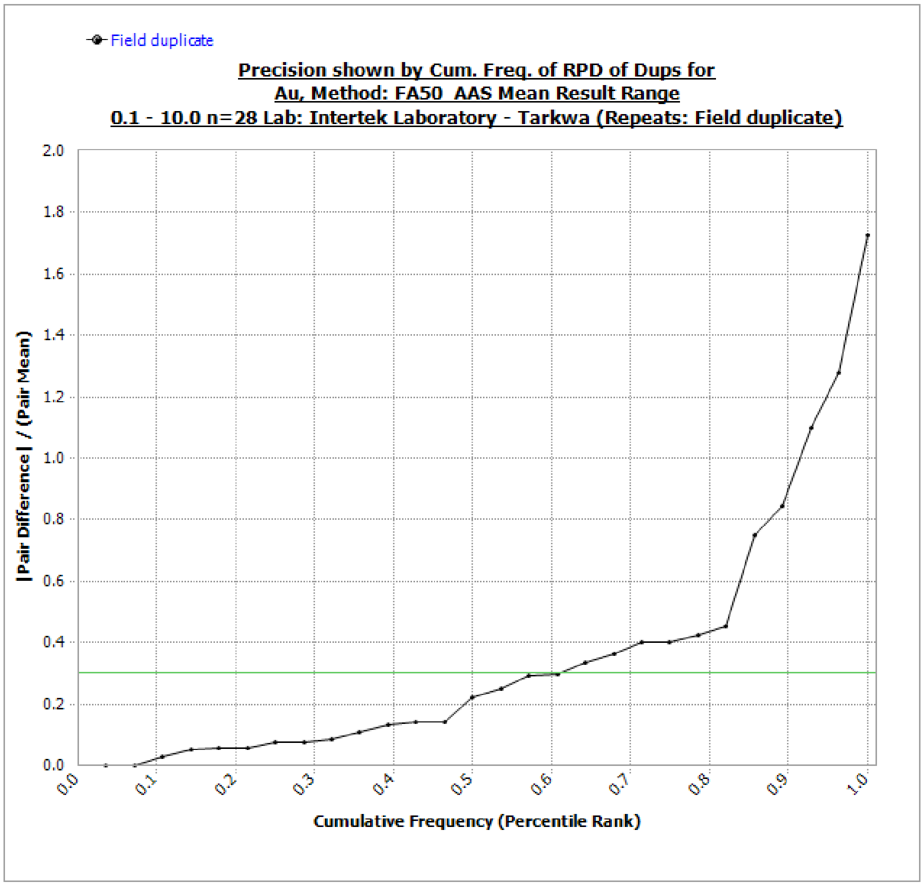


Figure 11-24 HARD Plot Analysis of Duplicate vs Original Performance at Dynamite Hill

Between Laboratory Bias

- No check samples were submitted for this period.

Primary Laboratory Quality Control Insertions

- Not assessed

No material failings were observed with cross contamination or assay accuracy.

11.2.6.5 Akwasiso

A total of 40 exploration holes were drilled at Akwasiso between November 20th, 2019 to October 30th, 2021. QC sample insertion rate are summarized in Table 11-16.

Table 11-16 Akwasiso QAQC Samples For Period 20/11/2019 to 30/10/2021

Reference Material	Number Inserted	Total No of Samples Sent	Percentage of Reference Material (%)
Blanks	214	-	3.19
CRM	220	-	3.28
Duplicates	219	-	3.26
Total	**653**	**6,711**	**9.73**

Cross Contamination

- There were 214 BLANKS samples submitted to the lab together with original samples.

- All blanks passed at ±2 standard deviations.
- Figure 11-25 shows an example of a Blank control chart

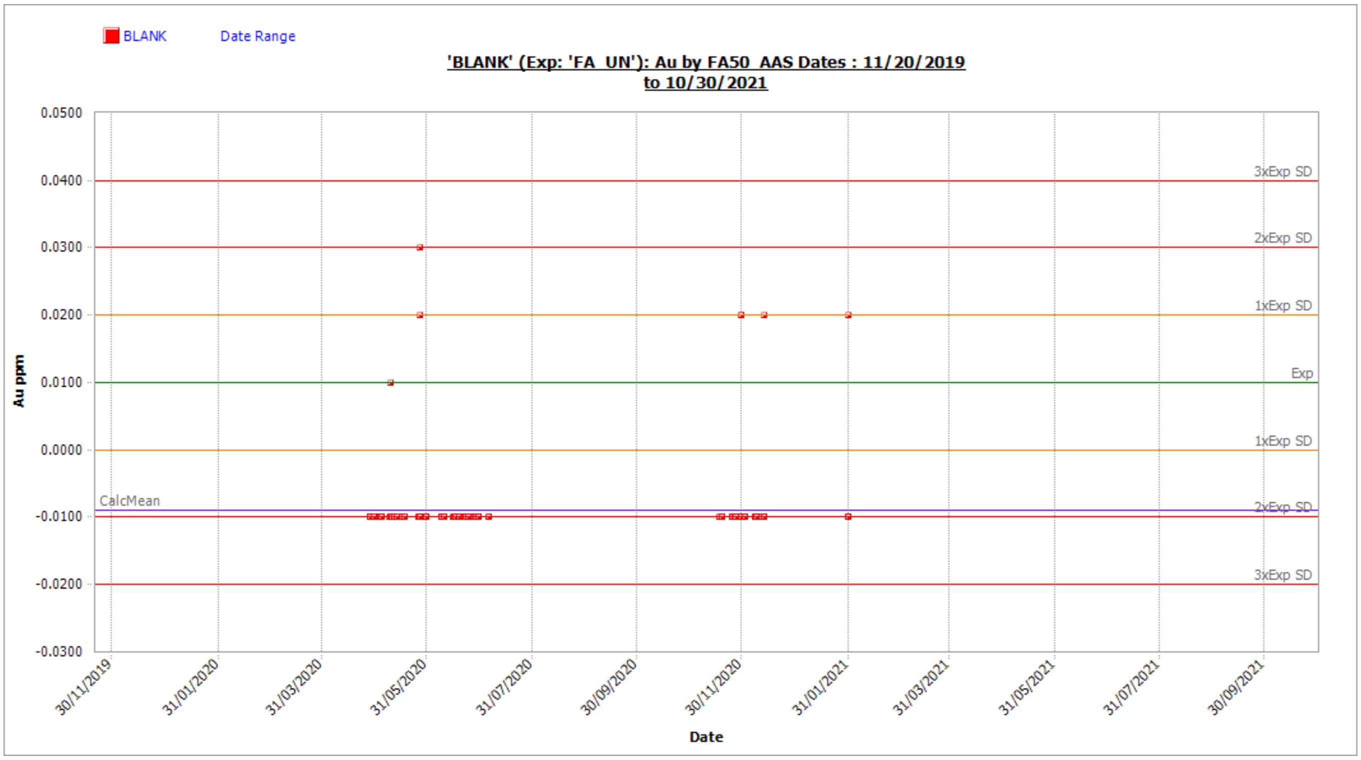


Figure 11-25 Plot of Blanks for Akwasiso Exploration Drilling for the Period Stated

Assay Accuracy (Bias)

- 220 CRM were inserted
- CRM's performed well with no significant breaches of the mean ± 3SD limit in exploration data. Minor samples that did breach were either within waste zones or performed well on rerun. A small number of failures noted, all within waste zones (see Figure 11-26 and Figure 11-27 below that illustrate said breaches, circled in red).
- Table 11-17 shows no significant bias is evident.

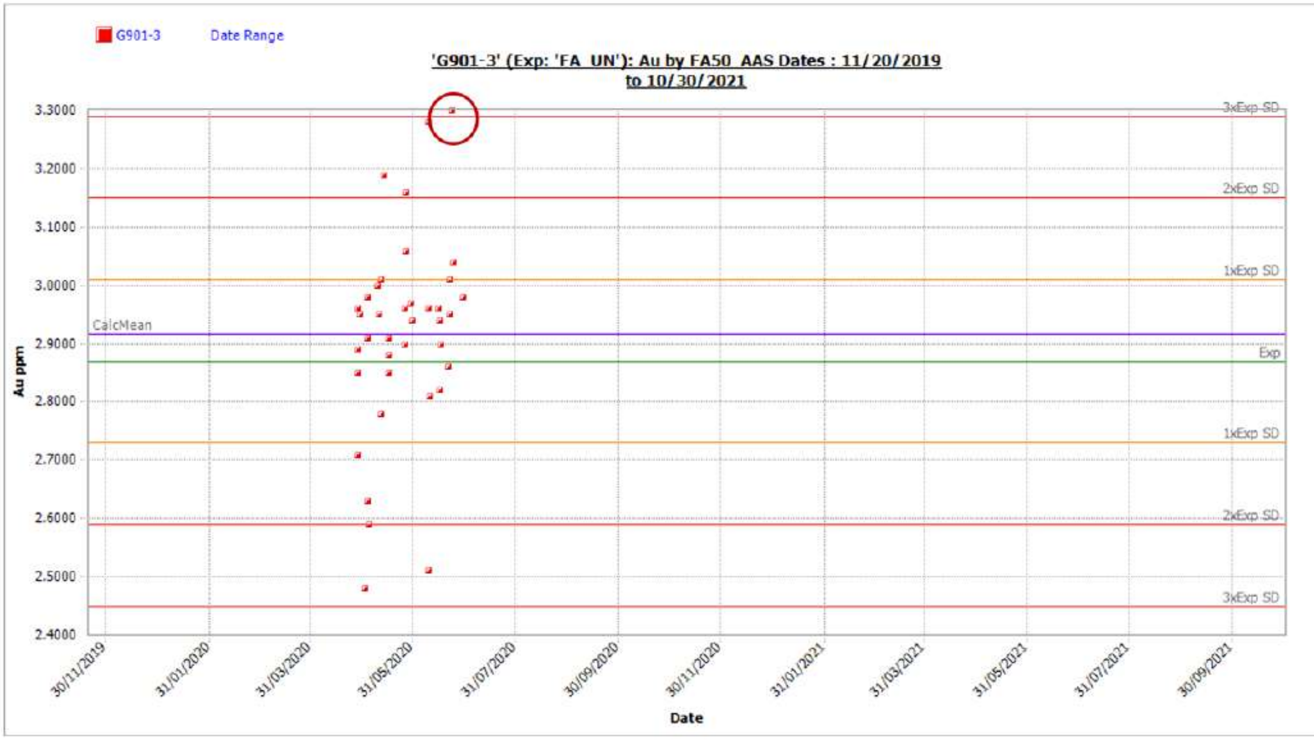


Figure 11-26 Plot of CRM Performance for G901-3

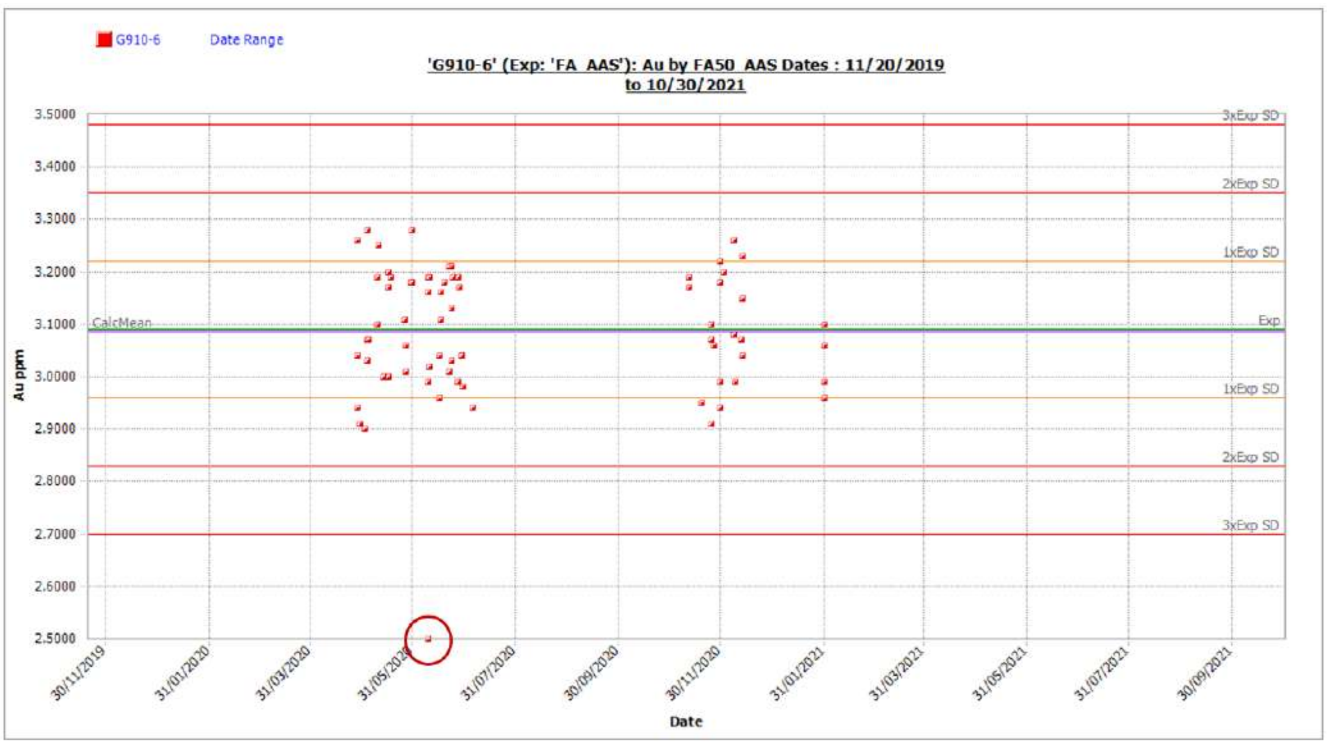


Figure 11-27 Plot of CRM Performance for G910-6

Table 11-17 Akwasiso Exploration CRM Results

Au Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Au	SD	CV	Mean Bias
G300-9	FA50_AAS	FA50_AAS	1.5300	0.0600	74	1.5047	0.0704	0.0468	-1.65%
G308-3	FA50_AAS	FA50_AAS	2.5000	0.1100	13	2.5462	0.0671	0.0264	1.85%
G311-8	FA50_AAS	FA50_AAS	1.5700	0.0800	20	1.5765	0.0472	0.0299	0.41%
G901-3	FA50_AAS	FA50_AAS	2.8700	0.1400	39	2.9156	0.1731	0.0594	1.59%
G910-1	FA50_AAS	FA50_AAS	1.4300	0.0600	4	1.4200	0.0383	0.0270	-0.70%
G910-6	FA50_AAS	FA50_AAS	3.0900	0.1300	70	3.0851	0.1246	0.0404	-0.16%

Note: SD – Standard deviation; CV –Coefficient of variation

Assay Precision

- 219 field duplicate samples were collected to check the sample variability.
- Figure 11-28 below shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Akwasiso, with warning set to 15% variation limit.
- Figure 11-29 shows that approximately 55% of the paired filed duplicates had an absolute relative difference of less than 30%, reasonable for field duplicate gold analysis.

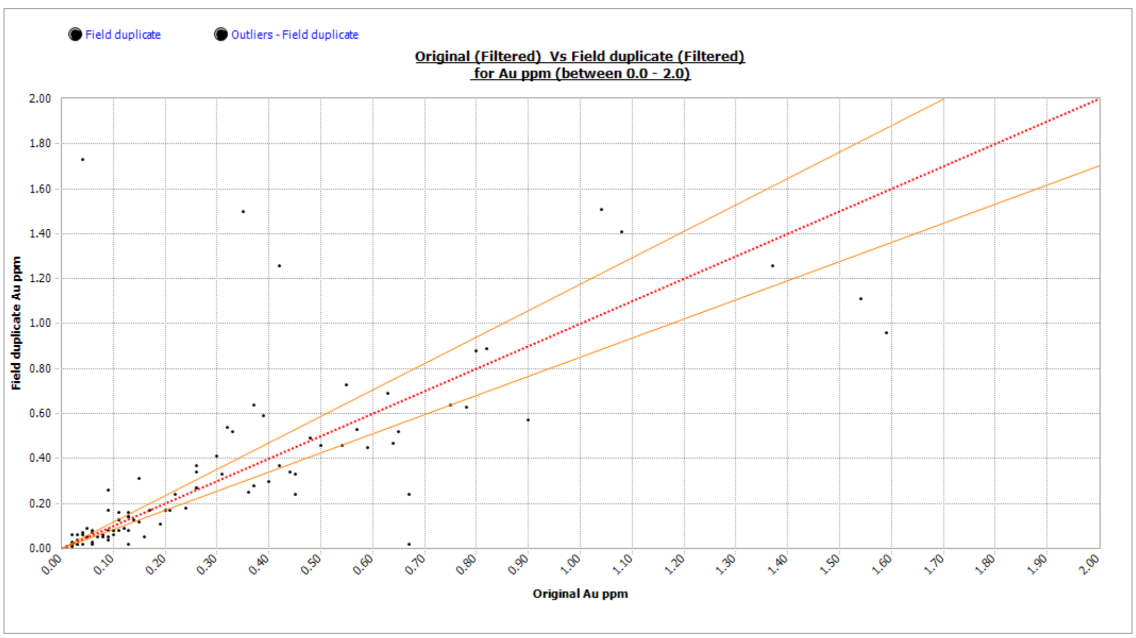


Figure 11-28 Akwasiso Exploration Field Duplicate Scatter Plot

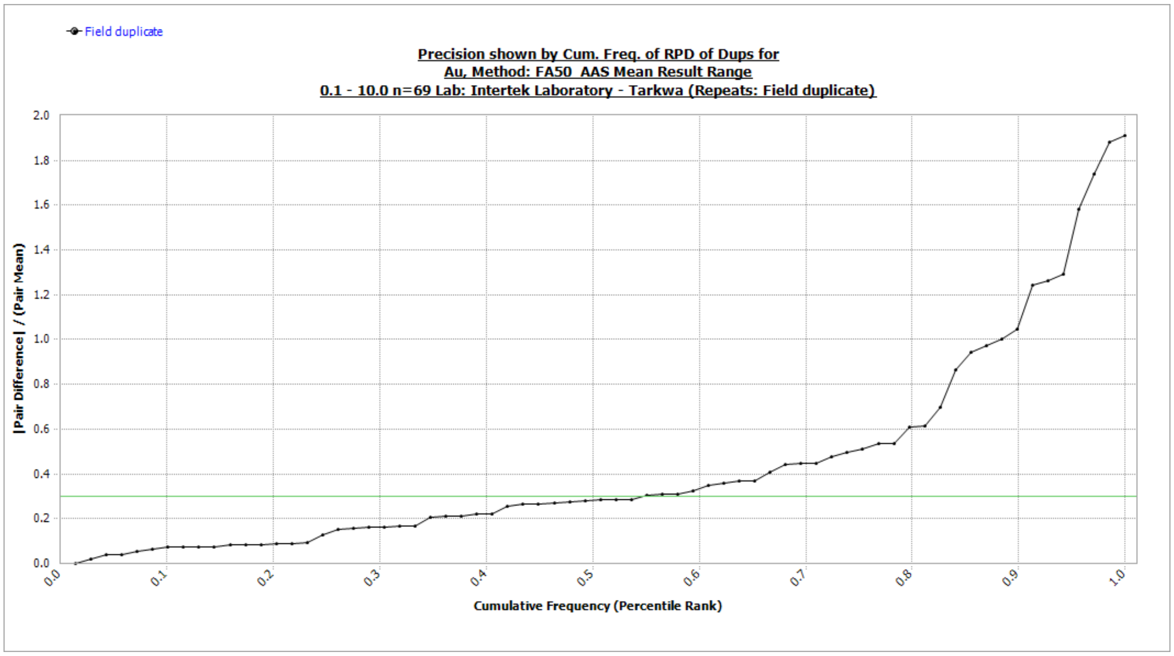


Figure 11-29 Akwasiso Exploration Field Duplicate HARD Analysis Plot

Between Laboratory Bias

- There were 59 umpire samples from 2020 exploration drilling originally assayed at Intertek Kumasi, sent to ALS for check assays. No bias was detected.

Primary Laboratory Quality Control Insertions

- Intertek lab typically includes 4% pulp duplicate/re-split “checks” in each batch. Original results and pulp duplicate results generally compare very well for grades below 7 g/t.

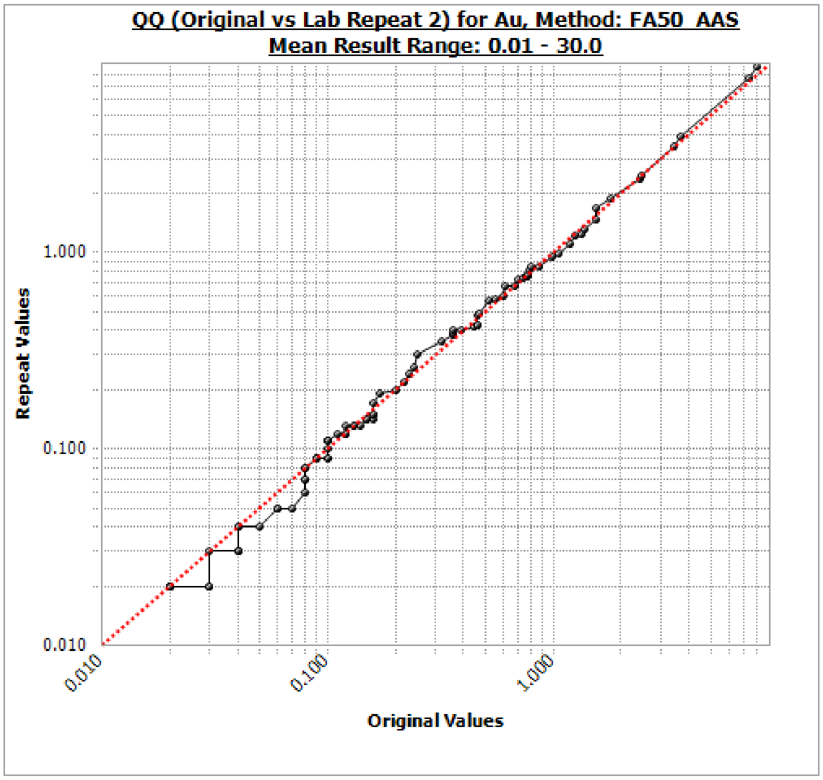


Figure 11-30 Akwasiso Exploration Pulp Duplicate QQ Plots

Akwasiso Grade Control Assays

Grade control samples were also used in 2021 Akwasiso resource estimation. The QP responsible for Akwasiso resource model conducted thorough review of statistical and spatial distribution of the GC data in comparison with exploration data and concluded that the GC data was suitable for global resource estimation and short-term mine planning may benefit from the use of GC data in the grade estimation. More details and relevant GC data assessment are presented in Section 14 of this Report. QC sample insertion rates are summarized in Table 11-18.

Table 11-18 Akwasiso GC Samples for Period 20/11/2019 to 30/10/2021

Reference Material	Number Inserted	Total No of Samples Sent	Percentage of Reference Material (%)
Blanks	1,566	-	4.82
CRM	1,554	-	4.78
Duplicates	1,564	-	4.81
Total	**4,684**	**32,511**	**14.41**

Cross Contamination

- There were 1,556 BLANKS samples submitted to the lab together with original samples.
- All blanks passed at ±2 standard deviations.
- Figure 11-31 is an example of a Blank control chart

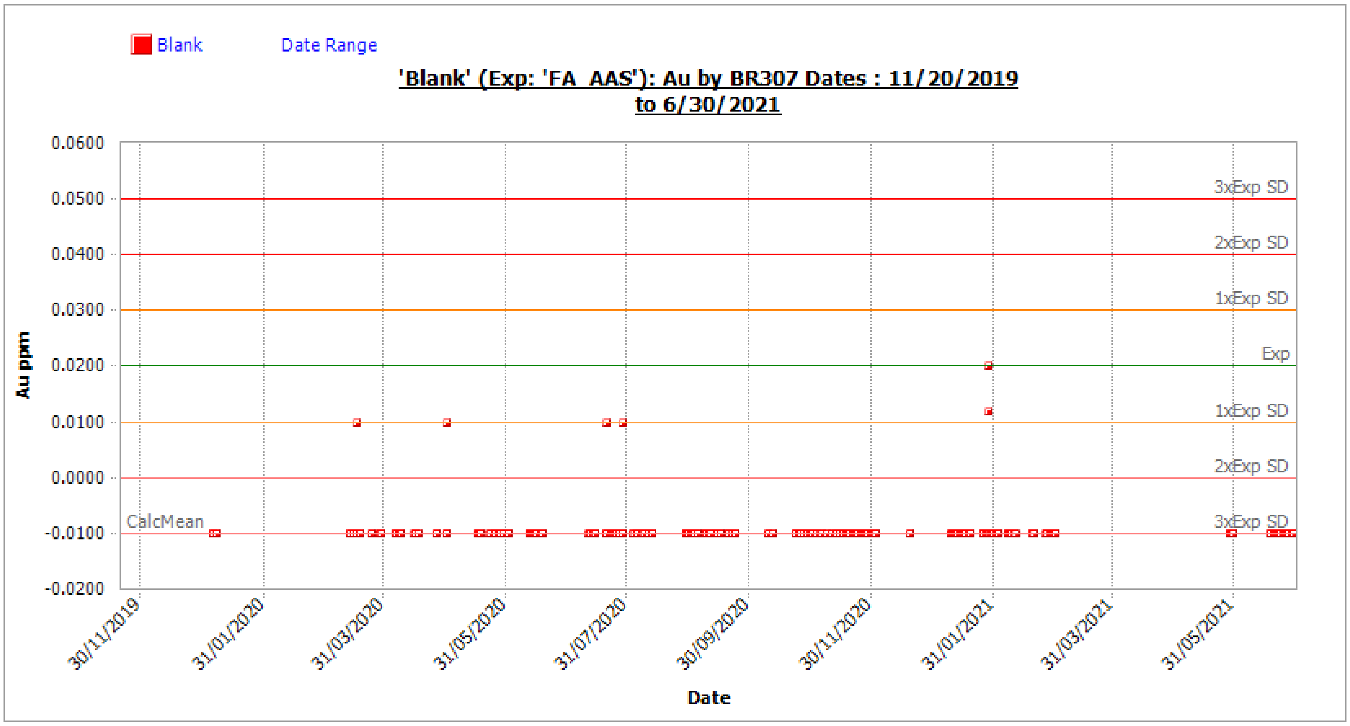


Figure 11-31 Plot of Blanks for Akwasiso Grade Control RC Drilling for the Period Noted

Assay Accuracy (Bias)

- 1,554 CRM were inserted
- CRM's performed well with no significant breaches of the mean ± 3SD limit in exploration data. Minor samples that did breach were either within waste zones or performed well on rerun. A small number of failures noted, all within waste zones. These are shown in Figure 11-32 and Figure 11-33 below, with breaches circled in red.

Table 11-19 shows no significant bias is evident except for CRM BR307 which is a low-grade control sample typically used as a blank.

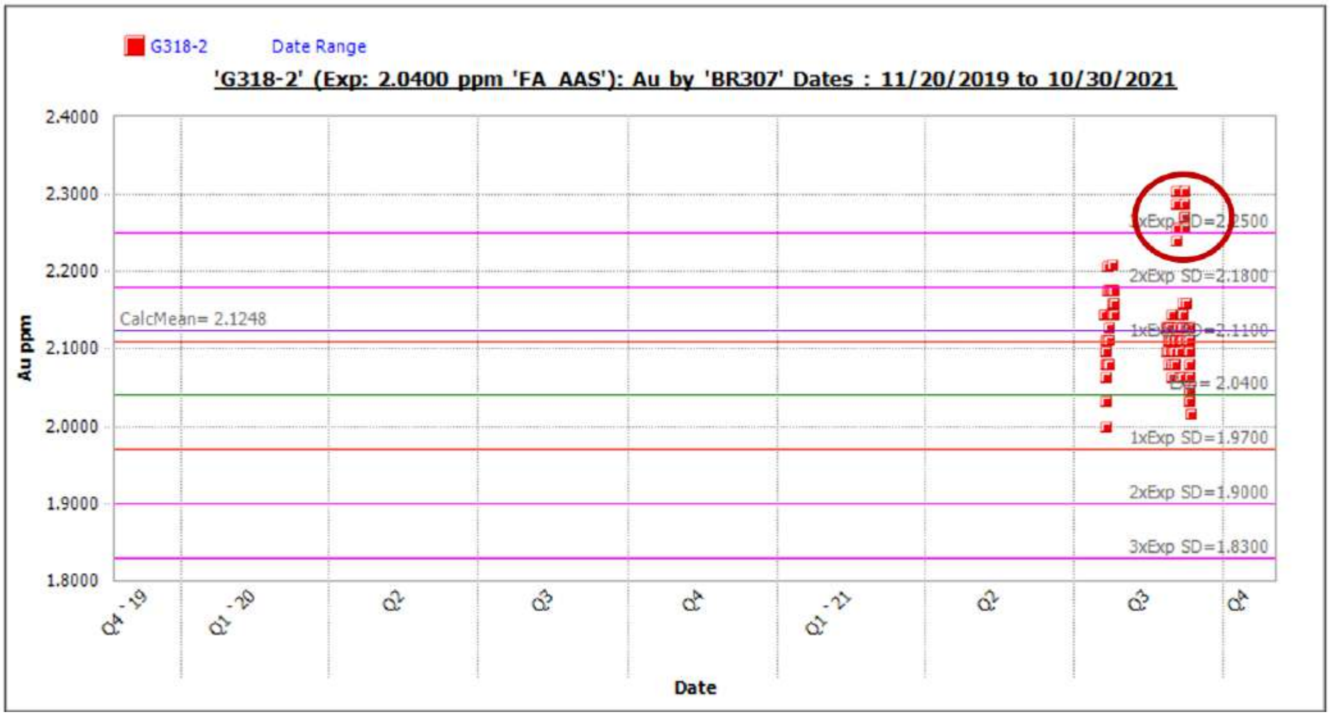


Figure 11-32 Plot of CRM G318-2 Performance for Akwasiso GC

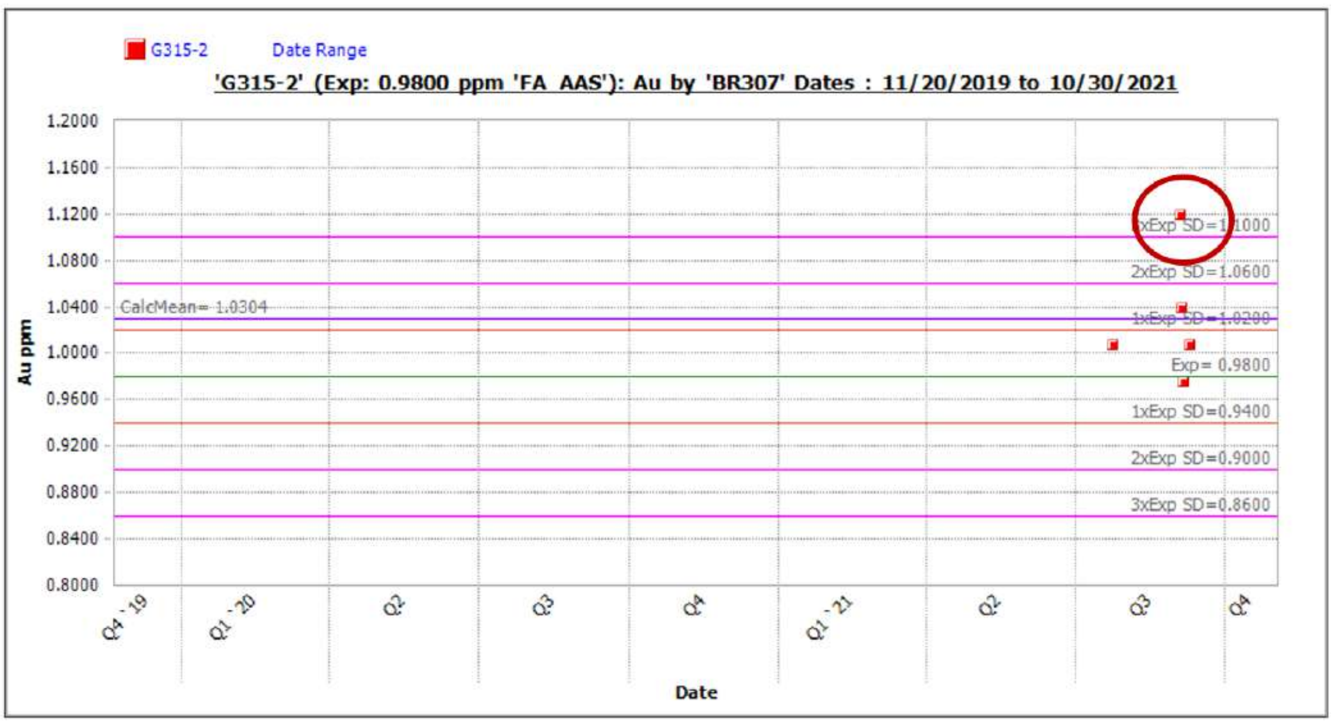


Figure 11-33 Plot of CRM G315-2 Performance for Akwasiso GC

Table 11-19 Akwasiso GC CRM Results (Method BR307)

Au Standard(s)					No. of Samples	Calculated Values			
Std Code	Method	Exp Method	Exp Value	Exp SD		Mean Au	SD	CV	Mean Bias
BLANK	BR307	BR307	0.0200	0.0100	1,566	-0.0099	0.0014	0.0000	-149.58%
G313-4	BR307	BR307	2.0000	0.0800	6	2.0367	0.0528	0.0259	1.83%
G314-2	BR307	BR307	0.9900	0.0400	232	0.9825	0.0617	0.0628	-0.76%
G901-5**	BR307	BR307	1.6500	0.0700	685	1.5812	0.0985	0.0623	-4.17%
G909-5	BR307	BR307	2.6300	0.1000	43	2.5406	0.0565	0.0222	-3.40%
G910-1	BR307	BR307	1.4300	0.0600	62	1.3566	0.1724	0.1271	-5.13%
G911-10	BR307	BR307	1.3000	0.0500	4	1.2975	0.0126	0.0097	-0.19%
G912-2	BR307	BR307	2.5100	0.1100	14	2.5536	0.1520	0.0595	1.74%
G914-2	BR307	BR307	2.4800	0.0800	508	2.4853	0.1398	0.0563	0.21%

*Note: ** G901-5 13 failures, believed due to wrongly labelled standard. SD – Standard deviation; CV –Coefficient of variation*

Assay Precision

- 1,564 field duplicate samples were collected to check the sample variability.
- Figure 11-34 shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Miradani, with warning set to 15% variation limit.
- Figure 11-35 shows that approximately 40% of the paired filed duplicates had an absolute relative difference of less than 30%, poor for field duplicate gold analysis.

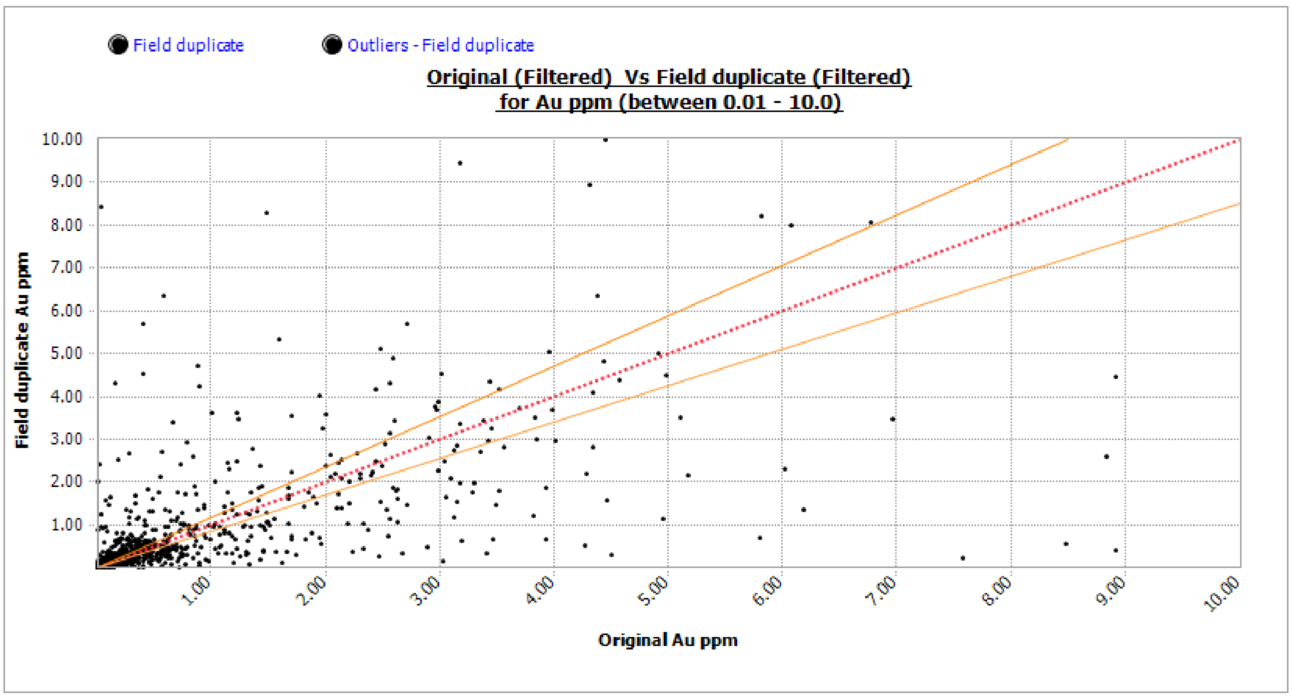


Figure 11-34 Akwasiso Grade Control RC Field Duplicate Scatter Plot Showing Poor Repeatability

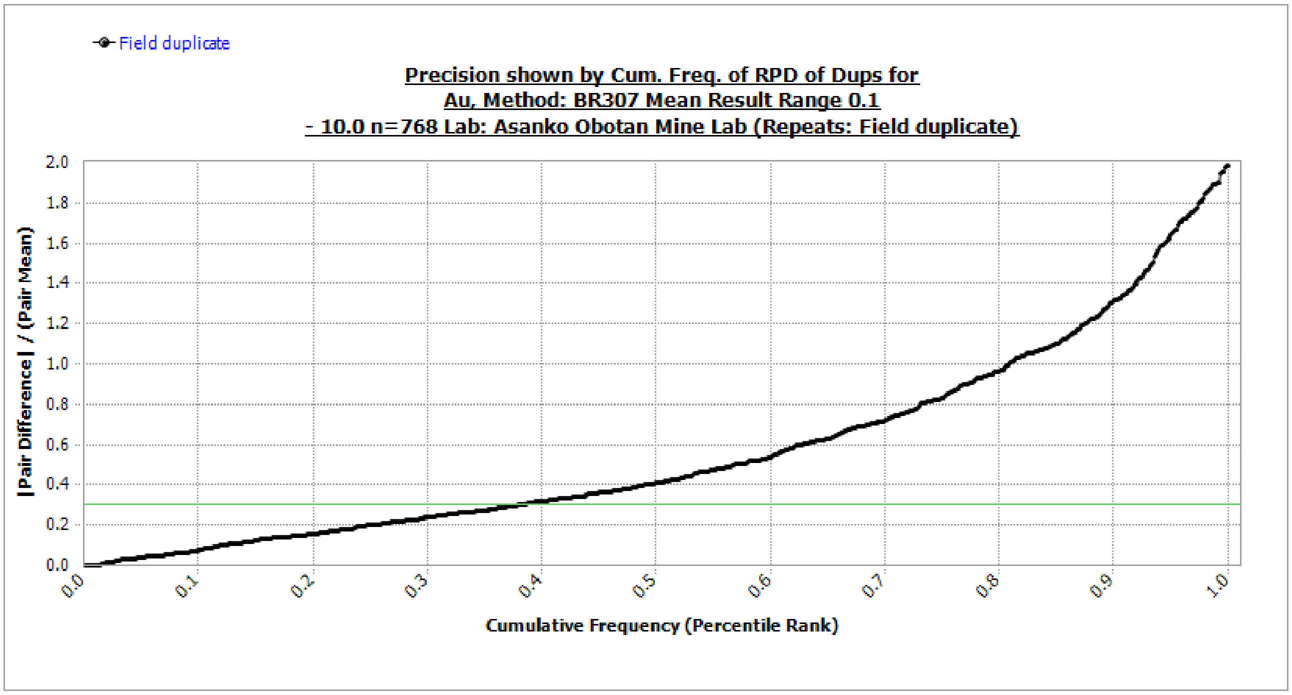


Figure 11-35 Akwasiso Grade Control RC Field Duplicate HARD Analysis Plots

Between Laboratory Bias

- No check samples submitted for this period

Primary Laboratory Quality Control Insertions

- Not assessed

11.2.6.6 Abore

In previous reviews a recommendation was made to complete infill drilling to address absence of quality control results. A total of 72 holes for 11,312 m were drilled at Abore January 1st, 2020 to June 23rd, 2021 to address this issue. QC sample insertion rates are summarized in Table 11-20.

Table 11-20 Abore QAQC Samples for Abore for the Period 1/1/2020 to 23/06/2021

Reference Material	Number Inserted	Total No of Samples Sent	Percentage of Reference Material (%)
Blanks	312		3.27
CRM	313		3.28
Duplicates	312		3.27
Total	**937**	**9,543**	**9.82**

Cross Contamination

- There were 312 BLANKS samples submitted to the lab together with original samples.
- All blanks passed at ±3 standard deviations.
- Figure 11-36 is an example of a Blank control chart

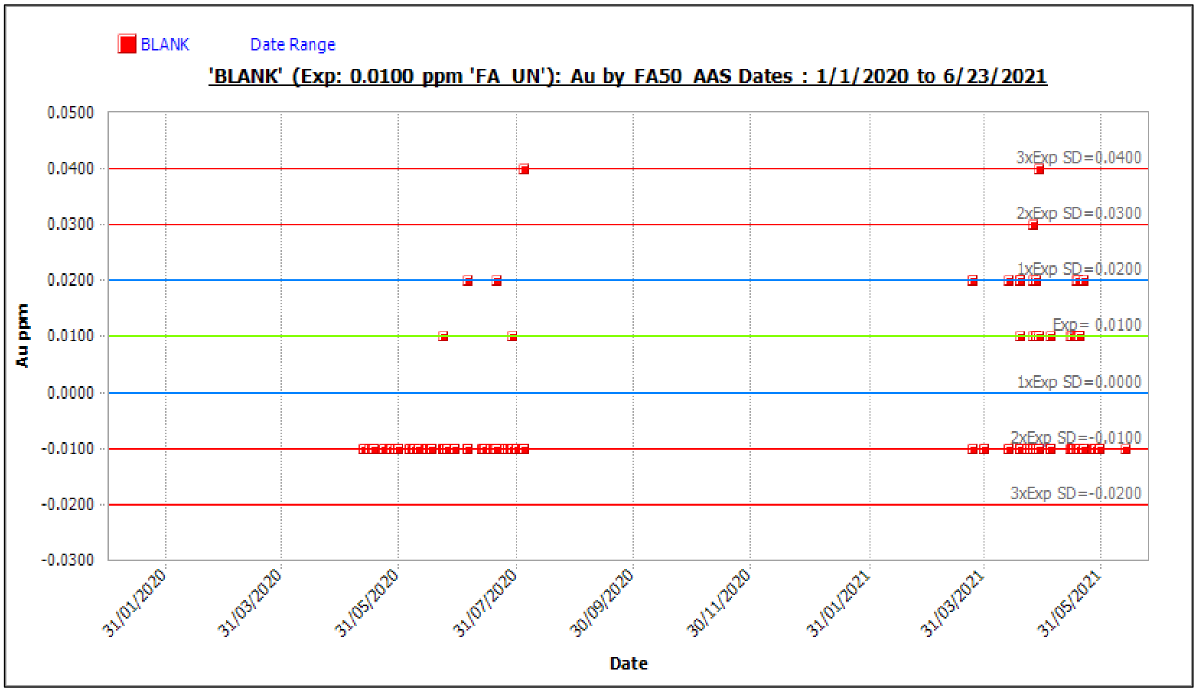


Figure 11-36 Plot of Blanks for Abore Exploration Drilling for the Period Noted

Assay Accuracy (Bias)

- 312 CRM were inserted
- CRM's performed well with no significant breaches of the mean ± 3xSD limit in exploration data. Minor samples that did breach were either within waste zones or performed well on rerun. A small number of failures noted, all within waste zones, illustrated in Figure 11-37 below, with breaches circled in red.
- Table 11-21 shows no significant bias is evident

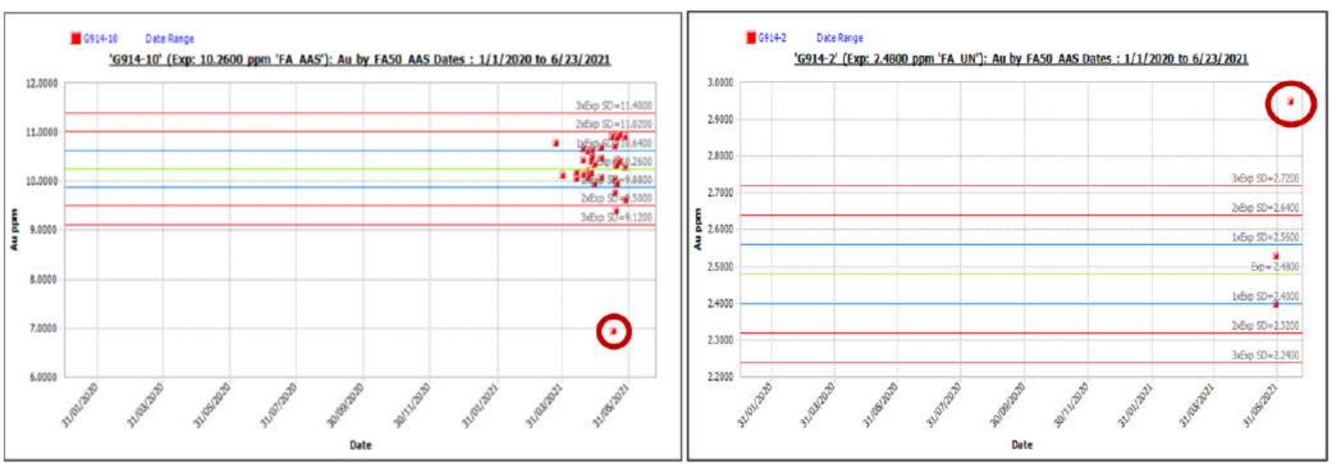


Figure 11-37 Plot of CRM G914-2 and G914-10 Performance for Abore Exploration

Table 11-21 Abore Exploration CRM Results

STD_ID	Method	Expected Value	Expected SD	Number of Samples	Mean Au	Calculated SD	Mean Bias
G300-9	FA50_AAS	1.53	0.06	72	1.5113	0.0661	-1.22%
G308-3	FA50_AAS	2.5	0.11	40	2.5011	0.154	0.04%
G311-8	FA50_AAS	1.57	0.08	44	1.5611	0.0663	-0.56%
G317-2	FA50_AAS	12.97	0.41	5	13.118	0.9508	1.14%
G901-3	FA50_AAS	2.87	0.14	26	2.9563	0.2027	3.01%
G910-1	FA50_AAS	1.43	0.06	1	1.4	0	-2.10%
G910-6	FA50_AAS	3.09	0.13	82	3.1044	0.1184	0.47%
G914-10	FA50_AAS	10.26	0.38	40	10.2811	0.6663	0.21%
G914-2	FA50_AAS	2.48	0.08	3	2.6267	0.2875	5.91%

Assay Precision

- 312 field duplicate samples were collected to check the sample variability.
- Figure 11-38 shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Abore, with warning set to 15% variation limit.
- Figure 11-39 shows that approximately 60% of the paired filed duplicates had an absolute relative difference of less than 30%, good for field duplicate gold analysis.

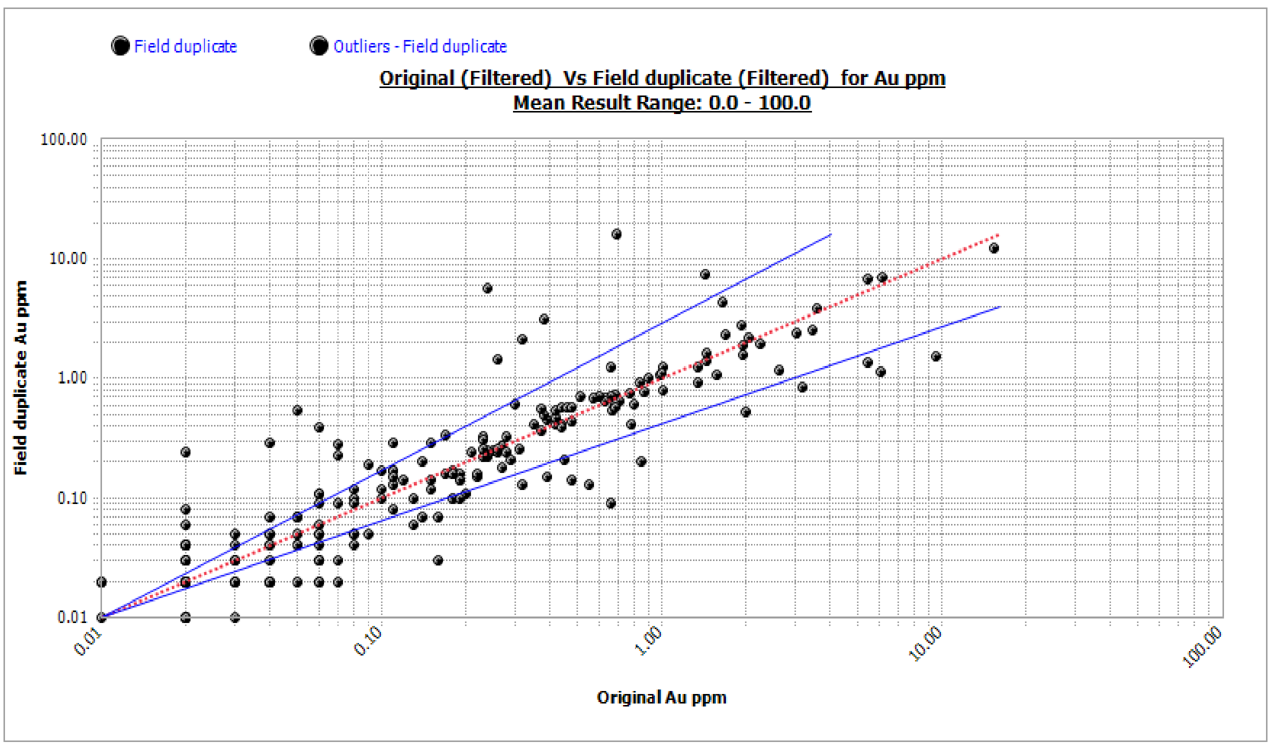


Figure 11-38 Scatter Plot of Field Duplicates from Abore Exploration Drilling for the Period Noted

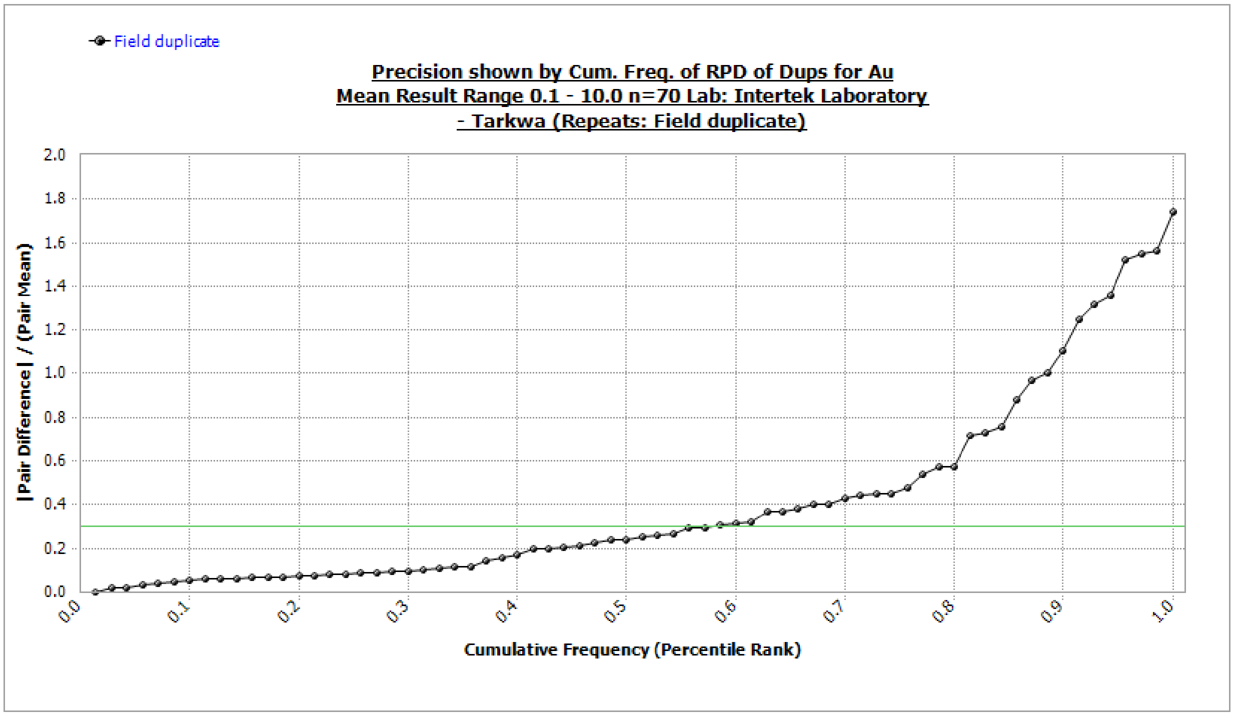


Figure 11-39 HARD Analysis of Field Duplicates from Abore Exploration Drilling

Between Laboratory Bias

- No check samples submitted for this period

Primary Laboratory Quality Control Insertions

- Not assessed
- Generally good quality data from Abore, with acceptable CRM failures, a good repeatability fit for duplicate data and no contamination issues.

11.2.6.7 Asuadai

- No drilling in 2020-2021

11.2.6.8 Adubiaso

- A total of 5 holes for 1,312 m were drilled at Adubiaso May 1st to June 30th, 2020 to provide infill. QC sample insertion rates are summarized in Table 11-22.

Table 11-22 Adubiaso QAQC Samples for the Period 01/05/2020 to 30/06/2020

Reference Material	Number Inserted	Total No of Samples Sent	Percentage of Reference
Blanks	42		3.818
CRM	41		3.727
Duplicates	41		3.727
Total	**124**	**1,100**	**11.272**

Cross Contamination

- There were 42 BLANKS samples submitted to the lab together with original samples.
- All blanks passed at ± 1 & 2 standard deviations
- Figure 11-40 is an example of a Blank control chart

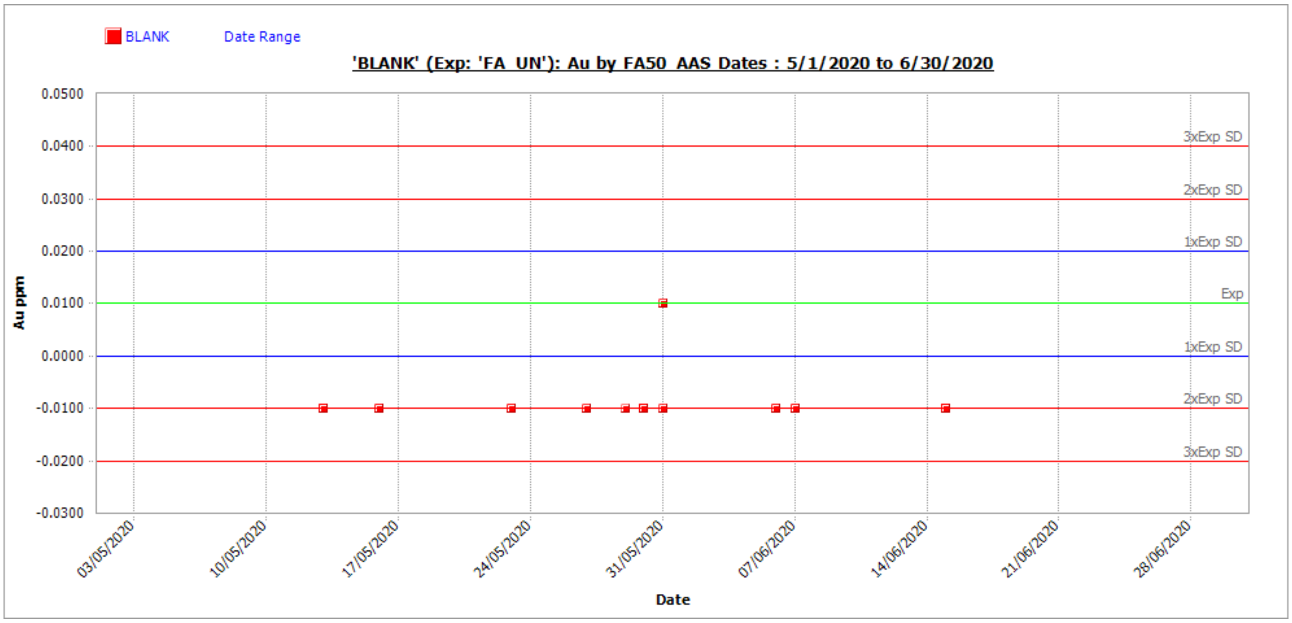


Figure 11-40 Plot of Blanks for Adubiaso Infill Drilling for the Period Noted

Assay Accuracy (Bias)

- 41 CRM were inserted
- CRM's performed well with no significant breaches of the mean ± 3SD limit in exploration data.
- Table 11-23 shows no significant bias is evident

Table 11-23 Adubiaso Exploration CRM Results

STD_ID	Method	Expected Value	Expected SD	Number of Samples	Mean Au	Calculated SD	Mean Bias
G300-9	FA50_AAS	1.5300	0.0600	14	1.4943	0.0921	-2.33%
G901-3	FA50_AAS	2.8700	0.1400	11	2.9727	0.1181	3.58%
G910-6	FA50_AAS	3.0900	0.1300	14	3.1029	0.0981	0.42%
G910-1	FA50_AAS	1.4300	0.0600	1	1.4200	0.0000	-0.70%
G907-2	FA50_AAS	0.8900	0.0600	1	0.9500	0.0000	6.74%

Assay Precision

- 41 field duplicate samples were collected to check the sample variability.
- Figure 11-41 shows Repeat Scatter Plot of original samples and field duplicate samples for exploration drilling at Adubiaso, with warning set to 15% variation limit.

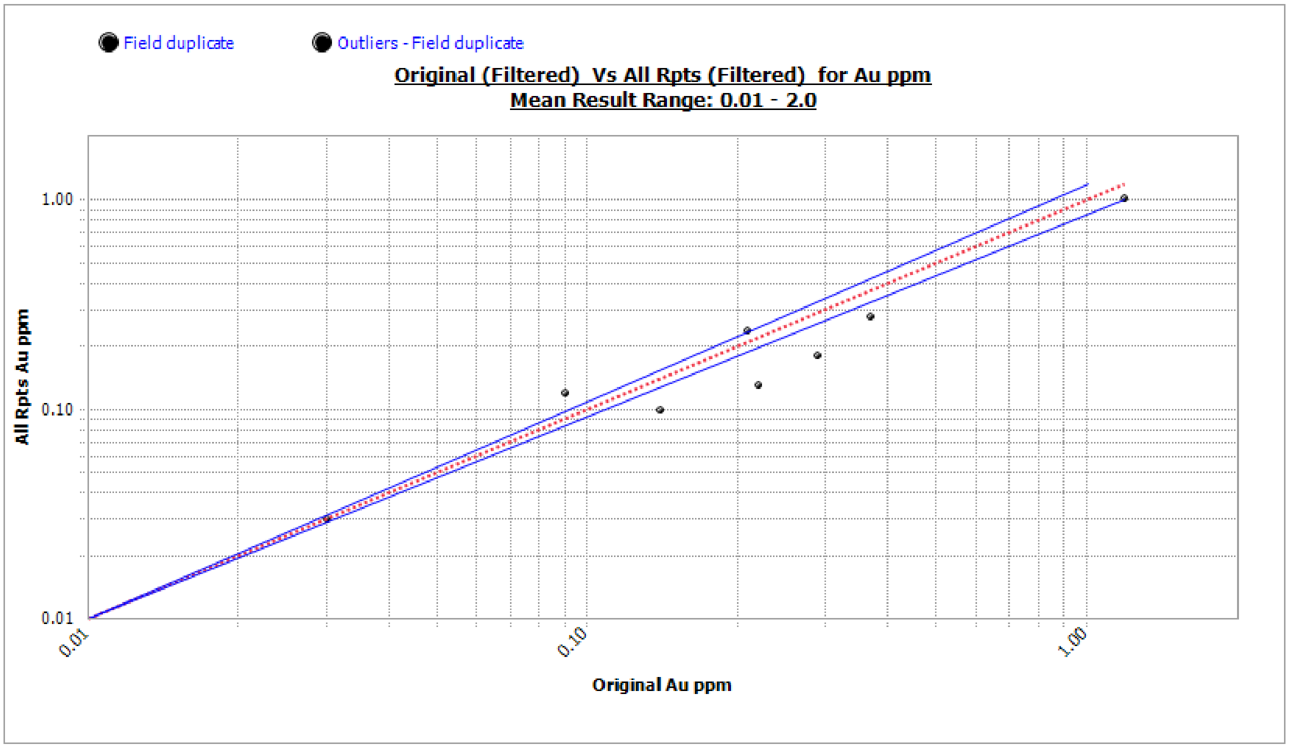


Figure 11-41 Scatter Plot of Field Duplicates from Adubiaso Infill Drilling

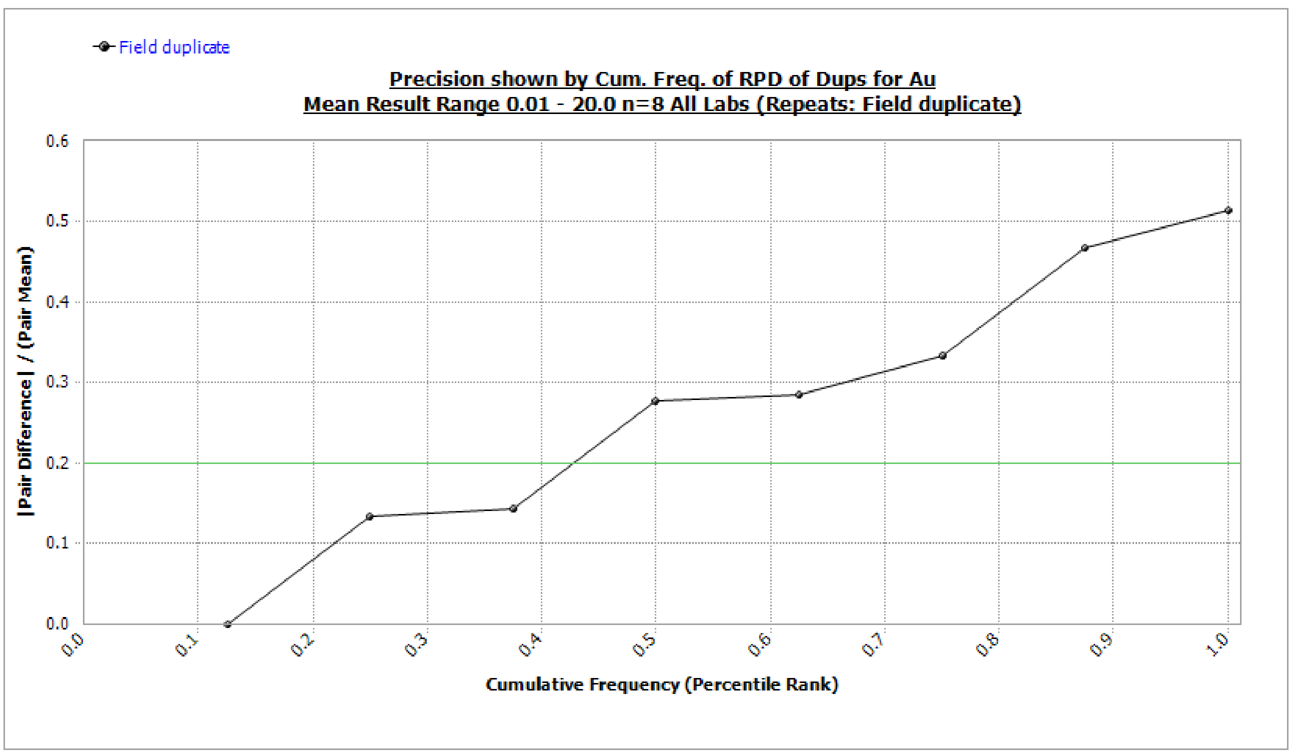


Figure 11-42 HARD Analysis of Field Duplicates from Adubiaso Infill Drilling

Between Laboratory Bias

- No check samples submitted for this period

Primary Laboratory Quality Control Insertions

- Not assessed

Generally good quality data from Adubiaso, with no CRM failures, a good repeatability fit for duplicate data and no contamination issues.

11.3 Qualified Person's Opinion on Adequacy of Sample Preparation, Security

It is the opinion of Qualified Person that the QA/QC data provides reasonable support for the reliability of the sample database for the Asanko Gold deposits under investigation such that it supports Mineral Resource estimation without limitation on confidence classification. After reviewing this data, even though there has been a lot of work done, it is recommended to improve QAQC reporting from the Asanko lab, particularly as it relates to CRM and blank failures. Documentation and reporting of lab check results could also be improved. The QP has reviewed the quality of data and does not believe there is a risk of the data to be used for the resource estimate.

12 DATA VERIFICATION

Previous extensive data verification has been undertaken by several independent consultants over the periods when Keegan and PMI owned the Esaase and Nkran properties respectively, prior to the Asanko Gold takeover of PMI and the merger of the two entities as Asanko Gold and the commencement of mining from the Nkran pit in 2015. These independent consultants included SRK (2011, 2012), CJM (2014, 2016), CSA Global (2016, 2019). The QP (Greg Collins, former VP Exploration for Galiano Gold) has read the data verification procedures and results in those reports and agrees with their conclusions regarding reliability of the data.

The verification steps undertaken by the earlier mine operators are shown below. The Qualified Person's data verification activities support the conclusions by previous operators.

The current data for the various Obotan and Esaase tenements is based on the available exploration drill hole data. Geological models and litho-domains provided were developed internally using paper sectional interpretations and Leapfrog Geo 3D modelling by Asanko/Galiano Gold staff. Paper sectional interpretations in themselves are a method of cross checking how legacy data compares with adjacent AGM generated data in terms of consistent collar RL's, geology and in some cases, assay continuity. Having reviewed all necessary procedures in place to collect and check data quality, as well as checking the quality of the data itself, the QP is satisfied with the accuracy of the data for the purposes of estimating Mineral Resources. Industry standard QAQC procedures are in place at AGM to ensure quality geological, assay and density data collection.

12.1 Data Validation and Site Visits

The Qualified Person (Greg Collins, former VP Exploration for Galiano Gold) has visited the AGM on numerous occasions during 2021, up to three months at a time. The most recent visit was in November 2021. During these visits, the QP has reviewed the items listed below for current 2021 drilling at Esaase, Miradani North, Dynamite Hill, and Abore:

- Drilling techniques with emphasis on appropriateness of the drilling method
- Sampling procedures
- Logging procedures
- Structural logging procedures
- Density estimation procedures
- Data entry procedures
- Review of geology interpretation and inputs for Mineral Resource Estimation
- Geological review of core and comparable relationships with open pit mapping, with particular emphasis on Esaase

The Qualified Person, in conjunction with fellow QP Eric Chen, (former VP Mineral Resources for Galiano Gold) also reviewed the following:

- QA/QC results of pit grade control and related infill drilling programs for the Esaase and Akwasiso deposits.
- Geological discussions related to continuous improvement of the geological understanding with the site geologist
- Mining and grade control procedures with emphasis on reconciliation between production and the MRE models for calibration of the Esaase and Akwasiso MRE models
- Mining and metallurgical plant recovery and metal accounting

- Validation of Nkran, Esaase, Miradani North, Abore, Dynamite Hill geology and drill hole sample data, in preparation for MRE update. In addition to reviewing current (post 2020) QAQC results as part of assay validation, the QPs have reviewed legacy assay data and reports on legacy drilling and sampling procedures (Spiers, 2010) and SRK (2011). The QPs have, as much as possible, validated legacy data when spatially near post-2014 AGM drill data during the course of 2D paper sectional interpretations. In doing so, the QPs were able to assess legacy vs AGM hole collar RL's, view downhole survey drill traces and assess how 'geologically reasonable' they are. The QPs have reviewed RC and diamond drilling, sampling, core preparation, photography and logging procedures. The QPs have reviewed several hundred metres of mineralized core from the Esaase, Miradani, Abore and Dynamite Hill drilling, and visually assessed several hundred metres of mineralized Nkran drill core and compared all with database records.
- Site visits of Miradani North, Dynamite Hill, Akwasiso, Abore and Asuadai, with reference to drilling programs (i.e. – verified collar locations in the field, drill core to core logs, review sample splits, etc.) and galamsey workings.

12.2 Database Structure

The database schema used is the Maxwell DataShed™ (MDS version 4.6.4) which has standard constraints, keys and triggers to ensure that only validated data can be loaded. If these constraints, keys or triggers have been edited or removed, invalidated data can be merged into the database, (e.g. overlapping intervals, data that exceeds the maximum depth of the drill hole, etc.).

Standard validation rules in the MDS include the following:

- Data is captured in the correct format:
    - Real number: This is a number such as a drill hole depth, co-ordinate, etc. In some cases, there can be a constraint on a number (e.g. a number which is a percent should be ≤ 100)
    - Date: Set format such as dd/mm/yyyy
    - Text: Usually a comment
    - Library field: A library field (lookup) has a predetermined list of values allowing only those values to be entered in the field (e.g. lithotype codes, or responsible person). This ensures that there is consistency in the database (e.g. a quartz vein is always captured as "Qv" not as Q-V, Qtz V, etc.)
    - Collar table: Incorrect co-ordinates (not within known range), unique hole IDs per dataset. Data can only be merged into the database if the drill hole has been entered into the collar table.
- Survey table: Duplicate entries, survey intervals past the specified maximum depth in the collar table and anomalous dips and azimuths are not merged until corrected
- Geotechnical tables: Core recoveries and rock quality designations (RQDs) less than 0%, or greater than 120% (Recovery), or 100% (RQD), overlapping intervals, negative widths and geotechnical results past the specified maximum depth in the collar table are not merged until corrected
- Geology table: Duplicate entries, lithological intervals past the specified maximum depth in the collar table, overlapping intervals and negative widths are not merged until corrected. Standardized logging codes are required
- Sampling table: Duplicate entries, sampling intervals past the specified maximum depth in the collar table, negative widths, overlapping intervals, sampling widths exceeding tolerance levels, missing intervals and duplicated sample IDs are not merged until corrected
- Assay table: Missing samples (assay results received, but no samples in database) are imported into an incoming assay table, assay metadata such as detection limits, methods, etc. are captured where possible.

12.3 Data Review

12.3.1 Exploration Database

Data was extracted from the exploration database for the various projects using bounding values for easting and northings. These data extractions were validated and exported for downstream work.

Extracted drillhole data are in comma-delimited csv format and transferred to the resource QP for each deposit. The resource QP worked closely with the site database and exploration team to conduct further data verification to ensure that data entries in all the drillhole tables are reasonably free of error and consistent before the data is accepted for resource estimation. The verification process is completed with assistance of various built-in tools in 3D geological modelling software programs or generic data processing program (such as Excel), and has included, but not limited to, checking and correcting duplicate records, drillhole interval overlap, drillhole depth mis-match, abnormal collar location, downhole surveys, erroneous assay values, etc.

12.3.2 Grade Control Database

Grade control data was used to a limited extent for the Esaase and Akwasiso Mineral Resources. The data verification for the GC data utilized in these estimates are described in Section 14.

12.4 Qualified Person's Opinion on Adequacy of Data For Purposes Used in Technical Report

The Qualified Person (Greg Collins) has personally reviewed the accuracy of drill hole collars and sample locations, down-hole deviation, the accuracy and internal consistency of lithological and alteration data, and the accuracy and precision of analytical information. The verification activities included a search for factual errors, completeness of the lithological and assay data, and suitability of the primary data. As part of the database verification activities, the QP has also examined assay information and certificates obtained directly from the analytical laboratory.

Personal inspections included reviews of the geological and sample information used in the preparation of the Mineral Resource estimates. The QP is confident that the available information and sample density allow preparation of reasonable estimates of the geometries, tonnage, and grade continuity of the mineralization in accordance with the level of confidence established by the Mineral Resource categories in the CIM Definition Standards. The database fairly represents the primary information and the data therein contained are suitable to support estimation of Mineral Resources.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Previous Project Testwork

13.1.1 Metallurgical Testwork 2008 to 2013

Esaase was evaluated in metallurgical test programs between 2008 and 2013. Four rounds of metallurgical testwork were carried out. The findings of each of these testwork programs are comprehensively discussed in the Lycopodium report, completed as part of the feasibility study submission in 2012.

A fifth testwork program was scoped to quantify the metallurgical recovery that could be achieved through the combination of gravity concentration within the milling circuit and flotation on gravity tailings, with a leach on the flotation concentrates. The fifth testwork program took place between 2012 and 2013 at Amdel Laboratories in Perth under the management of DRA. As per NI 43-101 Technical Report “Asanko Gold Project in Ghana – Pre-Feasibility Study” issued June 27th, 2013 (DRA, 2013).

13.1.2 Metallurgical Testwork 2014 to 2016

The AGM Expansion Project testwork was conducted in two testwork programs. Both testwork programs were undertaken by the Perth based, Australian Laboratory Services Pty Ltd (ALS) under the management of DRA. These testwork programs evaluated blends of Esaase and Nkran material for processing at a central facility.

13.1.2.1 AGM Expansion Project – Phase 1 Testwork

As per the Asanko Gold NI 43-101 Technical Report (2015), the following is noted:

This phase of testwork was designed to evaluate the metallurgical response of a gravity-CIL circuit versus a gravity-flotation-CIL circuit for treating blends of Esaase and Obotan feedstock. It was further investigated if it would prove feasible to dedicate specific material types to either one of the two processing routes to optimize overall recoveries and operating costs.

13.1.2.2 AGM Expansion Project – Phase 2 Testwork

As per the Asanko Gold NI 43-101 Technical Report (2017), the following is noted:

The testwork scope of this phase of the project was designed to evaluate the opportunity to process tailings from the gravity-CIL circuit together with the reground flotation concentrate product from a gravity-flotation circuit in a combined CIL circuit, when treating blends of Esaase and Obotan (Nkran) feed types. Additional testwork was undertaken which identified carbon poisoning by flotation reagents to be an added risk to CIL recoveries. Additional DFS testwork on composites of Esaase Fresh and Nkran, was conducted in Q4 2016 to confirm gravity/CIL as the preferred processing route.

As a result of the above investigations, the flotation processing route was abandoned in favour of the gravity-CIL option.

13.1.3 Metallurgical Testwork 2018 to 2019

Information in this section is sourced from Asanko Gold NI 43-101 Technical Report (2020).

The initial NaCN concentration in all tests was 300 ppm.

The purpose of these test programs was to address two key technical aspects with respect to the Esaase Fresh component:

- To create a better understanding of the geological model with respect to the trending shear zones, namely Upper Sandstones, Central Sandstones and the Cobra unit
- To formulate a metallurgical test program that would focus on the geological model interpretation which would then lead into the future creation of a geometallurgical model and a more defined recovery profile.

The key component of the geometallurgy of the fresh, unoxidized gold mineralization at Esaase, and potentially within the Weakly – Oxidized (WOX) transition zone, is the distribution and abundance of organic carbon (OC) which shows enrichment in the following areas:

- Within and immediately adjacent to the NE-SW trending shear zones and sheared lithological contacts within the stratigraphic units
- Within the deformed shales and siltstones of the Cobra unit.

One of the planned outputs of the metallurgical testwork program was the development of an unbiased recovery model which considers the distribution and abundance of OC and is therefore applicable to all sections of the deposit.

The OC content variances were determined by drill core sampling and assaying, with the Cobra unit identified as a distinctly elevated OC geometallurgical domain (narrow 2-5 m intervals of greater than 0.5% OC). The OC content levels in the central sandstone zone are significantly lower.

Metallurgical sampling and testing completed in 2018/2019 is better aligned with the growing understanding of the geological model but are biased towards the thinking at that time that high-level OC is equally widespread across all lithologies.

The OC is present in all geological and metallurgical samples tested to date demonstrating various degrees of metallurgical recovery performance. The metallurgical testwork described below does not have the benefit of geological interpretation that has been developed in this phase of study and because of that, certain discounts relating to recovery may have been overstated (preliminary geological review indicates over-sampling of high OC material).

13.1.3.1 ALS Metallurgical Testwork on Esaase Composites

In support of the AGM LOM Study 2020, four defined testwork programs were undertaken at the ALS Metallurgy Services Laboratory in Perth (Western Australia) and one Raman ratio investigation program at Curtin University in Western Australia. The objective of the testwork was as follows:

- To determine the metallurgical performance of the samples through a program of gravity concentration with CIL treatment of the gravity tails
- To determine whether samples were likely to be preg-robbing during cyanide leaching (programs 1, 2, 3 and 4)
- To determine the gold extraction of samples under various process conditions (programs 1, 3 and 4)
- Preparation of samples for analysis at Curtin University (program 2 only) to determine the Raman preg-robbing ratio.

13.1.3.2 Samples' Origins

Samples were derived from a number of geological diamond drill cores and tested at Analytical Laboratory Services – ALS Perth as Testwork programs A19208, A19437, A19681 and A18754 using material from drill core intervals and RC drilling chips. The identification of samples obtained per testwork phase is shown in Table 13-1.

Table 13-1 Identification of Samples for Esaase Metallurgical Testwork

Testwork Program	Sample Type	Geological Samples ID	Geological Section(s)
A18754	Reverse circulation	KERC 039, 114, 155, 156, 157, 158, 164, 220, 227, 233	18, earlier testwork
A19208	Selected diamond core	KEDD 162, 550, 813, 989, 6032, KE 6013C	1, 2, 3
A19437	Diamond core	KE6013C, KEDD 6032, 959, 550, 813, 949	16, 23, 24
A19681	Diamond core	KEDD 162, 6032, 582, 509, 863, 862, 860, 302, 537, 821, 334, 822, 864, 832, 784, 785, 480, 488, 754, 913	13, 16, 17, 18, 22, 23, 24

13.1.3.3 ALS Testwork: Program 1 (ALS Report A18754, March 2018)

Program 1 involved ten RC Esaase samples, comprising five Fresh, two Transitional and three Oxide samples).

The following key findings were noted:

- Gravity gold is generally high with recoveries from 50% to 83.3%
- Potential preg-robbing is exhibited in samples KERC 155, 156 and 158. However, CIL cyanidation produced higher recoveries when compared to direct leach or CIP cyanidation. The preg-robbing is effectively countered by the presence of activated carbon.
- Overall gold recoveries from gravity/CIL processing (at grind size 80% passing 106 µm, 0.50 g/L NaCN, 15 g/L activated carbon and 24 hours residence time) ranged from 88.7% to 96.6%.

Sub-samples of all 10 KERC composites were submitted for preg-robbing characterisation. The results showed poor correlation of OC to the preg-robbing index (PRI) percent.

13.1.3.4 ALS Testwork: Program 2 (ALS Report A19208, October 2018)

Program 2 comprised 39 hand selected specimen samples, that were specifically selected for visible OC content from drill core samples EXES0618 5443-548. Selection of these samples was not based on current knowledge of the mining schedule.

Gold and OC assays were completed with sub-samples prepared for Raman spectroscopy testwork (Program 5) at Curtin University.

The following was noted with respect to the head assays:

- Gold content of samples ranged from less than 0.02 g/t to 7.79 g/t
- The OC content ranged from less than 0.03% to 3.99%.

Sub-samples of all 39 composites were submitted for preg-robbing characterisation testwork. The results indicate a linear relationship with percentage OC levels and PRI%.

13.1.3.5 ALS Testwork: Program 3 (ALS Report A19437, November 2018)

Program 3 comprised 25 cut core samples (EXES101800001–EXES101800025).

The samples were subjected to fire assay for gold (and screen fire assay on selected samples) and a multi-element ICP scan for base metals and other elements. Significant variation in the gold values was observed and is indicative of the presence of coarse gold. The preg robbing characterisation tests results indicate a direct linear relationship between the OC value and the PRI.

A total of 19 these Esaase samples were ground to a P_{80} of 106 µm, and then submitted for gravity/CIL testwork.

Following the above tests, a bulk composite was prepared by combining sub-samples of gravity tailings for the following composites: EXES1018000-06, 16, 23, 24, and 25. Head assays of this composite returned 0.54 g/t Au and 0.60% organic carbon. Its preg robbing index (PRI) was 31%.

Sub-samples of the composite gravity tailings sample were submitted for cyanide leach testwork, to determine the impact of various parameters on leach performance to mitigate the effect of preg-robbing. The results indicate:

- CIL gold recovery increased significantly after pre-conditioning for 4 hours with 2 kg/t of kerosene (0.3 g/L NaCN, 24 hours)
    - Base test (no kerosene, no activated carbon) – little dissolved gold was detected in solution, the leach residue contained 0.62 g/t gold
    - CIL test (no kerosene, 10 g/L activated carbon) – leach residue grade was reduced to 0.38 g/t.
    - CIL test (kerosene, 10 g/L activated carbon) – leach residue grade reduced to 0.11g/t
- Increased activated carbon concentration did not increase recovery
- Increased cyanide concentration did not increase gold recovery

13.1.3.6 ALS Testwork: Program 4 (ALS Report A19681, February 2019)

Program 4 comprised 20 core samples (EXES101900001-EXES 101900020), selected on the basis of high visible organic carbon content. The core samples were subjected to gravity concentration with both direct and CIL cyanidation carried out on the gravity tails.

The samples were subjected to fire assay for gold and a multi element ICP scan for base metals and other elements. The following observations were noted:

- Large variations in Au head grade assays are indicative of coarse gold
- Levels of OC range from 0.30% to 0.75%.

Total average extraction for direct cyanide leach tests was 57.3%; for fresh carbon CIL tests 80.4%; for site barren carbon CIL tests 74.6%.

All 20 samples were submitted for preg-robbing characterization testwork. The results of this testwork suggest a relationship between the OC value and the PRI.

Representative gravity tails samples of KEDD582 (EXES101900003), KEDD785 (EXES101900016) and KEDD821 (101900010) were blended to generate a gravity tails composite sample (1.02 g/t), sub-samples of which were subjected to CIL leach testwork at a P_{80} of 106 µm. The test procedure followed the standard but included varying concentrations of diesel added at the start of a 1-hour pre-conditioning phase. These tests were designed to determine if the OC content of the sample could be successfully blinded in order to reduce the preg-robbing characteristic of the material.

In addition, sub samples of the Fresh feed of KEDD582, KEDD 785 and KEDD821 were combined to create a “Combined Fresh Composite”. This composite was then submitted for gravity/CIL leach testwork at grind sizes of P_{80} 75 µm and P_{80} 45 µm. The results indicated:

- For the combined Fresh composite, no benefit was obtained when grinding finer; possibly due to the finer grinding resulting in enhanced activity of the preg-robbing carbon

- The application of a pre-conditioning stage with diesel showed a positive correlation between dosage rate and leach performance.

13.1.3.7 Characterisation of Esaase Samples Using Raman Spectroscopy: Program 5 (Curtin University Report: April 2019)

The 39 pulverized samples, originating from ALS Test Program 2 (A19208), were received at The Gold Technology Group (GTG) at Curtin University.

The carbonaceous material within each sample was characterized using Raman spectroscopy with the following observations made:

- The Raman ratio results ranged from 0.43 to 0.77 with an average of 0.56
- Based on the Raman ratio results, the submitted Esaase samples would be classified as low to moderately preg-robbing
- It should be noted that Raman spectroscopy gives an indication of the preg-robbing behaviour of the carbon in the sample but not the concentration of the carbon (which will affect the overall preg-robbing capacity of the sample).

13.1.3.8 Summary of Metallurgical Testwork 2018 to 2019

The testwork results for the relevant ALS reports, A18754, A19208, A19437 and A19681 allude to a correlation between the OC content and the preg robbing index, and that this is biased towards the OC values greater than 0.5%. It is acknowledged however that there may have been over-sampling of high OC material.

Table 13-2 Head Grade Recovery Model Correlations

Material Source	Head Grade Recovery Correlation	M (slope)	C (coefficient)
Upper (Fresh/Trans)	y = 9.600ln(x) + 82.260	9.60	82.26
Cobra (Fresh/Trans)	y = 15.532ln(x) + 56.020	15.5	56.02
Central (Fresh/Trans)	y = 6.202ln(x) + 85.792	6.20	85.79
Python (Fresh/Trans)	=upper	9.60	82.26
Other (Fresh/Trans)	=upper	9.60	82.26
Material Type		**Residue Value Au (g/t)**	
Esaase Oxides*		0.10	
Recovery Discount Factor (due to Soluble Gold Losses & Carbon Losses)		0.5%	

*Note: * A fixed residue grade has been applied to the Esaase Oxide material*

It is also acknowledged that, for this suite of tests, the base case cyanide concentrations were lower than plant operating levels at the time. The process plant, which was processing Nkran ore in 2018, added an average of 450 ppm NaCN. ALS testing was carried out with initial NaCN concentrations of 300 ppm. The test results may have been compromised due low cyanide levels.

13.1.4 Addendum Testwork A20208 (2019)

13.1.4.1 Nkran Testwork and Past Mine Performance

Over the past mine performance of Nkran (3.5 years) the plant had achieved consistent recoveries exceeding 91.6%, notwithstanding the treatment of a blended ore comprising Oxides, Transition and Fresh and that preg-robbing zones are also encountered in the Nkran pit geology. The plant annualized recoveries are shown in Table 13-3.

Table 13-3 Nkran Past Production Annualized Recovery

Annualized Recovery	2016	2017	2018	2019
Nkran gold recovery (%)	91.6	94.3	93.8	93.8

In October 2019, a testwork program A20208 was undertaken at ALS Metallurgy in Perth (Western Australia). The objective of this testwork was as follows:

- Provide a direct comparison of the preg-robbing, gravity/direct leach and gravity/CIL performance of the Nkran core samples with the recent Esaase testwork using identical methods
- Compare the AGM laboratory testwork with typical plant performance results, though information on the Asanko Gold plant performance was limited at the time
- Compare Raman spectroscopy PRI of Nkran and Esaase
- Check that the current laboratory test methods produce results that are reasonably comparable with what is expected at plant scale
- Previous Nkran testwork was also considered.

The following conclusions were made:

- On average, the activity of Esaase organic carbon is double that of Nkran
- The organic carbon activity of the previous Esaase samples is relatively consistent and has relatively low variability
- The organic carbon activity of the Nkran samples is relatively more variable than Esaase.

13.1.4.2 Raman Spectroscopy

Preliminary reporting of the results by Curtin University on November 7, 2019.

"Essentially, by comparing the spectra from the Esaase and Nkran spectra with each other and with other spectra from our database, indications are that the carbonaceous material in the Nkran samples is slightly more preg-robbing than that in the Esaase samples, although both would be considered to have low to moderate preg-robbing capacity when compared with the wider dataset. However, the lower normalized PRI values for the Nkran samples relative to the Esaase samples are a little anomalous and I suspect that some of the Nkran samples contain graphitic (non preg-robbing) carbon which may be skewing the results."

13.2 Current Testwork 2021 – Esaase Main Pit

Previous testwork undertaken in 2018 to 2019 largely formed the basis for recovery estimates stated in the 2020 NI 43-101.

Subsequent concerns were raised about the test samples' selection with respect to organic carbon. Section 13.1.3 acknowledges that there may have been oversampling of high OC material.

The lithology of primary focus in the previous work was a black mudstone/siltstone referred to as the Cobra unit. This material is elevated in organic carbon content with respect to the surrounding sandstones. Initial estimates were that the Cobra material comprised approximately 15 percent of the Esaase Main deposit. This is subject to ongoing investigation.

An additional concern was related to the cyanide addition used in previous testwork program. Cyanide concentrations were significantly lower than typical process plant concentrations. It is believed to arise from a misinterpretation of cyanide concentration values quoted, i.e.:

- The process plant quotes cyanide concentrations in CN^- ppm. Average plant value in 2018 was 240 ppm, which equates to 450 ppm as NaCN
- Metallurgical laboratories in Australia understand cyanide concentration to refer to NaCN ppm. Therefore, the baseline 300 ppm NaCN used in almost all of the 2018 to 2019 testwork. This equates to only 165 ppm CN^- in plant terminology (CN^-).

As a result of the above concerns, it was decided to revisit the Esaase recovery modelling. This involved a comprehensive test program that included samples that more broadly, and representatively, portray the Esaase Main pit mineralized domains. Testing also involved higher cyanide additions.

13.2.1 Sample Selection Criteria

Sample selection for 2021 metallurgical test work at Esaase was completed in March of that year by Asanko Exploration team with support from Eric Chen, former VP Technical Services of Galiano Gold, in close consultation with Alan Eslake, Chief Metallurgist on site. The selection process followed the key technical considerations and criteria set by the Asanko technical and operation team:

1. Select from the existing exploration drillholes (as of March 2021)
2. Select core samples only (in order to avoid potential ambiguity in interpretation of test results from RC samples)
3. Select samples primarily from in the Fresh zone, with small portion from Transition zone. No sample from Oxide zone
4. Entire sample set to represent a range of the ore grade materials and have fair coverage of different mineralized zones and litho-stratigraphic domains within the prospect Esaase main resource pit. The 2019 PFS Esaase resource pit shell is used as reference
5. Each interval sample was composed of a series of consecutive drillhole core increments that represent multi-bench mining volumes. Each sample, when grouped with adjacent samples, represents bulk tonnage of material that approximates the amount processed in a roughly 2-3 month period (~1 Mt) at the process plant
6. Each sample was targeted to provide a minimum 15 kg in mass.

Leapfrog Geo 3D software was used to assist the visual and volumetric evaluation of drillhole samples and spatial coverage. Drillholes were displayed and reviewed in 2D and 3D with logged geology, assays, mineralized domain, litho-stratigraphic domain, oxidation, structure and other available geological models as of March 2021, with drillhole intervals selected following the criteria as described above.

Each selected sample was made of a series of individual increments (~1-2 m) of a drillhole, with accumulated average interval length of 20 m.

The preliminary list of selected samples was generated in .csv format with all the individual sample intervals coded with original assays, logged and modelled lithology, alteration, oxidation and mineralized domain. The preliminary list was thoroughly checked and verified with the physical drill cores by the field team, and final selection of samples made with agreement of the site and corporate team. The selected cores were subsequently cut into quarters and each individual interval bagged separately to allow flexibility in managing sample re-compositing if deemed necessary.

The location of final selected samples for metallurgical test work in March 2021 is illustrated in Figure 13-1 (plan view) and Figure 13-2 (long section).

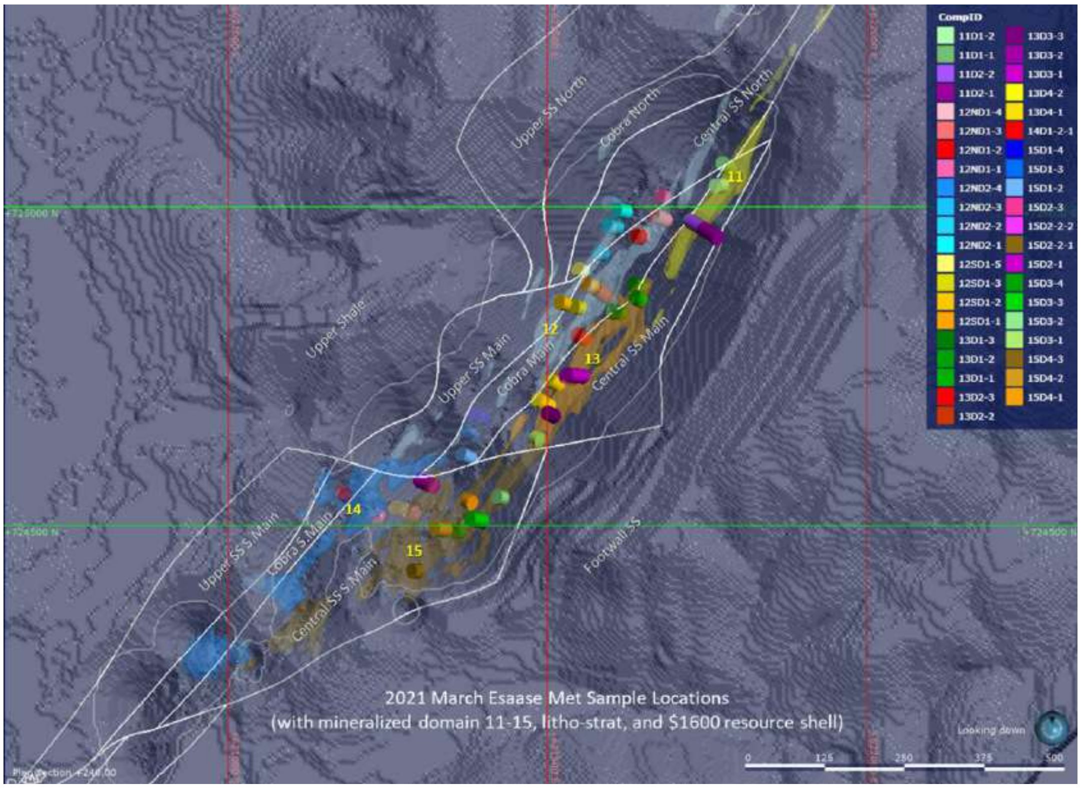


Figure 13-1 Esaase Mineralized Domains and Location of Metallurgical Samples (Plan View)

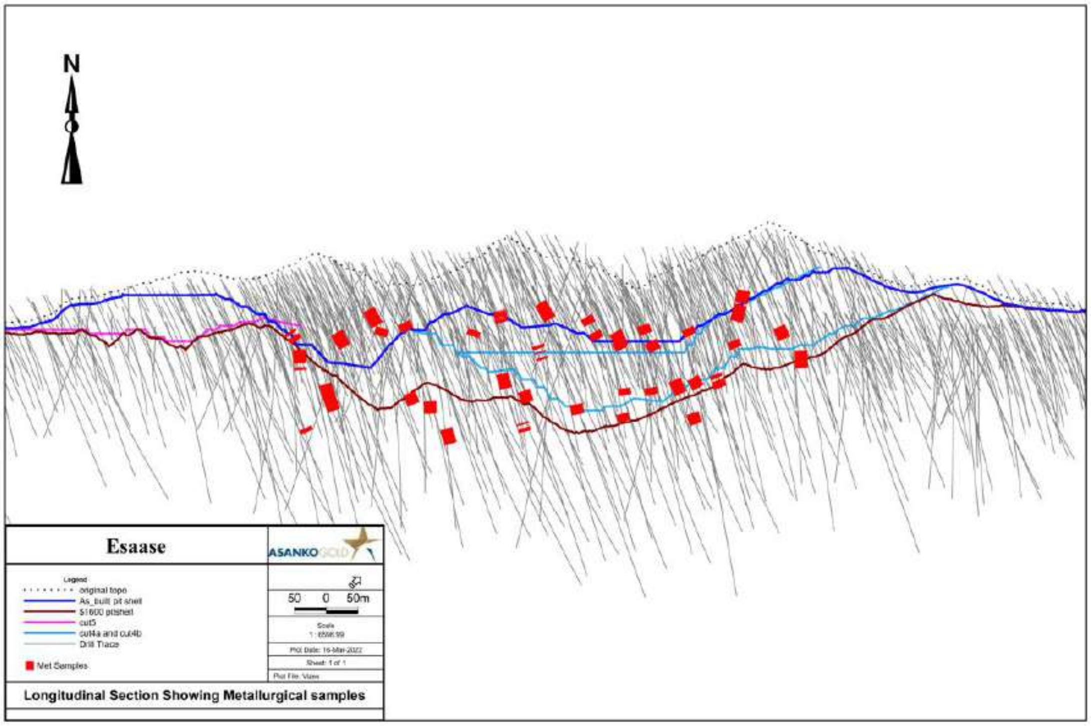


Figure 13-2 Esaase Mineralized Domains and Location of Metallurgical Samples (Long Section)

ALS Metallurgy in Perth, Australia undertook all metallurgical testwork.

The significant number of core increments totalling 838 in number, represented 964 m of total length from 36 holes. Portions of each individual core increment were retained to enable additional testing if required.

Two main tranches of tests were completed. The initial bulk composites' results returned some low recoveries (under conditions of 80% passing 106 µm, 15 g/L activated carbon, 600 ppm NaCN initial concentration and 250 ppm NaCN maintained thereafter, 24-hour retention time), and the decision was then made to test the composites constituents individually for higher definition (i.e. variability).

- Initially, tests were completed on 14 bulk composites representing the main mineralized zones. With the exception of two composites, each was comprised of intervals from multiple holes. Combined interval lengths averaged 69 m. These may be termed as 'global' composites as they contained full-length intervals without application of a cut-off grade to the increments. These tests were carried out at 600 ppm NaCN initial concentration.
- Subsequently, 42 variability composites were created from the individual hole intervals. In some instances, the intervals were further divided along their length. Increments below 0.5 g/t Au were omitted with 1 m samples below this grade included as skin dilution either side of the selection. Average interval length of these samples was 20 m. These tests were carried out at 1,000 ppm NaCN initial concentration in order to assess any benefit of higher concentration on recovery.

All composites were created on an equal weight per metre basis. Increments were generally 1 m length. Some intervals were created from 2 m lengths. Core sizes available included PQ, HQ and NQ.

Table 13-4 provides the bulk and variability composites' hole details. This includes the expected gold grades as calculated from the core increments on a weighted (length) basis. Exploration assays had been carried out at Intertek, Tarkwa by 50 g charge fire assay method.

Table 13-4 Hole and Interval Data With Expected Composite Gold Head Grades (Esaase)

DD Data			Bulk Composites			Variability Samples	
Hole ID	From	To	Bulk Composite ID	Expected Au Grades (from Core Assays)		Variability Composite ID	Expected Au Grades g/t
				Hole g/t	Comp g/t		
KEDD546	192	222	11D1	2.89	1.99	11D1-1	6.49
KEDD727	158	180		0.76		11D1-2	1.13
KE6001C	119	159	11D2	2.52	2.52	11D2-1	0.86
	159	190.5				11D2-2	1.67
KEDD096	214	230	12ND1	0.94	2.75	12ND1-1	0.94
KEDD761	129	143		2.39		12ND1-2	2.39
KEDD530	257.8	288		5.09		12ND1-3	5.09
KEDD536	284	301		1.26		12ND1-4	1.26
KEDD531	224	247	12ND2	1.04	1.51	12ND2-1	1.04
KEDD536	207	235		1.52		12ND2-2	1.52
KEDD872	215	219		1.42		12ND2-3	1.42
KEDD820	278	301		2.02		12ND2-4	1.54
KE6008C	99	119	12SD1	0.94	0.78	12SD1-1	1.02
KE6014C	63	79		0.55		12SD1-2	0.48
	97	113				12SD1-3	0.62
KEDD334	193.9	210		1.05		12SD1-5*	1.05
KE6004C	77	97	13D1	0.96	1.25	13D1-1	0.96
KEDD332	106.2	126		2.20		13D1-2	2.20
KEDD763	118	148		0.82		13D1-3	0.98
KEDD335	273	301	13D2	0.82	1.19	13D2-2	0.92
KEDD326	253	276		1.57		13D2-3	1.76
KE6007C	129	165	13D3	2.08	1.71	13D3-1	2.33
KE6013C	179	205		1.61		13D3-2	1.61
KEDD709	99.2	122		1.13		13D3-3	1.37
KEDD532	251	278	13D4	1.32	2.59	13D4-1	1.80
KEDD303	238	272		4.38		13D4-2	4.38
KEDD336	324	345		0.53		13D4-3**	0.82
KEDD949	95	107	14D1	0.83	0.83	14D1-2-1	1.18
	107	135				14D1-2-2	1.00
KEDD520	219.85	248	15D1	0.64	1.04	15D1-2	0.90
KEDD151	216	241		0.90		15D1-3	0.97
KEDD829	273	303		1.53		15D1-4	2.09
KE6006C	235	275	15D2	0.85	0.87	15D2-1	0.85
KEDD6031	213	240		0.73		15D2-2-1	0.75
	240	265				15D2-2-2	1.00
KEDD099	284	294		1.64		15D2-3	1.81
KE6005C	152	166	15D3	1.76	1.67	15D3-1	1.76
KEDD750	100	117		1.60		15D3-2	1.60
KEDD722	114	147		1.53		15D3-3	1.63
KEDD723	186	201		1.97		15D3-4	2.11
KE6006C	139	155	15D4	0.91	1.23	15D4-1	1.11
KEDD723	138	168		1.15		15D4-2	1.29
KEDD721	118	138		1.74		15D4-3	1.74

*Note: *12SD1-5 variability not tested due to anomalous head grade after composition*
***13D4-3 not included in variability testing due to lack of representivity*

13.2.2 Bulk Composites Testing (ALS A22281)

Testing methodology of the bulk composites included the following main steps:

- Coarse crushing and sub-sampling of each individual increment, creation of composites for testing
- Head assays Au, Ag, Cu, As, total and organic carbon, total and sulphide sulphur, ICP 26 element scan
- Gravity/CIL recovery simulations under current process plant operating conditions
  - Grind size 80% passing 106 µm
  - The ground sample was passed through a laboratory Knelson KC-MD3 centrifugal concentrator.
  - The free gold in the gravity concentrate was recovered by mercury amalgamation. The amalgamation tail and gravity tail were combined and then subjected to a pre-leach conditioning step before CIL cyanide leach
- Size by size analyses on CIL feed and residue
- Diagnostic analyses on final CIL tails to estimate deportment of unrecovered gold i.e.
  - Additional cyanide recoverable
  - Organic carbon associated
  - Sulphides associated
  - Silicates associated

Note: 2 samples had the gravity tail CIL tests completed in duplicate for quality control purposes.

The same methodology was subsequently applied to the variability composites with some exclusions including elimination of intermittent leach sampling and reduction of assays to focus on gold. Size deportment and diagnostic analyses on residues were also omitted.

Grind size optimisation tests were not undertaken as part of this project, with the standard mill P80 of 106 µm used for all tests.

Head assays were carried out using the following methods:

- Gold – 50 g fire assay with AAS finish
- Total sulphur – CS 2000 (LECO furnace equivalent)
- Sulphide sulphur – sodium carbonate digest to remove sulphates, followed by CS 2000
- Total carbon – CS 2000 (LECO furnace equivalent)
- Organic carbon – hydrochloric acid digest to remove carbonates, followed by CS 2000
- Multi element scans are a mix of 4 acid digest (including HF) and sodium peroxide fusion. All are inductively coupled plasma optical emission spectroscopy (ICPOES) finish

Table 13-5 Esaase Bulk Composites – Main Elements of Interest (ALS A22281)

ANALYTE	Ag (ppm)	As (ppm)	Au I g/t	Au II g/t	C_{total} (%)	$C_{organic}$ (%)	Cu (ppm)	S_{total} (%)	$S_{sulphide}$ (%)
COMP 11D1	0.3	595	0.79	0.69	0.57	0.45	37	0.18	0.16
COMP 11D2	<0.3	495	0.53	0.57	0.48	0.24	35	0.20	0.16
COMP 12SD1	0.3	690	3.65	6.25	0.63	0.36	34	0.20	0.16
COMP 12ND1	0.3	460	1.26	1.16	0.63	0.42	178	0.32	0.26
COMP 12ND2	0.3	800	1.23	1.13	0.93	0.42	65	0.40	0.36
COMP 13D1	<0.3	395	0.91	0.77	0.66	0.42	32	0.30	0.26
COMP 13D2	0.3	520	0.83	0.84	0.87	0.33	53	0.32	0.28
COMP 13D3	0.3	490	0.97	2.89	0.72	0.27	42	0.18	0.16
COMP 13D4	<0.3	430	2.03	2.04	1.32	0.24	30	0.24	0.24
COMP 14D1	0.3	945	0.46	0.47	1.92	0.54	27	0.30	0.28
COMP 15D1	<0.3	1075	1.26	0.58	1.44	0.30	34	0.32	0.20
COMP 15D2	0.3	355	0.62	0.51	1.41	0.42	33	0.22	0.20
COMP 15D3	0.3	1275	1.95	1.48	1.17	0.30	32	0.38	0.28
COMP 15D4	<0.3	660	1.26	1.27	1.02	0.24	29	0.30	0.30

13.2.2.1 Comparison of Gold Head Assays (Bulk Composites)

Expected composite gold grades were calculated from the fire assay grades of the individual core increments on a length weighted basis. They are compared with the head grades calculated from the gravity/CIL recovery tests (8 kg scale). See Table 13-6.

- Variation between duplicate fire assay results indicates the presence of coarse free gold and a ‘nugget effect’. This phenomenon is a significant trait of Esaase material
- This ‘nugget effect’ is considered to be reduced in the case of the calculated head value due to the larger (8 kg) feed mass, as opposed to the 50 g fire assay feed charge
- In some instances, there is significant variation between the expected gold grade (weighted average of fire assay on all core increments) and that as calculated from the recovery testwork. This is symptomatic of the free gold ‘nugget effect’.

Table 13-6 Esaase Bulk Composites – Comparison of Gold Head Assays (g/t Au)

Composite ID	Expected (Core Grades)	ALS Duplicate Fire Assay	Fire Assay Average	ALS Calculated Head from 8 kg Recovery Test	% Difference (Expected vs Calculated)
11D1	1.99	0.79, 0.69	0.74	1.07	-86
11D2	2.52	0.53, 0.57	0.55	1.17	-116
12ND1	2.75	1.26, 1.16	1.21	1.63	-68
12ND2	1.51	1.23, 1.13	1.18	1.07	-41
12SD1	0.78	3.65, 6.25	4.95	1.47	47
13D1	1.25	0.91, 0.77	0.84	1.22	-3
13D2	1.19	0.83, 0.84	0.84	1.11	-8
13D3	1.71	0.97, 2.89	1.93	1.49	-15
13D4	2.59	2.03, 2.04	2.04	4.71	45
14D1	0.83	0.46, 0.47	0.47	0.85	2
15D1	1.04	1.26, 0.58	1.84	0.83	-26
15D2	0.87	0.62, 0.51	0.57	0.53	-65
15D3	1.67	1.95, 1.48	1.72	2.14	22
15D4	1.23	1.26, 1.27	1.27	1.06	-17
average	*1.57*		*1.44*	*1.45*	

Multi element ICP scans indicate arsenic grades in the range of 355 to 1275 ppm for a simple average of 656 ppm.

Table 13-7 Esaase Bulk Composites – Multi-element Analysis (ALS A22281) – Part 1

ANALYTE	11D1	11D2	12SD1	12ND1	12ND2	13D1	13D2
Ag(ppm)	0.3	<0.3	0.3	0.3	0.3	<0.3	0.3
As(ppm)	595	495	690	460	800	395	520
Al(%)	8.48	8.32	9.04	7.00	8.16	8.16	7.52
Ba(ppm)	500	500	500	400	400	500	500
Be(ppm)	<5	<5	<5	<5	<5	<5	<5
Bi(ppm)	<10	<10	<10	<10	<10	<10	<10
Ca(%)	0.6	0.4	0.3	0.4	0.4	0.2	1.0
Cd(ppm)	<5	<5	<5	<5	<5	<5	<5
Co(ppm)	65	50	70	140	90	65	85
Cr(ppm)	120	140	160	90	100	140	100
Cu(ppm)	37	35	34	178	65	32	53
Fe(%)	4.64	4.44	3.44	3.12	4.78	4.72	4.64
K(%)	1.69	1.70	1.72	1.33	1.73	1.62	1.44
Li(ppm)	65	60	65	65	75	70	65
Mg(%)	1.04	0.96	0.60	0.76	0.84	0.72	1.16
Mn(ppm)	400	200	100	300	700	300	500
Mo(ppm)	<5	<5	<5	<5	<5	<5	<5
Na(%)	1.30	1.22	1.65	1.12	1.02	0.99	1.55
Ni(ppm)	60	55	65	50	60	60	55
P(ppm)	600	600	300	300	400	500	600
Pb(ppm)	<5	<5	<5	<5	<5	<5	5

ANALYTE	11D1	11D2	12SD1	12ND1	12ND2	13D1	13D2
SiO2(%)	62.4	61.2	65.2	69.2	62.8	65.6	65.6
Sr(ppm)	200	200	240	200	200	160	200
Ti(ppm)	4400	4400	4400	3400	5600	4200	3800
V(ppm)	112	110	110	86	102	110	98
Y(ppm)	<100	<100	<100	<100	<100	<100	<100
Zn(ppm)	134	120	88	84	120	124	76

Table 13-8 Esaase Bulk Composites – Multi-element Analysis (ALS A22281) – Part 2

ANALYTE	13D3	13D4	14D1	15D1	15D2	15D3	15D4
Ag(ppm)	0.3	<0.3	0.3	<0.3	0.3	0.3	<0.3
As(ppm)	490	430	945	1075	355	1275	660
Al(%)	8.60	6.96	7.80	6.92	7.96	7.08	7.84
Ba(ppm)	600	400	400	500	500	400	500
Be(ppm)	<5	<5	<5	<5	<5	<5	<5
Bi(ppm)	<10	<10	<10	<10	<10	<10	<10
Ca(%)	0.1	1.1	1.3	1.0	1.0	0.8	0.4
Cd(ppm)	<5	<5	<5	<5	<5	<5	<5
Co(ppm)	45	75	80	90	50	110	75
Cr(ppm)	120	90	100	100	140	120	100
Cu(ppm)	42	30	27	34	33	32	29
Fe(%)	3.26	4.38	4.36	4.34	4.20	4.60	4.46
K(%)	1.80	1.30	1.50	1.47	1.65	1.35	1.56
Li(ppm)	60	50	60	50	55	55	60
Mg(%)	0.48	1.12	1.04	1.12	1.00	1.00	0.92
Mn(ppm)	300	500	900	600	500	500	500
Mo(ppm)	<5	<5	<5	<5	<5	<5	<5
Na(%)	1.06	1.58	1.45	1.55	1.61	1.58	1.29
Ni(ppm)	50	50	55	55	50	55	60
P(ppm)	300	600	500	600	600	600	600
Pb(ppm)	<5	<5	<5	<5	5	5	5
SiO2(%)	64.4	66.0	56.2	63.6	62.0	66.0	64.0
Sr(ppm)	200	200	200	200	240	200	200
Ti(ppm)	4600	3600	3800	3400	4000	3600	4200
V(ppm)	116	86	88	88	104	90	102
Y(ppm)	<100	<100	<100	<100	<100	<100	<100
Zn(ppm)	102	80	82	82	100	88	130

13.2.2.2 Bulk Composites Gravity/CIL Recovery Tests (ALS A22281)

Eight kg of each composite was milled to P80 of 106 µm and passed through a Knelson Concentrator to recover a free gold concentrate. The concentrate was then amalgamated with mercury to remove the free gold particles. The Knelson tail and amalgamation tails were recombined with portions split for gold assay and CIL testing (2 kg scale). Two of the samples had duplicate CIL tests completed for quality control performances.

Table 13-9 Esaase Bulk Composites – Summary of Gravity/CIL Recovery Results

Composite ID	Gravity Gold (%)	CIL Unit Recovery (%)	Total Gold Extraction (%)	Residue Grade (Au g/t)	Calculated Head (Au g/t)	Assay Head (Au g/t)	NaCN Consumed (kg/t)	$Ca(OH)_2$ Consumed (kg/t)
11D1	47.0	52.4	74.8	0.27	1.07	0.79, 0.69	0.35	1.2
11D2	58.1	84.7	93.6	0.08	1.17	0.53, 0.57	0.37	0.7
12ND1 (dup. CIL tests	62.7	74.6	90.5	0.16	1.63	1.26, 1.16	0.20	0.4
	62.5	74.8	90.5	0.16	1.64		0.27	0.4
12ND2	32.2	61.4	73.8	0.28	1.07	1.23, 1.13	0.30	0.7
12SD1	68.1	70.1	90.5	0.14	1.47	3.65, 6.25	0.27	0.4
13D1 (dup. CIL tests	54.3	52.8	78.4	0.27	1.23	0.91, 0.77	0.30	0.6
	55.1	59.5	81.8	0.22	1.21		0.32	0.5
13D2	39.4	74.6	84.6	0.17	1.11	0.83, 0.84	0.22	0.4
13D3	55.8	87.9	94.6	0.08	1.49	0.97, 2.89	0.25	0.5
13D4	78.8	79.0	95.5	0.21	4.71	2.03, 2.04	0.22	0.4
14D1	46.7	39.3	67.6	0.28	0.85	0.46, 0.47	0.30	0.5
15D1	37.0	66.4	78.9	0.18	0.83	1.26, 0.58	0.20	0.4
15D2	42.6	30.6	60.2	0.21	0.53	0.62, 0.51	0.27	0.5
15D3	66.5	85.4	95.1	0.11	2.14	1.95, 1.48	0.22	0.5
15D4	46.1	78.0	88.2	0.13	1.06	1.26, 1.27	0.27	0.5

13.2.2.3 Bulk Composites Gold by Size Deportment

Each composite was subjected to size-by-size analysis to determine the gold deportment by size fraction. This was carried out on both the CIL feed (gravity tail) and CIL final residues.

As is currently observed in the plant, recovery from Esaase is susceptible to gold losses via lower gold liberation, i.e., the material tested in this program has shown a dependency of gold recovery on grind size.

The average of all CIL feed grades indicated a reduction in grade for both the finer and coarser fractions. This trend was evident in all samples.

The average of all CIL residues, Figure 13-3, shows a linear relationship of higher grades with coarser particle size. Again the trend was observed in all samples.

The reliance of recovery upon liberation is further demonstrated in Figure 13-4 which shows the recovery by individual size fractions. This was calculated based on feed versus tail grades.

Fractions coarser than 75 µm, which accounted for circa 25% of the mass in these tested pulps, show a reduction in recovery.

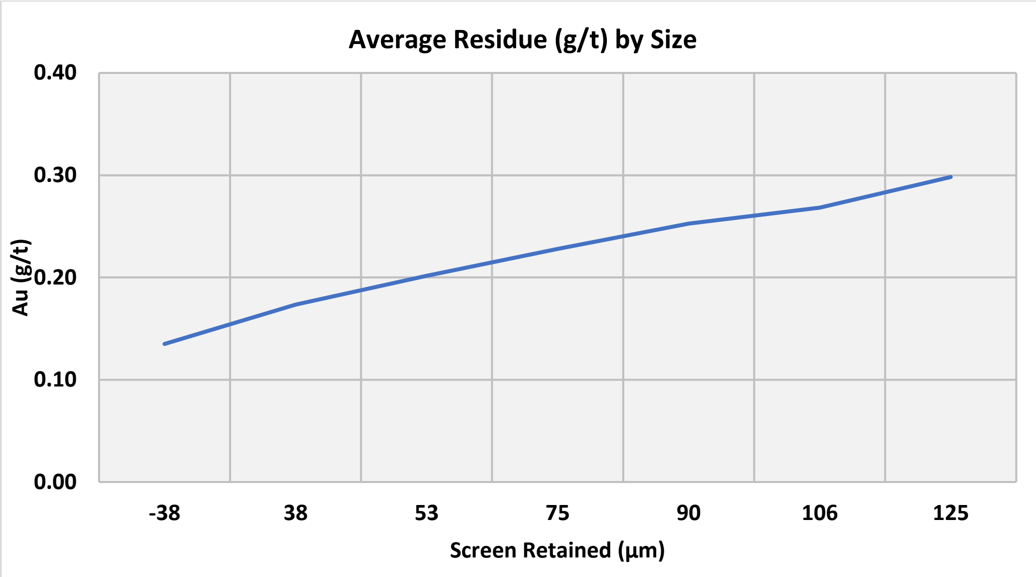


Figure 13-3 Esaase Average CIL Residue Grade (g/t) by Size

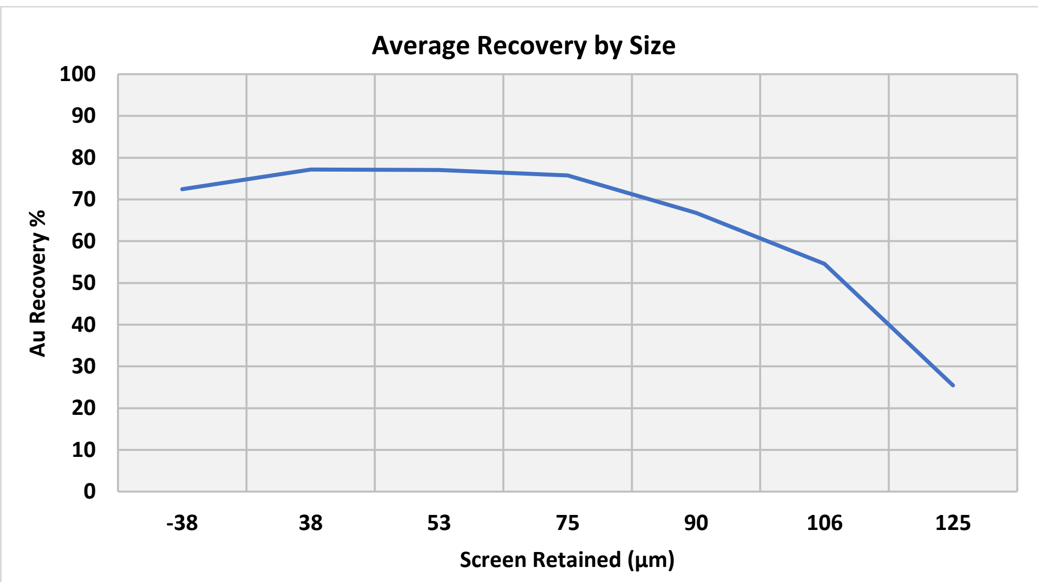


Figure 13-4 Esaase Average CIL Stage Recovery (%) by Size

13.2.2.4 Leach Residue Diagnostic Analysis – Bulk Composites

In order to assess the deportment of gold lost to residue, a diagnostic analysis was completed on each sample's CIL residue. A four-stage approach was employed in order to determine:

- Residual cyanide soluble gold
- Gold associated with organic carbon
- Sulphide locked gold, and
- Silicates locked gold

Note, the carbon association stage is by acetonitrile (CH_3CN) solvent strip under aggressive conditions. Additional gold that is not carbon associated can also be removed from the solids. The values are somewhat presumptive as a result.

Results as summarized in Table 13-10 indicate that for the seven samples with lowest overall recoveries (<85%), the majority of the unrecovered gold is extracted in the acetonitrile strip i.e. inferred organic carbon association.

Table 13-10 Esaase Bulk Composites – Diagnostic Gold Assays on Final Residues

					Diagnostic Extracted Au Grades (g/t)					Recovery Loss % Points		
SAMPLE ID	Total Gold Extract-ion %	Residue Au Grade (g/t)	Calc. Au Head (g/t)	OC Head %	Extended CIL*	Ace-tonitrile (Carbon Assoc.)**	Aqua Regia Soluble (Sulphide Assoc.)	Fire Assay (SiO_2)	Calc. Total Residue Au (g/t)	OC	AR Soluble	SiO_2
11D1	74.8	0.27	1.07	0.45	0.04	0.17	0.04	0.06	0.27	16.0	3.7	5.6
11D2	93.6	0.08	1.17	0.24	0.06	0.00	0.01	0.01	0.02	1.1	2.7	2.7
12ND1	90.5	0.16	1.63	0.36	0.00	0.11	0.02	0.04	0.17	6.1	1.1	2.3
12ND2	73.8	0.28	1.07	0.42	0.04	0.13	0.06	0.03	0.22	15.7	7.0	3.5
12SD1	90.5	0.14	1.47	0.42	0.00	0.08	0.04	0.02	0.14	5.5	2.7	1.3
13D1	80.1	0.24	1.22	0.42	0.02	0.19	0.04	0.02	0.23	16.6	0.0	1.7
13D2	84.6	0.17	1.11	0.33	0.04	0.09	0.02	0.02	0.13	10.8	2.3	2.3
13D3	94.6	0.08	1.49	0.27	0.00	0.08	0.02	0.01	0.11	3.9	1.0	0.5
13D4	95.5	0.21	4.71	0.24	0.00	0.13	0.02	0.02	0.17	3.4	0.5	0.5
14D1	67.6	0.28	0.85	0.54	0.00	0.25	0.04	0.03	0.32	25.2	4.1	3.1
15D1	78.9	0.18	0.83	0.30	0.00	0.16	0.02	0.03	0.21	16.1	2.0	3.0
15D2	60.2	0.21	0.53	0.42	0.00	0.13	0.04	0.03	0.20	25.6	8.1	6.1
15D3	95.1	0.11	2.14	0.30	0.00	0.06	0.04	0.02	0.12	2.5	1.6	0.8
15D4	88.2	0.13	1.06	0.24	0.00	0.08	0.03	0.02	0.13	7.1	2.8	1.9

*Note: * stand-alone test to gauge initial CIL efficiency*
*** less extended CIL g/t*

13.2.2.5 Discussion – Bulk Composites Recoveries

Plotting of total recoveries has seemingly indicated two trend relationships:

1. Recovery increase with increasing head grade

- Figure 13-5 and Figure 13-6 show the head grades, as calculated from the gravity/CIL recovery tests, against the respective total recoveries. The relationship is not strongly definitive. For example, a sample of head grade 1.07 g/t gave 74% recovery whereas one of 1.17 g/t returned 94%.
- Table 13-11 shows the data to indicate increasing recoveries (simple averages) with higher minimum feed grades.

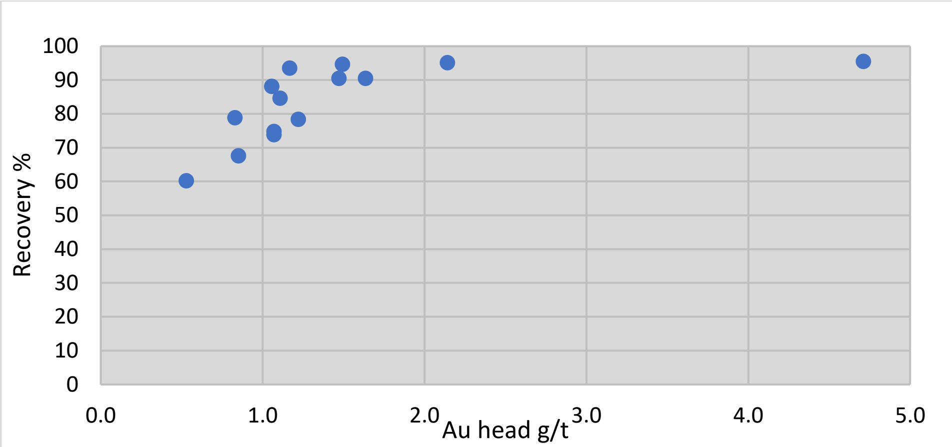


Figure 13-5 Head Grade vs Total Recovery – Esaase Bulk Composites

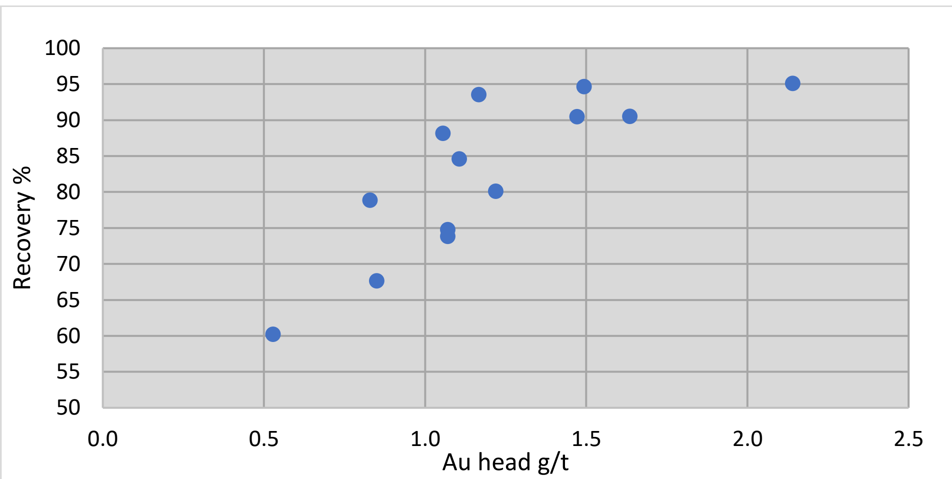


Figure 13-6 Head Grade vs Total Recovery, with High Grade Outlier Omitted – Esaase Bulk Composites

Table 13-11 Esaase Bulk Composites – Recoveries at Increasing Cut-off Grades (g/t)

Head Grade (g/t) Base	0.53	0.8	1.0	1.3
No. of composites	14	13	11	5
Average recovery %	83.4	85.2	87.4	93.3

2. The relationship between organic carbon (OC) and CIL gold recovery from gravity tails

- Figure 13-7 and Figure 13-8 respectively depict the relationship between OC, and:
  - Gold removed from the final residue during acetonitrile strip, expressed in g/t
  - Gold recovery (unit) from CIL tests

Both figures show a strong relationship between OC grade and gold recovery. This relationship can also be highly variable. For example, Figure 13-8 contains four points that highlight the challenges in using OC grades to assess gold recovery performance. Equal OC contents of 0.42% have given a range CIL recoveries from 30 to 70%.

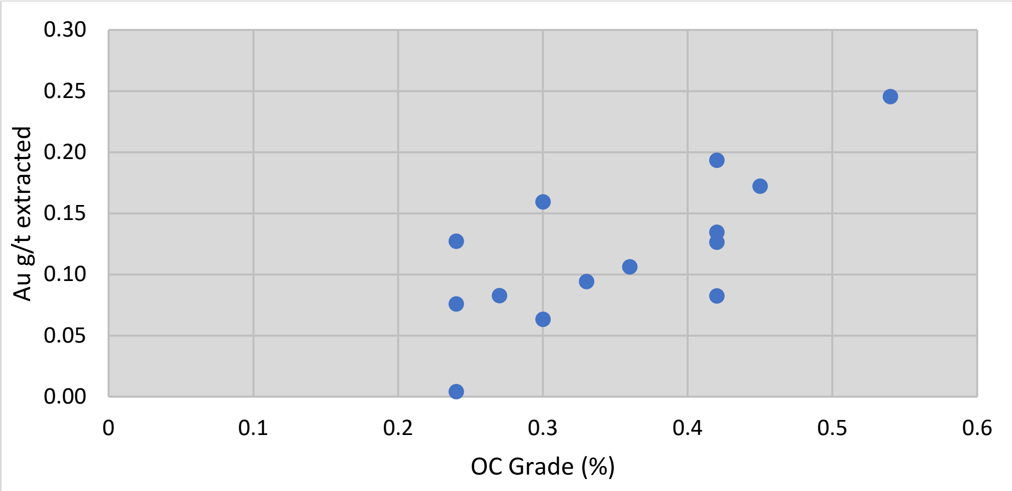


Figure 13-7 Gold Removed from Final Residue During Acetonitrile Strip vs. OC Content – Esaase Bulk Composites

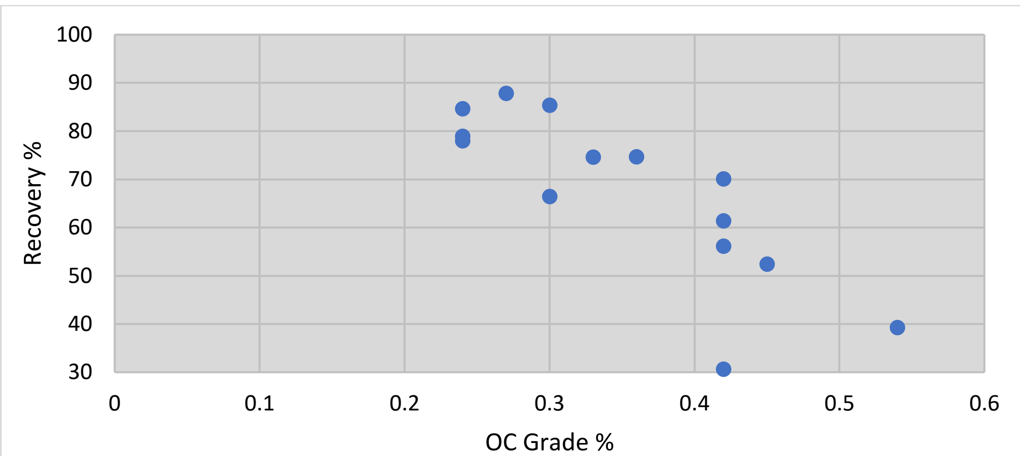


Figure 13-8 Organic Carbon Grade vs. CIL Stage Recovery – Esaase Bulk Composites

13.2.2.6 Conclusions from Bulk Composites Testing

Comments on the bulk composites' gravity/CIL testwork results are as follows:

- Gravity recoverable gold content ranged from 32 to 79% for an average 53%
- Total gold recovery ranged from 60.2% to 95.5% for an average 83.7%
- Leach residue (final tails) grades ranged from 0.08 to 0.28 g/t for an average 0.18 g/t
- Leach kinetics were generally rapid with the bulk of leaching completed in 8 hours
- Reagent consumptions were low for both cyanide and hydrated lime

The results indicated low recoveries for some composites, attributable to the presence of organic carbon. These findings align with the 2018/19 testwork.

Mapping of the bulk composites' recovery results proved inconclusive as a contributor to recovery modelling. It was decided that greater spatial definition was required in order to create any links between zones/lithologies and recovery expectations, i.e. variability testing.

13.2.3 Variability Samples Testing (ALS A22281)

The bulk composites constituents were tested as individual intervals. In some cases, where a lithological boundary was thought to exist, these intervals were further divided. Hole data for these intervals is provided in Table 13-4.

Further refinement of the samples was carried out by removing material that would not be mined as ore, i.e. a 0.5 g/t gold grade cut off was applied and a 1 m ‘skin dilution’ applied before and after the grade segments. In instances where, for example, an isolated metre increment was of grade yet surrounded by low grade material, it was omitted from the composite. This approach resulted in the removal of 15% of the drill core increments in total.

Head assays were carried out on the main elements of interest and are provided in Table 13-12. No multi element assays were undertaken.

Table 13-13 compares the gold head assays – expected as from the exploration core assays, prepared test samples head assays and those as calculated from the subsequent gravity/CIL recovery tests. Significant scatter of gold grades is again evident.

Table 13-12 Esaase Variability Samples Head Assays

Sample ID	As (ppm)	Au (ppm)	Au_rpt1 (ppm)	Au avg (ppm)	C_{total} (%)	$C_{organic}$ (%)	S_{total} (%)	$S_{sulphide}$ (%)
11D1-1	1645	3.18	3.51	3.35	1.11	0.45	0.50	0.42
11D1-2	505	0.38	0.42	0.40	0.48	0.45	0.16	0.12
11D2-1	395	0.37	0.46	0.42	0.48	0.27	0.26	0.12
11D2-2	945	0.38	0.29	0.34	1.05	0.33	0.56	0.42
12D1-1	225	0.97	0.97	0.97	0.51	0.51	0.46	0.40
12ND1-2	160	2.41	0.95	1.68	0.42	0.39	<0.02	<0.02
12ND1-3	400	0.92	0.61	0.77	0.66	0.42	0.38	0.36
12ND1-4	1095	0.80	0.62	0.71	0.75	0.30	0.32	0.28
12ND2-1	1180	0.79	0.71	0.75	0.72	0.66	0.54	0.46
12ND2-2	1010	1.66	1.72	1.69	0.96	0.51	0.50	0.44
12ND2-3	405	13.0	0.25	6.63	0.66	0.33	0.24	0.20
12ND2-4	1285	1.12	1.06	1.09	1.17	0.48	0.44	0.38
12SD1-1	735	13.3	14.7	14.00	0.63	0.63	0.24	0.20
12SD1-2	895	0.76	0.47	0.62	0.45	0.42	0.32	0.28
12SD1-3	1440	0.35	0.37	0.36	0.48	0.45	0.22	0.20
12SD1-5	30	<0.02	<0.02	<0.02	0.90	0.15	0.04	0.04
12SD1-5	Repeat	<0.02	<0.02	Anomalous – sample not progressed to recovery testing				
13D1-1	490	0.80	0.76	0.78	0.48	0.48	0.30	0.28
13D1-2	400	1.08	0.82	0.95	0.57	0.30	0.24	0.22
13D1-3	410	0.42	0.39	0.41	0.78	0.57	0.24	0.22
13D2-2	1125	0.96	0.75	0.86	0.90	0.33	0.42	0.40
13D2-3	345	0.94	0.81	0.88	0.93	0.27	0.30	0.28
13D3-1	795	1.04	1.87	1.46	0.24	0.24	0.14	0.12
13D3-2	325	1.29	1.41	1.35	1.53	0.39	0.26	0.24
13D3-3	530	0.58	0.62	0.60	0.96	0.21	0.22	0.20
13D4-1	515	0.74	1.88	1.31	1.32	0.33	0.36	0.32
13D4-2	545	1.26	1.94	1.60	1.44	0.24	0.28	0.26
14D1-2-1	1085	0.53	0.77	0.65	2.13	0.51	0.40	0.38
14D1-2-2	140	0.73	0.77	0.75	1.71	0.33	0.32	0.28
15D1-2	715	0.70	0.86	0.78	1.53	0.27	0.30	0.20
15D1-3	1015	1.37	1.35	1.36	1.62	0.36	0.44	0.32
15D1-4	1100	3.58	16.9	10.24	1.05	0.21	0.26	0.18
15D2-1	525	0.59	0.66	0.63	1.41	0.54	0.24	0.22
15D2-2-1	160	0.52	0.61	0.57	1.44	0.21	0.20	0.18
15D2-2-2	630	2.72	3.47	3.10	1.29	0.21	0.28	0.26
15D2-3	260	0.23	0.27	0.25	1.32	0.36	0.12	0.10
15D3-1	490	0.76	0.73	0.75	1.35	0.21	0.26	0.24
15D3-2	2810	3.36	2.50	2.93	1.35	0.33	0.42	0.40
15D3-3	715	0.81	0.81	0.81	0.93	0.39	0.40	0.32
15D3-4	215	0.83	1.89	1.36	1.29	0.30	0.20	0.20
15D4-1	575	1.93	1.75	1.84	0.84	0.12	0.28	0.26
15D4-2	585	0.84	0.91	0.88	1.02	0.33	0.30	0.28
15D4-3	1125	0.79	0.90	0.85	0.96	0.30	0.30	0.28

Table 13-13 Esaase Variability Samples – Comparison of Gold Head Assays (g/t)

Sample ID	Expected (Core Grades)	ALS Duplicate Fire Assay	Fire Assay Average	ALS Calc. Head from 8 kg Recovery Test	% Difference (Expected vs Calc.)
11D1-1	6.49	3.18, 3.51	3.35	3.50	46
11D1-2	1.13	0.38, 0.42	0.40	0.78	31
11D2-1	0.86	0.37, 0.46	0.42	1.47	-71
11D2-2	1.67	0.38, 0.29	0.34	0.41	75
12ND1-1	0.94	0.97, 0.97	0.97	1.29	-36
12ND1-2	2.39	2.41, 0.95	1.68	1.29	46
12ND1-3	5.09	0.92, 0.61	0.77	1.15	77
12ND1-4	1.26	0.80, 0.62	0.71	1.90	-51
12ND2-1	1.04	0.79, 0.71	0.75	0.80	23
12ND2-2	1.52	1.66, 1.72	1.69	1.61	-6
12ND2-3	1.42	13.0, 0.25	6.63	0.56	61
12ND2-4	1.54	1.12, 1.06	1.09	1.18	23
12SD1-1	1.02	13.3, 14.7	14.0 (excl.)	1.30	-27
12SD1-2	0.48	0.76, 0.47	0.62	0.69	-43
12SD1-3	0.62	0.35, 0.37	0.36	0.45	28
13D1-1	0.96	0.76, 0.78	0.78	0.97	-1
13D1-2	2.20	1.08, 0.82	0.95	12.0 (excl.)	-443
13D1-3	0.98	0.42, 0.39	0.41	1.12	-15
13D2-2	0.92	0.96, 0.75	0.86	0.87	5
13D2-3	1.76	0.94, 0.81	0.88	1.03	41
13D3-1	2.33	1.04, 1.87	1.46	1.99	15
13D3-2	1.61	1.29, 1.41	1.35	1.07	34
13D3-3	1.37	0.58, 0.62	0.60	1.28	7
13D4-1	1.80	0.74, 1.88	1.31	1.04	42
13D4-2	4.38	1.26, 1.94	1.60	3.36	23
14D1-2-1	1.18	0.53, 0.77	0.65	0.66	44
14D1-2-2	1.00	0.73, 0.77	0.75	1.05	-5
15D1-2	0.90	0.70, 0.86	0.78	1.22	-36
15D1-3	0.97	1.37, 1.35	1.36	1.70	-75
15D1-4	2.09	3.58, 16.9	10.2	3.78	-81
15D2-1	0.85	0.59, 0.66	0.63	0.72	15
15D2-2-1	0.75	0.52, 0.61	0.57	1.23	-62
15D2-2-2	1.00	2.72, 3.47	3.10	3.38	-237
15D2-3	1.81	0.23, 0.27	0.25 (excl.)	0.20 (excl.)	89
15D3-1	1.76	0.76, 0.73	0.75	1.21	32
15D3-2	1.60	3.36, 2.50	2.93	6.56	-310
15D3-3	1.63	0.81, 0.81	0.81	1.63	0
15D3-4	2.11	0.83, 1.89	1.36	1.01	52
15D4-1	1.11	1.93, 1.75	1.84	1.10	1
15D4-2	1.29	0.84, 0.91	0.88	1.48	-15
15D4-3	1.74	0.79, 0.90	0.85	0.73	58
average	1.65		1.47	*1.50*	-7

13.2.3.1 Variability Samples – Recovery Testing

Samples were subjected to gravity/CIL testing as per the bulk composites, with the exception of the kinetics sampling. Only final 24-hour products were assayed. For this suite of tests, it was decided to assess the effect of increased NaCN levels, an initial concentration of 1,000 ppm was employed. Activated carbon concentration was 15 g/L.

Table 13-14 Esaase Variability Samples Recovery Test Results

Sample ID	Gravity Gold (%)	CIL Unit Recovery%	Total Gold Extraction %	Residue Grade (Au g/t)	Calculated Head (Au g/t)	NaCN Cons. (kg/t)	$Ca(OH)_2$ Cons. (kg/t)
11D1 – 1	53.0	87.2	94.0	0.21	3.50	0.39	0.4
11D1 – 2	56.7	55.8	80.9	0.15	0.78	0.50	1.2
11D2 – 1	66.7	89.8	96.6	0.05	1.47	0.42	0.4
11D2 – 2	31.8	89.4	92.7	0.03	0.41	0.45	1.0
12ND1-1	66.8	88.3	96.1	0.05	1.29	0.31	0.4
12ND1-2	63.9	80.7	93.0	0.09	1.29	0.36	0.4
12ND1-3	49.7	86.2	93.1	0.08	1.15	0.31	0.4
12ND1-4	51.5	81.5	91.0	0.17	1.90	0.26	0.3
12ND2-1	27.7	86.2	90.0	0.08	0.80	0.47	0.7
12ND2-2	16.7	81.4	84.5	0.25	1.61	0.42	0.9
12ND2-3	55.4	75.9	89.3	0.06	0.56	0.31	0.5
12ND2-4	35.3	81.7	88.2	0.14	1.18	0.42	0.5
12SD1-1	47.3	82.4	90.8	0.12	1.30	0.44	0.4
12SD1-2	36.5	86.2	91.3	0.06	0.69	0.50	0.5
12SD1-3	37.2	89.4	93.3	0.03	0.45	0.39	0.4
13D1-1	37.5	74.4	84.0	0.16	0.97	0.42	0.5
13D1-2	92.4	89.0	99.2	0.10	12.0	0.45	0.4
13D1-3	44.2	80.0	88.9	0.13	1.12	0.47	0.5
13D2-2	19.8	80.7	84.5	0.14	0.87	0.34	0.3
13D2-3	33.5	81.8	87.9	0.13	1.03	0.31	0.3
13D3-1	65.6	91.9	97.2	0.06	1.99	0.31	0.4
13D3-2	26.7	87.9	91.1	0.10	1.07	0.31	0.3
13D3-3	55.2	87.0	94.2	0.08	1.28	0.34	0.5
13D4-1	25.9	86.4	89.9	0.11	1.04	0.31	0.3
13D4-2	47.9	92.8	96.3	0.13	3.36	0.40	0.3
14D1-2-1	21.6	72.9	78.8	0.14	0.66	0.45	0.5
14D1-2- 2	44.0	74.5	85.7	0.15	1.05	0.34	0.5
15D1-2	36.1	80.7	87.7	0.15	1.22	0.29	0.3
15D1-3	23.7	91.5	93.5	0.11	1.70	0.31	0.3
15D1-4	90.4	87.6	98.8	0.05	3.78	0.31	0.3
15D2-1	28.1	60.5	71.6	0.21	0.72	0.40	0.6
15D2-2-1	41.4	87.5	92.7	0.09	1.23	0.36	0.3
15D2-2-2	77.3	65.5	92.2	0.27	3.38	0.36	0.3
15D2-3	31.1	49.0	64.9	0.07	0.20	0.36	0.3
15D3-1	55.9	83.1	92.5	0.09	1.21	0.36	0.4
15D3-2	76.9	86.5	96.9	0.21	6.56	0.40	0.3
15D3-3	61.2	89.7	96.0	0.07	1.63	0.45	0.4
15D3-4	49.1	85.5	92.6	0.08	1.01	0.36	0.3
15D4-1	42.7	79.5	88.2	0.13	1.10	0.34	0.3
15D4-2	46.7	87.3	93.3	0.10	1.48	0.40	0.4
15D4-3	28.2	84.6	89.0	0.08	0.73	0.52	0.4

Comments on the variability composites' gravity/CIL testwork results are as follows:

- Gravity recoverable gold content ranges from 17% to a very high 92% for an average of 46%
- Total recovery ranged from 64.9% to an extremely high 99.2% for an average of 90.1%
- Leach residue grades ranged from 0.03 to 0.27 for an average of 0.11 g/t
- Leach kinetics were generally rapid, with the bulk of the leaching completed in 8 hours
- Average reagent consumptions were generally low for both cyanide and hydrated lime

The two samples that returned the extremes of calculated head values have not been included in the further results assessment:

- High: 13D1-2 at 12.0 g/t
- Low: 15D2-3 at 0.20 g/t

13.2.3.2 Comparison with Bulk Composites Recoveries

Table 13-15 shows the bulk composites recoveries as quoted in Section 13.2.2 along with the corresponding recoveries as determined from the variability samples results.

Variability results show the average of the intervals that comprised the bulk composites, on a weighted basis.

Table 13-15 Comparison of Esaase Bulk Composites Recoveries to Corresponding Constituents

Bulk Composite ID	Bulk Composite Total Recovery %	Corresponding Variability Samples Recovery %	Increase, Percentage Points
11D1	74.8	87.2	12.4
11D2	93.6	94.4	0.9
12ND1	90.5	93.3	2.7
12ND2	73.8	87.6	13.8
12SD1	90.5	92.1	1.6
13D1	80.1	90.5	10.4
13D2	84.6	86.3	1.7
13D3	94.6	95.2	0.6
13D4	95.5	94.0	-1.5
14D1	67.6	81.3	13.7
15D1	78.9	93.6	14.8
15D2	60.2	83.7	23.5
15D3	95.1	95.0	-0.1
15D4	88.2	90.9	2.8
Average	*83.4*	*90.4*	*6.9*

Shown graphically in Figure 13-9, significant increases are seen for the composites that returned the lower results in the bulk composite round of testing. It should be noted that, although the bulk and variability rounds of testing are not directly comparable due to the removal of low grade drill core increments, the recovery increases are attributed to the higher initial NaCN concentrations in the laboratory tests.

It should be noted however that, although laboratory batch tests require higher initial cyanide concentrations, further investigation is required into continuous plant requirements. Significantly higher cyanide additions than current levels (circa 640 ppm) may have implications for detoxification and tailings management.

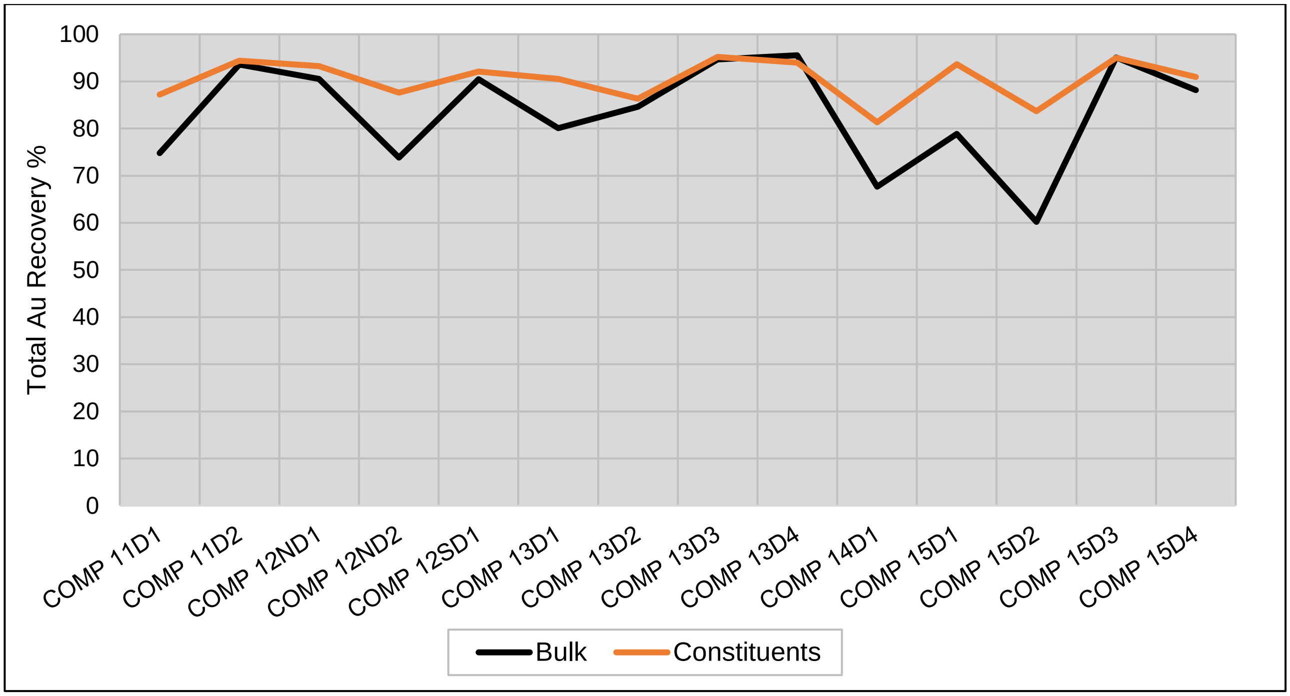


Figure 13-9 Esaase Bulk Composite vs. Constituents' Recoveries

The variability samples in some instances returned calculated gold head grades lower than 1.0 g/t. Table 13-16 shows the recoveries from two additional grade ranges.

It is evident however that the average head grade as calculated from all samples more closely aligns with that of the overall pit, the corresponding recovery value is deemed more appropriate on that basis.

Table 13-16 Esaase Recoveries Cropped According to Calculated Gold Head Assays

	Esaase Variability Intervals (all)*	Intervals at Head Grade >0.8g/t Au	Intervals at Head Grade >1.0g/t Au
count	39	31	28
average head Au g/t	1.50	1.73	1.82
total recovery %	90.5	91.7	92.2
recovery discount %**	0.3	0.3	0.3
estimated recovery %	90.2	91.4	91.9

*Notes: * Excludes highest and lowest outliers according to calculated head gold grades*
*** 0.3 % points as based on 6 months' process plant operating data April to Sept. 2021:*
- 0.007 mg/L final tails' solution tenor
- 76 g/t barren carbon grade, 5 T/month carbon loss

13.2.3.3 Commentary on Recovery Results of the Variability Samples in Relation to Geology

Direct correlation between the metallurgical recovery of individual samples and current Esaase geological model cannot be established either spatially or statistically (Table 13-17, Figure 13-10).

It becomes clear since the receipt of the test results in early October 2021, that the geometallurgical understanding will need to be improved. At time of this report, Asanko Exploration team has started a new drillhole re-logging and geological mapping campaign to advance the interpretation and modelling of the geology at Esaase.

Table 13-17 Esaase Recovery by Domain

Litho-Stratigraphic Unit	Average Recovery (%)	Sum of Sample Length (m)
Central SS S.Main	88.7	275
Central SS Main	92.4	458
Central SS North	92.2	23
Cobra S.Main	78.8	4
Cobra Main	89.7	157
Upper SS Main	91.3	16

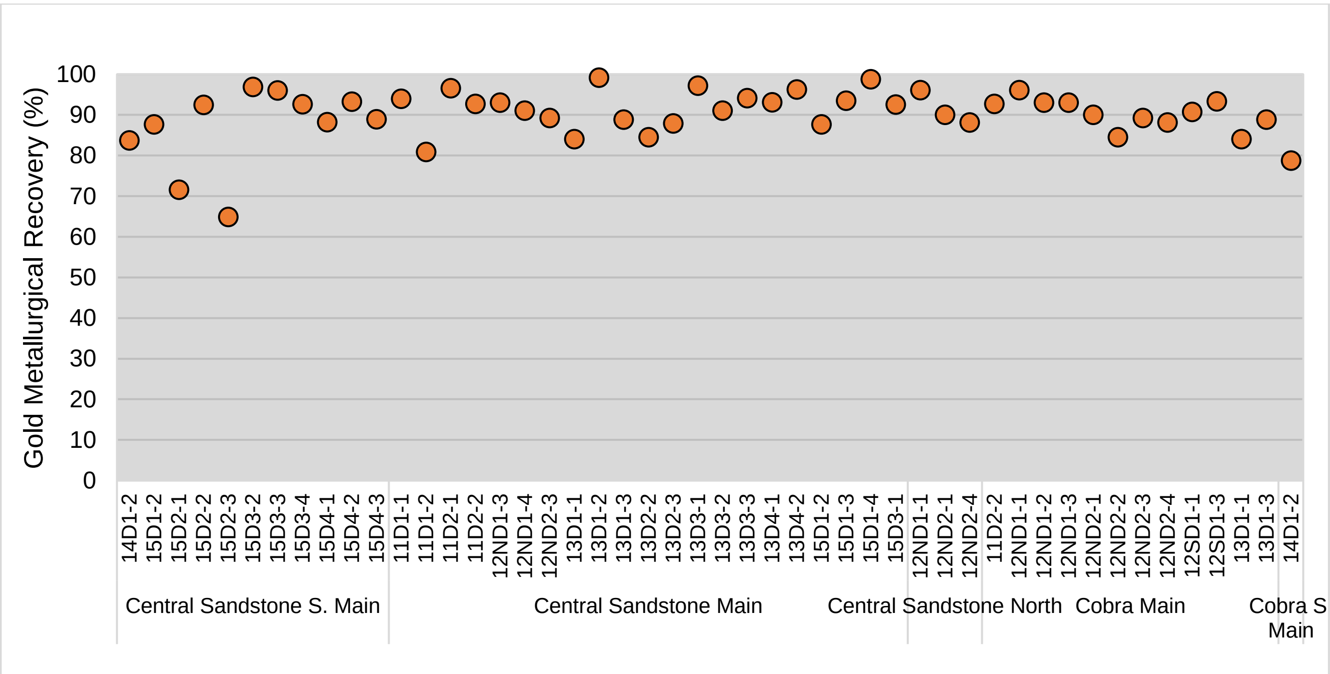


Figure 13-10 Esaase Gold Recovery by Mineralized Domain

13.3 Current Testwork 2021 – Nkran and Obotan Satellite Deposits

13.3.1 Nkran 2021 Testwork (ALS A22441)

Past gold recoveries from processing of the Nkran ore (2017 to 2019) averaged 94%. By way of confirmation testing, a suite of 7 DD (half HQ) intervals were dispatched to ALS, Perth (Report A22441, January 2022). Lithologies tested included granites (2), sandstones (4) and siltstone (1).

Figure 13-11 provides the sample locations. The average interval length of each composite was 19 m.

Table 13-18 provides the composites' hole details while Table 13-19 provides the head assays for the main elements of interest.

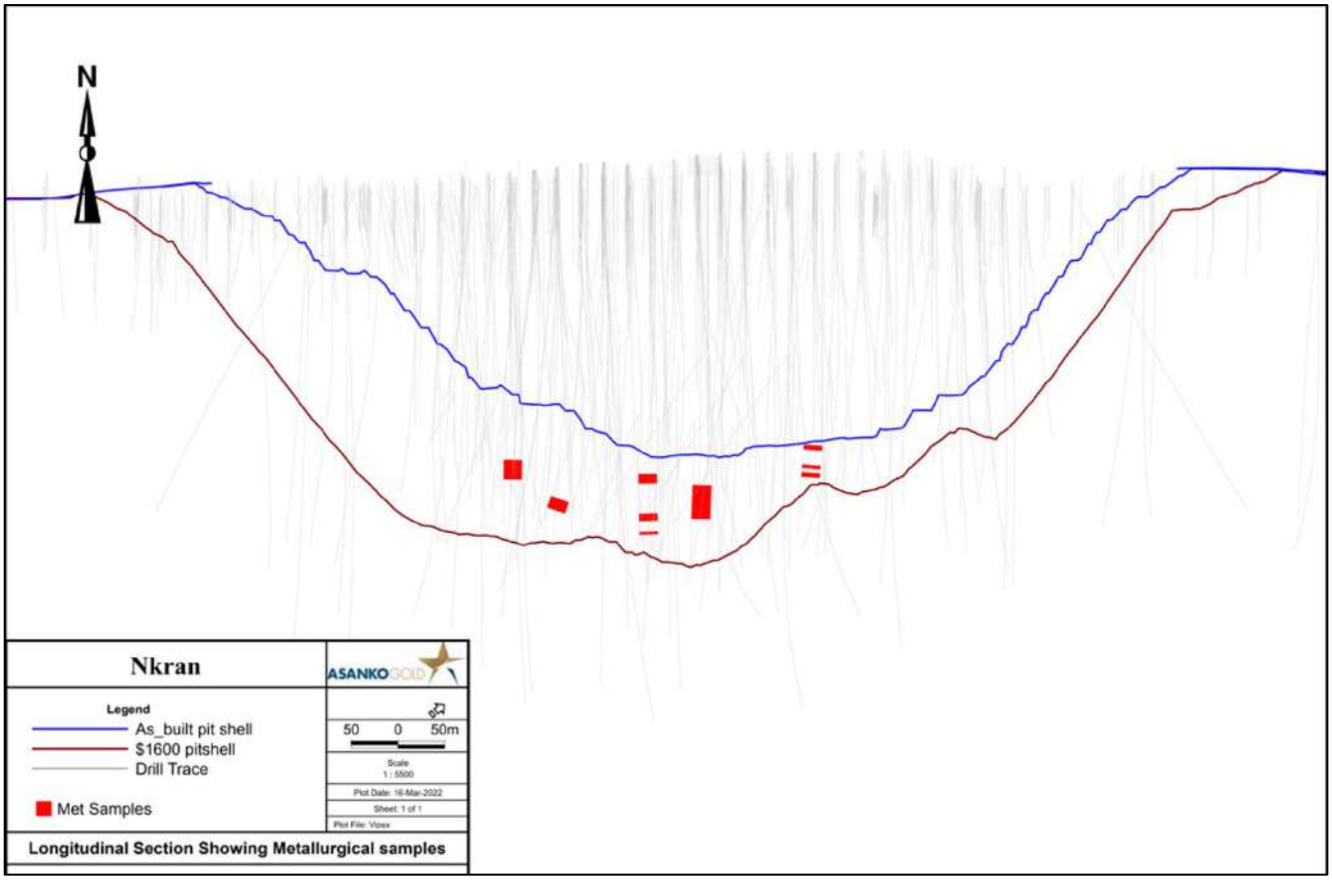


Figure 13-11 Nkran Composite Long Section

Table 13-18 Nkran Composites Details

Composite ID	Hole ID	Lithology	From m	To m
NKGR02	NKDD20-018	granite	13	57
NKGR05	NKDD20-031	granite	127	155
NKSD11	NKDD20-039	sandstone	92.25	117
NKSD12	NKDD20-024	sandstone	87.1	111
NKSD15	NKDD20-047	sandstone	107	121.5
NKSD16	NKDD20-024	sandstone	111	136
NKSI14	NKDD20-031	siltstone	75.2	88.14

Table 13-19 Nkran Composites Head Assays

COMP ID	Ag (ppm)	As (%)	Au I (ppm)	Au II (ppm)	C_{Total} (%)	OC (%)	Cu (ppm)	S_{Total} (%)	$S_{Sulphide}$ (%)
NKGR02	0.3	0.22	0.25	0.24	0.39	<0.03	28	0.24	0.16
NKGR05	0.3	0.34	0.36	0.29	0.69	0.12	39	0.46	0.32
NKSD11	0.3	0.30	2.03	2.36	0.72	<0.03	57	1.00	0.76
NKSD12	<0.3	0.06	0.47	0.59	1.68	0.03	30	0.30	0.24
NKSD15	0.3	0.20	1.29	0.92	1.11	0.42	54	0.58	0.48
NKSD16	0.3	0.36	5.61	1.96	1.53	0.09	34	0.60	0.40
NKSI14	<0.3	0.12	1.22	1.46	1.47	0.30	40	0.64	0.54

The first round of recovery tests was completed at an incorrect cyanide concentration of an initial 300 ppm NaCN. Results indicated poor response for both the granite samples. Subsequent testing at a more appropriate concentration of 600 ppm NaCN (equivalent to typical plant levels) resulted in high recoveries for all lithologies. These results are summarized in Table 13-20. Note, the two granites samples were composites for the second round of testing.

Table 13-20 Nkran Summary of Recoveries (600 ppm Initial NaCN)

COMP ID	GRIND SIZE (P80 um)	GRAVITY GOLD (%)	TOTAL GOLD EXTRACTION 24Hrs (%)	RESIDUE GRADE (Au g/t)	CALC. HEAD (Au g/t)	NaCN (kg/t)	HYD. LIME (kg/t)
NKGR02/05	106	50.1	96.2	0.03	0.66	0.21	0.27
NKSD11	106	24.3	95.5	0.13	2.86	0.27	0.51
NKSD12	106	10.4	95.9	0.03	0.73	0.25	0.48
NKSD15	106	8.8	94.2	0.11	1.80	0.27	0.48
NKSD16	106	10.5	96.0	0.13	3.11	0.25	0.42
NKSI14	106	9.7	93.1	0.11	1.60	0.25	0.52

The simple average recovery from these tests was 95.3%, assuming equal recovery for the granite samples. Allowing a 0.3% discount for operational losses, the resultant 95% recovery suggests the past processing results (94%) may be applied for Nkran material processing.

Note that Nkran is currently the subject of an infill drilling campaign, resultant mineralized core sections are to be subjected to further confirmatory testwork.

13.3.2 Abore 2021 Testwork (ALS A22441)

A suite of metallurgical testwork was undertaken on 7 DD core composites at ALS, Perth (Report A22441, January, 2022). The objective was to confirm that recoveries would align with those of past performance. Resolute mining and processing activities in 2002 returned overall recoveries of 95% (refer Resolute Amansie Limited: Abore Open Pit – Final Report, 2002).

A total of 124 m core was dispatched, with each interval composite averaging 18 m in length. Six of the composites were classified as granite while the seventh as a blend of granites (27%) and sandstones (73%). Granites constitute an estimated 85% of the Abore fresh zone tonnage. Figure 13-12 displays the composites' locations in long section.

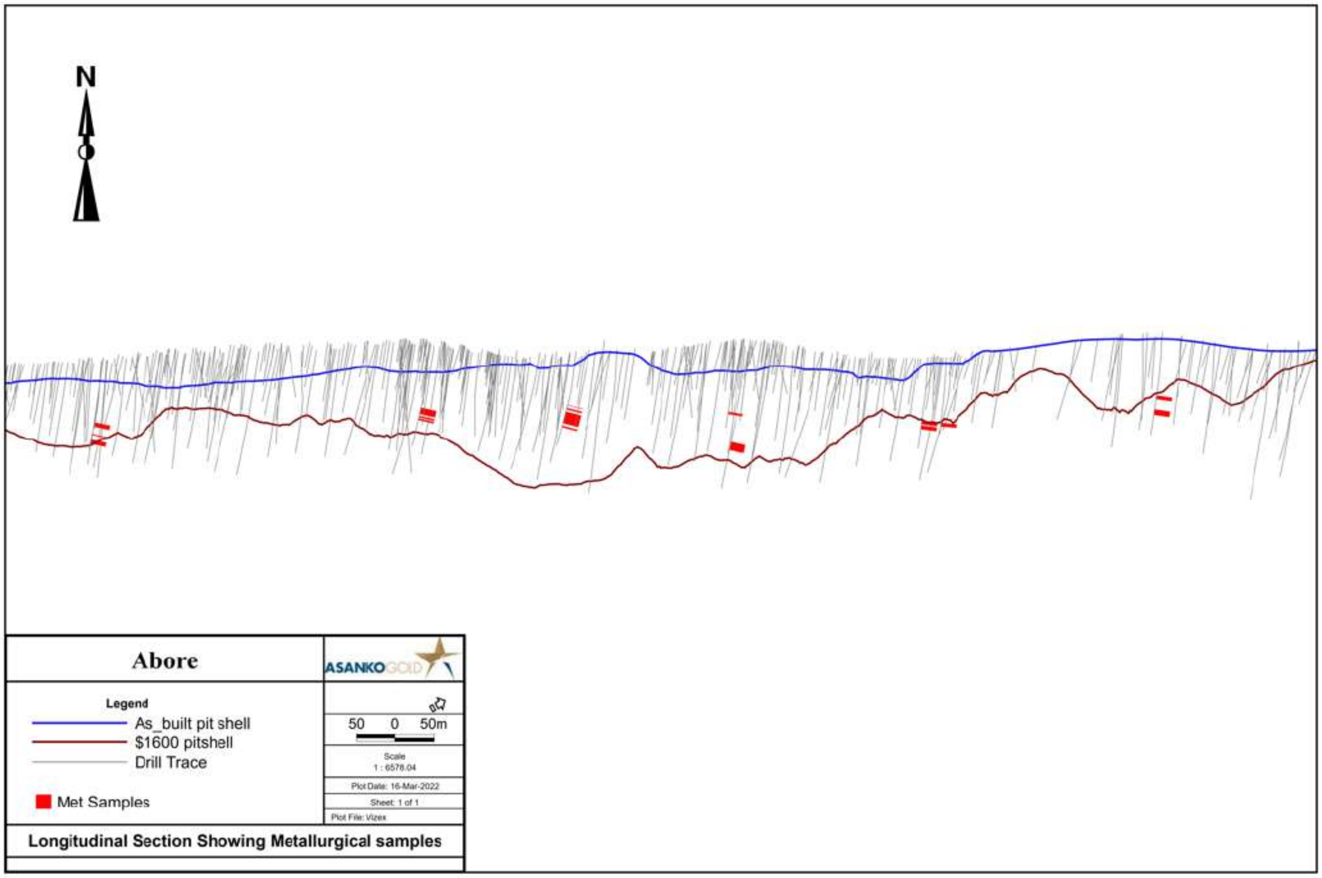


Figure 13-12 Abore Composites Long Section

Table 13-21 supplies a summary of the interval composites hole details. Note, intervals' meters were not necessarily continuous as some core increments were unavailable.

Table 13-22 provides the composites head assays.

Table 13-21 Abore Composites Details

Composite ID	Hole ID	Lithology	From m	To m
ABRGR01	ABPC20-003	granite	103	132
ABRGR02	ABPC20-007	granite	100	144
ABRGR03	ABPC20-009	granite	177	193
ABRGR04	ABPC20-030	granite	113	129
ABRGR05	ABPC20-020	granite	110	144
ABRGR07	ABPC20-006	granite	113	154
ABRSD08	ABPC20-013	sediments/granite	126.19	130.46
	ABPC20-024		119	126

Table 13-22 Abore Composite Head Assays

COMP ID	Ag (ppm)	As (%)	Au I (ppm)	Au II (ppm)	C_{Total} (%)	OC (%)	Cu (ppm)	S_{Total} (%)	$S_{Sulphide}$ (%)
ABRGR01	<0.3	0.26	0.31	0.46	0.42	<0.03	5	0.18	0.14
ABRGR02	<0.3	0.34	0.71	0.52	0.45	<0.03	4	0.22	0.14
ABRGR03	<0.3	0.48	1.56	0.80	0.57	<0.03	5	0.28	0.22
ABRGR04	0.3	0.48	0.52	1.01	0.39	<0.03	5	0.26	0.18
ABRGR05	<0.3	0.20	0.29	1.70	0.33	0.18	12	0.14	0.10
ABRGR07	<0.3	0.12	0.16	0.76	0.30	0.12	5	0.12	0.06
ABRGR08	0.3	0.16	1.51	1.53	0.75	0.27	39	0.44	0.42

Summarized recovery results in Table 13-23 indicate good response from the granite samples with an average of 95.7%. The sandstone/granite sample returned lower recovery at 84.5% and also indicated the lowest gravity stage recovery of only 18.3%. This sample contained the highest OC grade at 0.27%.

By calculation of proportion of sandstone to granite in composite ABRSD08, and the average granite recovery, the estimated recovery from the sandstone component is 80.3%.

Table 13-23 Abore Summary of Recoveries

COMP ID	GRIND SIZE (P80 um)	GRAVITY GOLD (%)	TOTAL GOLD EXTRACTION 24Hrs (%)	RESIDUE GRADE (Au g/t)	CALC. HEAD (Au g/t)	NaCN (kg/t)	HYD. LIME (kg/t)
ABRGR01	106	49.0	93.2	0.05	0.66	0.26	0.3
ABRGR02	106	51.5	94.6	0.05	0.84	0.25	0.3
ABRGR03	106	69.5	96.9	0.05	1.63	0.25	0.3
ABRGR04	106	27.5	97.9	0.06	2.57	0.22	0.3
ABRGR05	106	41.1	94.7	0.03	0.48	0.20	0.3
ABRGR07	106	46.8	96.6	0.01	0.29	0.17	0.2
ABRSD08	106	18.3	84.5	0.23	1.50	0.25	0.5

The overall recovery from these tests stands at 93.3% which includes a discount for losses in processing. When using higher recoveries for the remaining oxide and transition materials, the work confirms no major variation from the past production 95% recovery value, however a 94% recovery value is currently concluded for the overall Abore recovery.

The relationship between OC and gold recovery in the sandstones warrants further investigation. Additional diamond drilling at Abore is currently envisaged, gold recovery relationship with OC will constitute part of the ensuing metallurgical test program.

13.3.3 Miradani North 2021 Testwork (ALS A22441)

A total of 259 x 1m core samples from 11 drill holes were delivered to ALS, Perth in June of 2021.

- Samples were selected based on the drill core available (all HQ) and considered the strike and dip distribution to cover the entire deposit
- Sample selection also considered the mineralized lithologies which in Miradani North are predominantly in the intrusives (granites/tonalites) and the sediments along its peripheries (sandstones, siltstones and intercalations of the two)
- For completeness 2 oxide and 2 transition composite were included

The drill hole locations are displayed in long section in Figure 13-13.

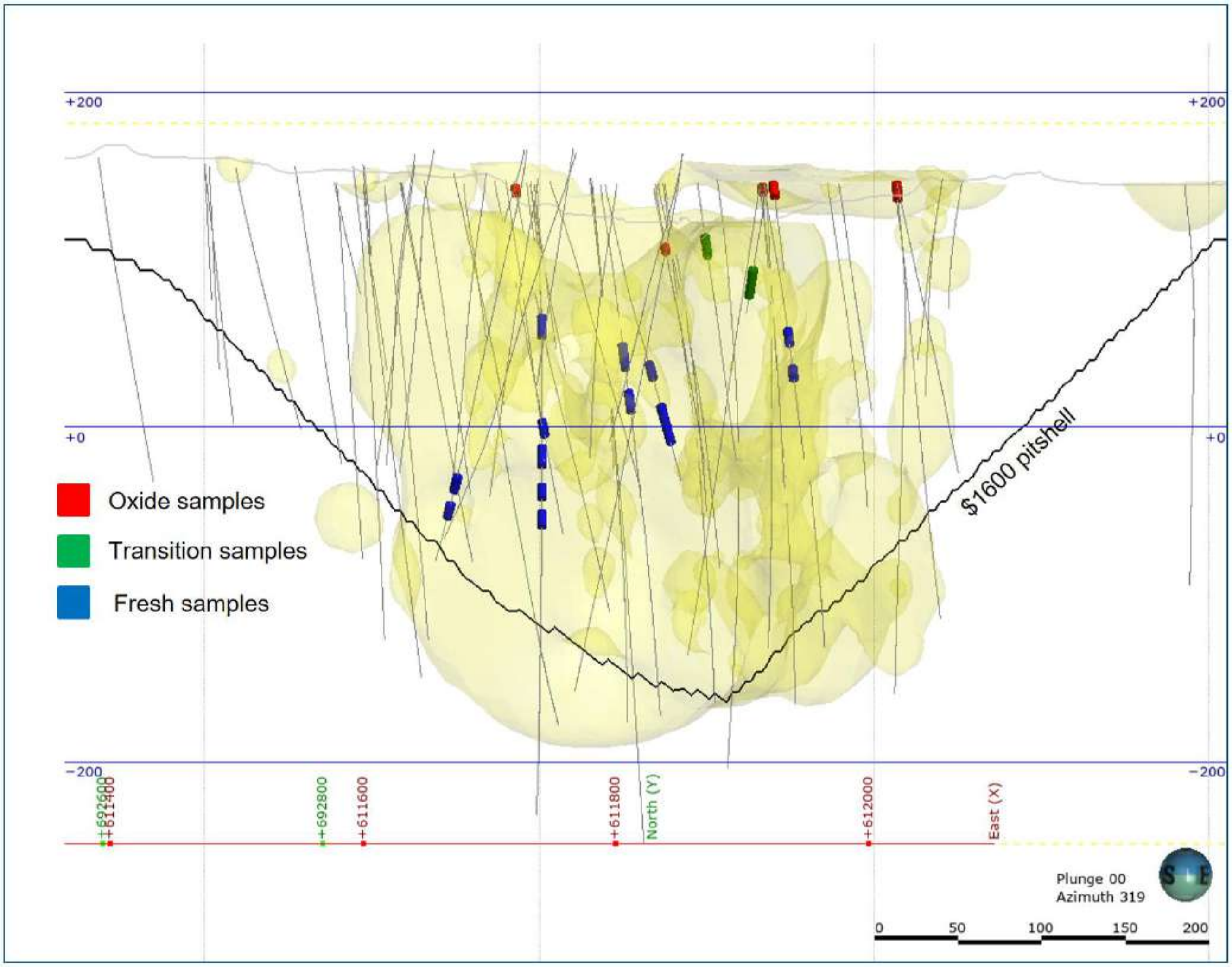


Figure 13-13 Miradani North Drill Holes Long Section

Table 13-24 provides the head assays for the main elements of interest. The samples representing each oxidation state of fresh, transition and oxide were combined on an equal weight basis and subjected to multi element analysis as per Table 13-25.

Table 13-24 Miradani North Head Assays

Sample ID	Ag (ppm)	As (%)	Au (ppm)	Au_rpt1	Au ave (ppm)	C_{total} (%)	$C_{organic}$ (%)	Cu (ppm)	S_{total} (%)	$S_{sulphide}$ (%)
OX 1	14.1	0.12	0.59	0.37	0.48	0.21	0.18	47	<0.02	NA
OX 2	0.9	0.14	0.45	0.49	0.47	0.15	0.12	36	<0.02	NA
TX 1	0.6	0.32	0.55	0.39	0.47	0.39	0.30	55	0.42	0.34
TX 2	0.3	0.38	1.03	1.07	1.05	0.30	0.27	44	0.34	0.26
FR 1	0.3	1.00	1.05	1.23	1.14	0.66	0.18	42	0.88	0.76
FR 2	<0.3	0.74	6.86	0.71	3.79	0.72	0.18	28	0.58	0.40
FR 3	0.3	0.14	0.54	1.18	0.86	0.60	0.45	49	0.34	0.24
FR 4	0.6	1.30	1.88	1.29	1.59	0.60	0.27	40	1.00	0.84
FR 5	<0.3	0.80	0.91	1.91	1.41	0.54	0.15	31	0.78	0.64
FR 6	0.6	1.80	1.94	2.22	2.08	0.66	0.21	37	1.30	1.22
FR 7	<0.3	1.20	1.49	0.77	1.13	0.24	0.18	33	0.76	0.64
FR 8	0.6	0.38	1.06	1.65	1.36	0.51	0.33	32	0.60	0.48
FR 9	<0.3	0.34	0.22	0.17	0.20	0.15	0.12	4	0.22	0.14
FR 10	0.3	0.94	1.77	1.66	1.72	0.36	0.24	12	0.64	0.58
FR 11	<0.3	0.90	0.53	0.70	0.62	0.21	0.18	38	0.76	0.62
FR 12	<0.3	1.76	1.61	1.19	1.40	0.60	0.57	36	1.26	1.24
FR 13	<0.3	0.90	0.48	0.76	0.62	0.42	0.27	44	0.84	0.60
FR 14	<0.3	0.36	0.71	0.76	0.74	0.18	0.09	40	0.42	0.26

Table 13-25 Miradani North Multi Element Analyses – Oxidation State Composites

ANALYTE	OXIDE	TRANS	FRESH
Ag(ppm)	<2	<2	<2
Al(%)	7.96	7.84	7.32
As(ppm)	1310	4190	8590
As(ppm)	1200	3800	8800
Ba(ppm)	450	460	520
Be(ppm)	<5	<5	<5
Bi(ppm)	<10	<10	<10
C_{Total}(%)	0.15	0.30	0.48
$C_{Organic}$(%)	0.15	0.24	0.21
Ca(ppm)	200	300	6600
Cd(ppm)	<5	<5	<5
Co(ppm)	10	30	20
Cr(ppm)	130	130	110
Cu(ppm)	32	46	34
Fe(%)	3.70	4.54	3.98
Hg(ppm)	0.2	<0.1	0.2
K(%)	1.36	1.81	1.84
Li(ppm)	20	45	45
Mg(%)	0.24	1.08	1.04
Mn(ppm)	320	340	465
Mo(ppm)	5	<5	10
Na(%)	0.08	1.87	2.21

ANALYTE	OXIDE	TRANS	FRESH
Ni(ppm)	20	50	45
P(ppm)	200	500	600
Pb(ppm)	195	55	60
S_{Total}(%)	<0.02	0.36	0.74
$S_{Sulphide}$(%)	NA	0.30	0.62
SiO2(%)	71.2	68.4	66.0
Sr(ppm)	40	64	202
Ti(ppm)	4600	4000	3600
U(ppm)	<2	<2	<2
V(ppm)	92	112	84
Y(ppm)	<100	<100	<100
Zn(ppm)	36	82	70

Each of the 16 samples was subjected to recovery testing via gravity concentration and CIL of the gravity tails. These tests were carried out at a P_{80} of 106 µm grind size and 600 ppm initial NaCN in CIL.

Results as summarized in Table 13-26, indicate high gold recovery response with the following simple average recoveries by oxidation state:

- OXIDE 97.2% (average residue grade 0.02 g/t Au)
- TRANSITION 94.0% (average residue grade 0.05 g/t Au)
- FRESH 93.4% (average residue grade 0.10 g/t Au)

Table 13-26 Miradani North Recovery Testing – Summarised Results

SAMPLE ID	GRAVITY GOLD (%)	TOTAL GOLD EXTRACTION 24 Hrs (%)	RESIDUE GRADE (Au g/t)	ASSAY HEAD (Au g/t)	CALC. HEAD (Au g/t)	NaCN (kg/t)	HYD. LIME (kg/t)
OX1	54.4	97.7	0.02	0.59, 0.37	0.88	0.38	1.8
OX2	54.1	96.7	0.03	0.45, 0.49	0.75	0.37	1.4
TX1	36.3	93.6	0.05	0.55, 0.39	0.79	0.66	2.2
TX2	32.9	94.3	0.05	1.03, 1.07	0.88	0.78	2.8
FR1	43.8	95.2	0.08	1.05, 1.23	1.58	0.27	0.5
FR2	69.4	97.1	0.07	6.86, 0.71	2.25	0.22	0.5
FR3	59.7	96.0	0.04	0.54, 1.18	0.94	0.32	0.5
FR4	62.8	97.6	0.09	1.88, 1.29	3.51	0.25	0.4
FR5	68.0	95.6	0.10	0.91, 1.91	2.25	0.25	0.4
FR6	48.1	93.5	0.22	1.94, 2.22	3.29	0.25	0.4
FR7	57.9	93.9	0.06	1.49, 0.77	0.98	0.27	0.5
FR8	48.5	93.8	0.13	1.06, 1.65	2.01	0.37	0.7
FR9	37.7	88.2	0.03	0.22, 0.17	0.25	0.27	0.3
FR10	40.3	92.4	0.21	1.77, 1.66	2.77	0.20	0.5
FR11	50.4	92.7	0.06	0.53, 0.7	0.82	0.84	6.0
FR12	53.9	94.4	0.15	1.61, 1.19	2.60	1.24	9.3
FR13	42.8	87.7	0.14	0.48, 0.76	1.14	0.84	5.5
FR14	43.1	90.1	0.07	0.71, 0.76	0.70	0.30	1.0

An overall value of 94% recovery value is concluded for the Miradani North material.

13.3.4 Akwasiso

Akwasiso mineralization is hosted in shears on siltstone/sandstone contacts, and around and within the granitic intrusive. Strong alteration zones are associated with higher grades around the sandstone-granite contact. Mineralisation is hosted in the sandstone unit with gold occurring within quartz-carbonate veins, similar to the other deposits in the belt.

Akwasiso is currently being fed to the process plant as a minor tonnage contributor along with the predominant Esaase mill feed. Pit depletion is estimated to occur mid-2022.

A 94% gold recovery value is attributed to this small satellite deposit.

13.3.5 Dynamite Hill Previous Recoveries

Dynamite Hill ore had been processed through the process plant for 22 months between November 2017 and August 2019. This was complementary to the main mill feed sourced from the Nkran pit and was at no stage processed in isolation.

Table 13-27 provides details the contribution tonnage of Dynamite Hill (average 18%) along with overall plant recoveries (average 94%).

Table 13-27 Dynamite Hill Mill Feed Component and Plant Recoveries

Month	Total Tonnes Treated (t)	Dynamite Hill Tonnes (%)	CIL Recovery (%)	Overall Plant Recovery (%)
Nov-17	348,027	2.1	87.3	94.4
Dec-17	420,549	3.5	88.5	93.4
Jan-18	430,286	5.5	87.4	92.9
Feb-18	406,787	15.8	88.6	93.5
Mar-18	432,410	22.4	88.9	93.4
Apr-18	438,816	16.7	88.7	93.7
May-18	455,476	20.7	89.0	93.7
Jun-18	479,361	16.8	89.0	93.6
Jul-18	438,938	20.4	87.4	93.2
Aug-18	444,536	19.2	89.6	93.9
Sep-18	415,351	18.3	88.9	94.0
Oct-18	434,117	21.0	89.8	94.7
Nov-18	427,384	19.0	89.3	93.6
Dec-18	376,102	5.2	90.3	95.3
Jan-19	340,030	15.1	88.1	93.5
Feb-19	494,877	16.6	87.1	93.1
Mar-19	388,745	19.5	87.9	93.1
Apr-19	458,077	37.9	87.2	92.3
May-19	471,325	35.9	88.1	93.3
Jun-19	445,122	32.4	89.3	94.2
Jul-19	508,428	23.5	88.7	94.5
Aug-19	501,956	13.7	87.5	94.1

Given the Dynamite Hill ore was always fed in combination with Nkran ore, Figure 13-14 graphically displays variation in overall plant recoveries in comparison to the Dynamite Hill tonnage contribution.

Evident is an essentially steady rate of recovery over the period regardless of the Dynamite Hill component. The attributable recovery from future mill feed is therefore assumed to be in line with past production 94% recovery.

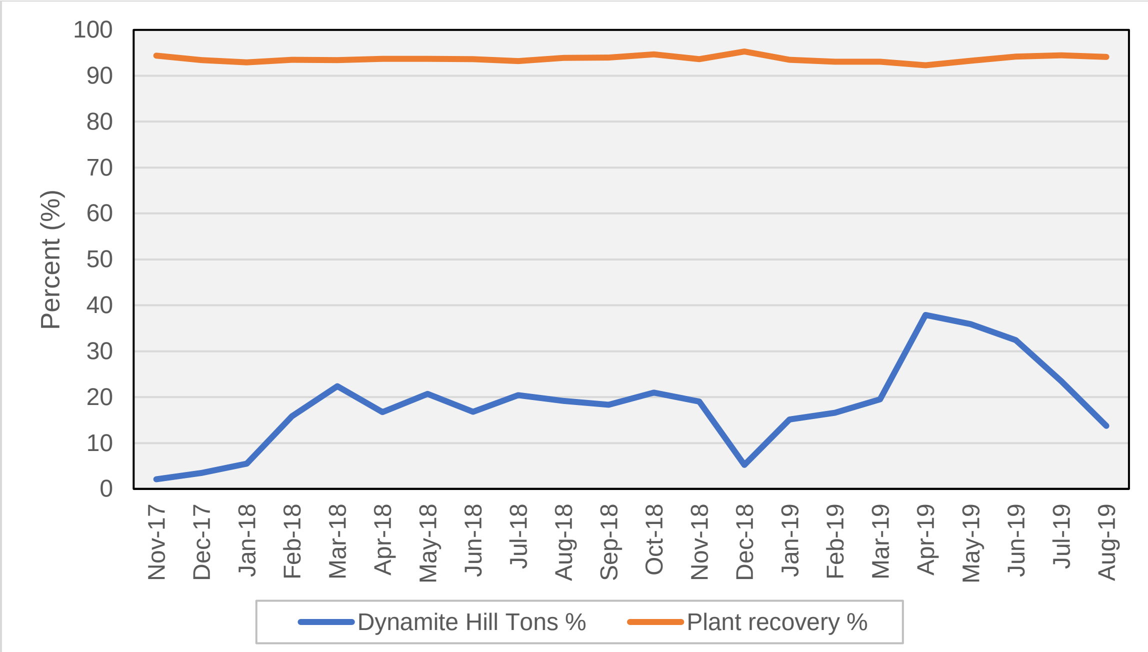


Figure 13-14 Plant Recovery versus Dynamite Hill Feed Component

13.3.6 Adubiaso Previous Recoveries

Adubiaso ore had been mined and processed through the process plant for a period of 14 months from November 1999 to December 2000. The ore was complimentary mill feed to that of Nkran ore, over the period Adubiaso ore accounted for an average of 34% of the mill feed tonnage.

Table 13-28 provides a summary of the processing results, a total of 698 kt was fed to the mill with gold recoveries were slightly greater than 96% as based on monthly plant recovery figures (refer Resolute Amansie Limited: Adubiaso Open Pit – Final Report, 2001).

A slightly conservative gold recovery of 94% has been applied for future performance from this pit.

Table 13-28 Adubiaso Past Production Summary

Period	Tonnes (dmt)	Grade (g/t Au)	Mined Au Oz	Recovered Au Oz
Nov-99	64,267	1.42	2,940	2,782
Dec-99	46,481	1.59	2,387	2,256
Jan-00	47,810	1.82	2,810	2,681
Feb-00	82,888	1.95	5,218	4,989
Mar-00	91,460	3.11	9,178	8,921
Apr-00	65,130	3.09	6,490	6,334
May-00	104,422	2.54	8,561	8,296
Jun-00	88,750	3.14	8,990	8,775
Jul-00	34,812	2.35	2,641	2,564
Aug-00	15,591	2.55	1,283	1,249
Sep-00	12,706	2.45	1,003	970
Oct-00	21,285	2.54	1,742	1,620
Nov-00	6,100	2.12	417	381
Dec-00	16,946	1.82	994	862
Total	**698,648**	**2.43**	**54,654**	**52,677**

13.4 Recent Plant Performance

As per the press release issued by Galiano Gold on February 25th, 2022, the Asanko Gold Mine had recently detected an increase in gold grades in its tailings product leaving the processing facility. The assays indicated total gold grades of approximately 0.40 g/t in tailings product, which is higher than the historic and expected total gold grade in tailings of approximately 0.10 g/t. Previous testwork describes areas of the Esaase pit that were expected to yield lower recovery, and it is possible that material mined from these areas may be causing the lower recovery. However, given the volume and consistency of the material yielding lower recovery, the Company is working to better understand the cause(s), magnitude and impact of the observed lower recovery.

Testwork programs (2018-2021) have identified the key component of the geometallurgy of the Esaase unoxidized fresh mineralization, and potentially within the weakly oxidised transition, as the distribution and abundance of organic carbon.

Organic carbon in the plant feed material can compete with the activated carbon, added as part of the recovery process, for the adsorption of solubilised gold from solution.

An initial full plant circuit survey was recently completed. Samples obtained from various parts of the plant were subject to both BLEG (Bulk Leach Extractable Gold) and fire assays to assess how the characteristics of cyanide-soluble gold changes throughout the plant in comparison to total gold. Early results indicated that a portion of the increase in gold in tailings is attributable to preg-borrowing or preg-robbing materials, evident by an increase in difference between BLEG and fire assay after reaction with cyanide in the first leach tank,

Initial diagnostic leach testwork of head and tail composite samples indicate that the lower recoveries appear to be losses to organic carbon and some encapsulation in sulphides and silicates. The magnitude of recovery loss attributable to organic carbon versus sulphides/silicates is currently inconclusive and will continue to be investigated.

Investigative testing of recent leach feed material, undertaken at the Asanko site laboratory, has indicated the potential for increased recoveries via the use of kerosene as a pre-CIL conditioning agent. The kerosene serves to foul the activity of the organic carbon component of the feed material, thereby retarding any subsequent gold losses due to preg-borrowing or preg-robbing.

13.5 Life of Mine Recovery Estimates

13.5.1 Esaase

The 2021 testing (ALS report A22281) returned recovery results for the bulk composites that align with those from the 2018/19 testwork programs. As such, no change has been made to the recovery estimates as per the Asanko Gold NI 43-101 Technical Report (2020) for the purpose of constraining the current Mineral Resource estimate. These recoveries, based on material source/type, are calculated according to the equations in Table 13-29.

Although the variability composites testing completed in 2021 (A22281) indicated an upside to these recovery estimates, the results are not applied herein. The rationale behind deferring reliance on the higher recoveries obtained in the testing is twofold:

1. Current plant performance is yielding lower recoveries than previously modelled in equivalent spatial locations within the Esaase deposit. The deviation between actual plant performance and modelled recovery will need to be further examined to determine the cause and the extent to which this may persist within the deposit
2. The variability testing, although indicative of an upside to 90.1% average recovery, may require revised plant operating protocols

Table 13-29 Esaase Head Grade Recovery Model Correlations

Material Source	Head Grade Recovery Correlation	M (slope)	C (coefficient)
Upper (Fresh/Trans)	y = 9.600ln(x) + 82.260	9.60	82.26
Cobra (Fresh/Trans)	y = 15.532ln(x) + 56.020	15.5	56.02
Central (Fresh/Trans)	y = 6.202ln(x) + 85.792	6.20	85.79
Python (Fresh/Trans)	=upper	9.60	82.26
Other (Fresh/Trans)	=upper	9.60	82.26
Material Type		**Residue Value Au (g/t)**	
Esaase Oxides*		0.10	
Recovery Discount Factor (due to Soluble Gold Losses & Carbon Losses)		0.5%	

*Note: * A fixed residue grade has been applied to the Esaase Oxide material*

13.5.2 Nkran and Obotan Satellite Pits

Gold recoveries used for Nkran and the minor satellite pits is 94% based on previous operational performance and recoveries achieved in the mill from 2017 to 2019.

Additional metallurgical testing on Abore and Nkran confirmed the assumed recoveries as valid. Miradani North recovery is also estimated at 94%, as based on the 2021 recovery testwork.

Akwasiso material is currently being fed to the process plant as a minor tonnage contributor along with the predominant Esaase mill feed. Pit depletion is estimated to occur mid-2022.

Dynamite Hill and Adubiaso recoveries are assumed to be aligned with past production recoveries from the prior Resolute Amansie Limited operations.

14 MINERAL RESOURCE ESTIMATES

The effective date of the Mineral Resource is February 28, 2022, and comprises eight deposits, which have been combined into a total Mineral Resource table (Table 14-1).

Table 14-1 Summary of Mineral Resources at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

	Measured			Indicated			Measured + Indicated			Inferred		
	Tonnes	Grade	Au Contained	Tonnes	Grade	Au Contained	Tonnes	Grade	Au Contained	Tonnes	Grade	Au Contained
Deposit	**(Mt)**	**(g/t)**	**(koz)**	**(Mt)**	**(g/t)**	**(koz)**	**(Mt)**	**(g/t)**	**(koz)**	**(Mt)**	**(g/t)**	**(koz)**
Nkran				12.1	2.09	814	**12.1**	**2.09**	**814**	1.3	2.23	96
Esaase	10.9	1.25	437	11.7	1.27	475	**22.6**	**1.26**	**912**	0.6	1.22	25
Akwasiso				1.7	1.31	69	**1.7**	**1.31**	**69**	0.2	1.46	7
Abore	3.2	1.46	150	5.1	1.23	203	**8.3**	**1.32**	**353**	1.1	1.55	55
Adubiaso				1.6	1.80	90	**1.6**	**1.80**	**90**	0.2	1.38	9
Asuadai				1.6	1.29	67	**1.6**	**1.29**	**67**	0.0	1.17	1
Miradani				7.1	1.28	293	**7.1**	**1.28**	**293**	2.6	1.21	102
Dynamite				1.9	1.39	85	**1.9**	**1.39**	**85**	0.3	1.26	14
Stockpiles	9.5	0.72	221				**9.5**	**0.72**	**221**			
Total	**23.6**	**1.06**	**808**	**42.7**	**1.53**	**2,096**	**66.4**	**1.36**	**2,904**	**6.4**	**1.49**	**309**

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion up to and including February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software at gold price of $1,600/oz. Mining, G&A, processing costs, and process recovery are dependent on deposit and detailed in the respective deposit sections.*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

Cautionary Note about Mineral Resources

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. Mineral Resources do not account for mining loss and dilution. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to the Indicated category through further exploration.

All Mineral Resources reported are constrained by a US$1600/oz gold pit shell and as such, are considered to have a reasonable prospect for eventual economic extraction.

14.1 Esaase Mineral Resource Estimate

All figures and tables prepared by Galliano unless otherwise indicated.

14.1.1 Database

The Esaase exploration database consists of 1,371 inclined surface diamond and reverse circulation drill holes for a total of 261,753.92 metres of drilling. The holes dip between about 90º to 37º orientated mostly towards the southeast, although with a significant number of holes orientated in other directions. Most drill holes are surveyed at 30 metre intervals down-the-hole using a Reflex single shot camera. The sampling interval is mostly 1 metre down the hole, with about 15% at different lengths. There are 250,394 Au values in the current exploration drill hole database. There are also over 24,000 reverse circulation grade control holes. There are 16,687 specific gravity measurements collected using a wax-coat water immersion method.

14.1.1 Geological Models

Wireframe envelopes and surfaces representing topographic surfaces, models for lithology, oxidation state, structures, and mineralization domains were developed using Leapfrog™ modelling software. An original-topography surface is used during grade estimation as an upper domain boundary and an as-mined topographic surface is used to deplete the estimated block grades before reporting resources. A series of 3D wireframes orientated approximately N30°E and steeply dipping represent the Upper sandstone; the Central sandstone; the Cobra unit; the Upper Shales; and the Footwall sandstone. Figure 14-1 shows a cross section through the Main zone looking approximately N30E, highlighting the sequence of these stratigraphic units. These wireframes are used to code lithology into the block model but are not used during grade estimation.

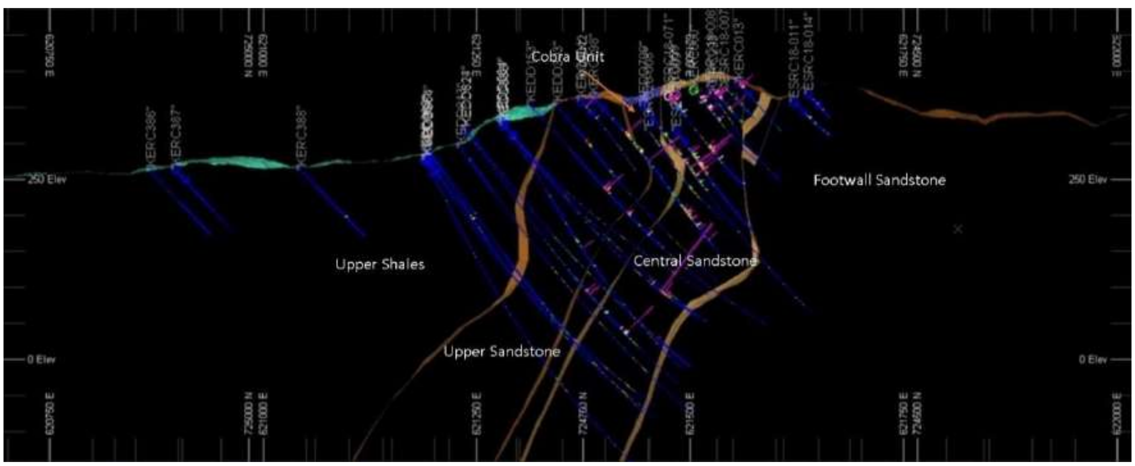


Figure 14-1 Esaase Cross Section Through Main Pit Showing Stratigraphic Units and Drill Hole Databases

Note: Window is ±10 m either side of the section

Three weathering surfaces representing the boundary between Saprolite, Oxides, Transition, and Fresh zones are used to code weathering type into the block model and are used for in situ density estimation and assignment.

Six mineralized envelopes developed for the Esaase resource model update are the most important grade estimation constraints. These mineralized domains were developed by Asanko geologists using a combination of lithology, alteration, structural, and mineralization information. They are not grade shells, rather interpreted section by sections by looking simultaneously at the geologic information described. These wireframes include:

- Domain 1: Main Pit, Hanging wall

- Domain 2: Main Pit, Footwall, southern tail of the Main zone
- Domain 3: Main Pit, Footwall
- Domain 4: North Pit zone
- Domain 5 and 6 (combined): South Pit zone.

While the general thickness of the mineralization varies, Au grades can be traced from section to section (on 40 metre drill hole intersection spacings) with consistency in all three Esaase zones. Mineralization outside the envelopes generally cannot be traced from section to section but there are local small but consistent zones with Au grades of interest.

Figure 14-2 shows a three-dimensional view of the mineralized domains, looking from the Southeast. Drill holes traces and collars are also shown.

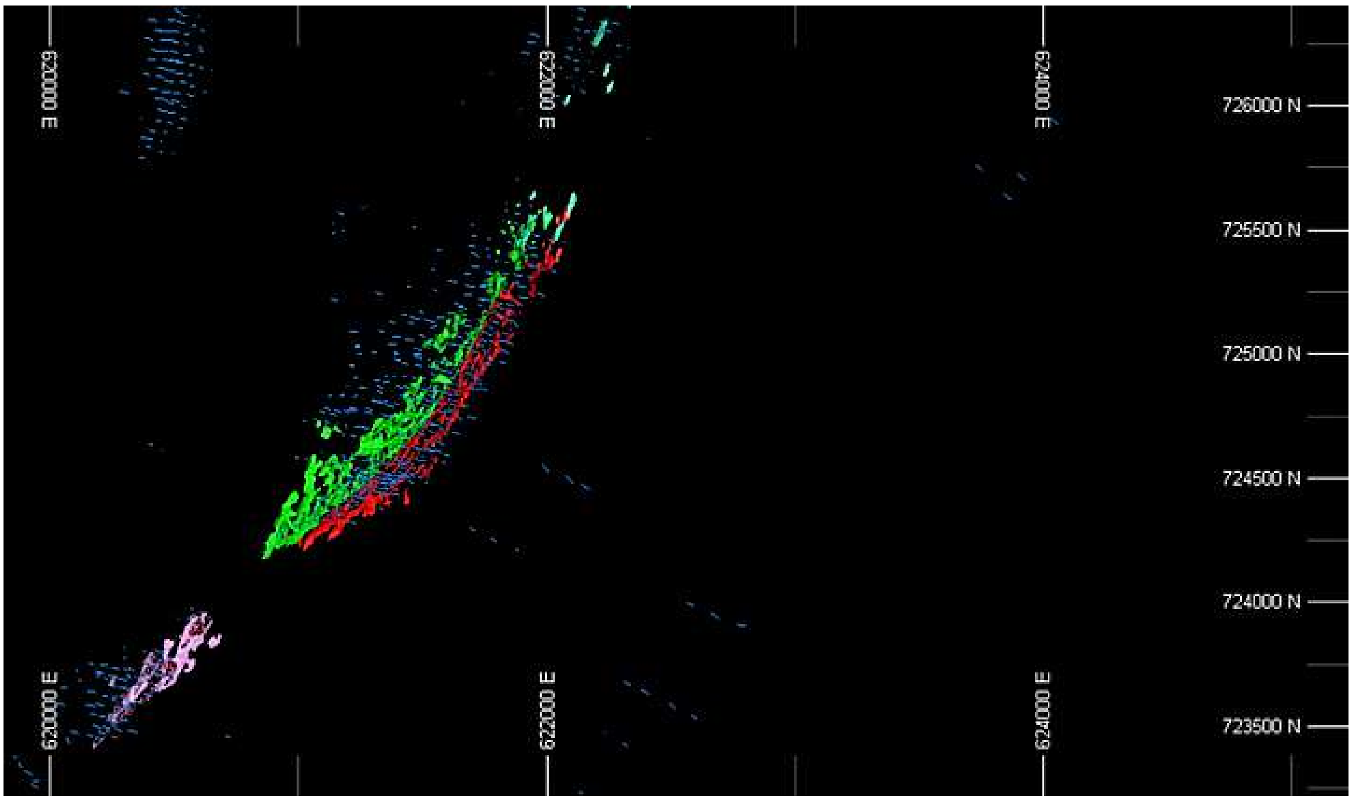


Figure 14-2 Esaase Mineralized Domains

Note: Pink: South Pit; Green and Red: Main Pit; Cyan: North Pit. Level 290 m; drill holes traces and collars are also shown. Oblique view from above, looking northwest.

14.1.2 Exploratory Data Analysis

There are 250,394 Au values in the current assay database with a maximum value of 266.84 g/t Au. The gold distribution has a global coefficient of variation of over 7 indicting very high variability as is expected from Birimian-style Au deposits. Figure 14-3 and Figure 14-4 show the raw histogram and basic statistics for Domains 1 and 3, respectively. Domaining reduced the coefficient of variation to approximately 4. The two grade distributions have similar variability and Au grade ranges.

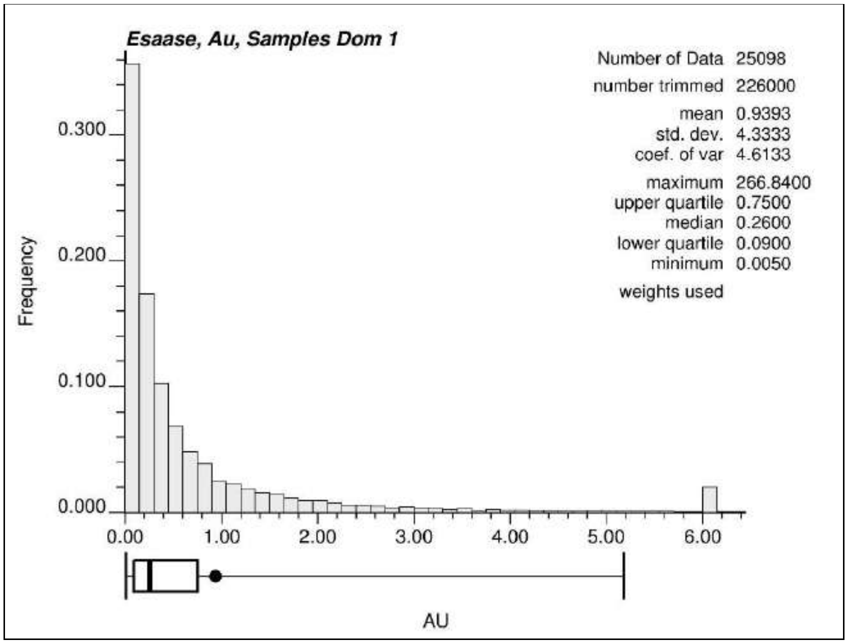


Figure 14-3 Esaase Histogram and Basic Statistics of Gold (g/t) in Samples Within the Domain 1 (Main Pit, Hanging Wall)

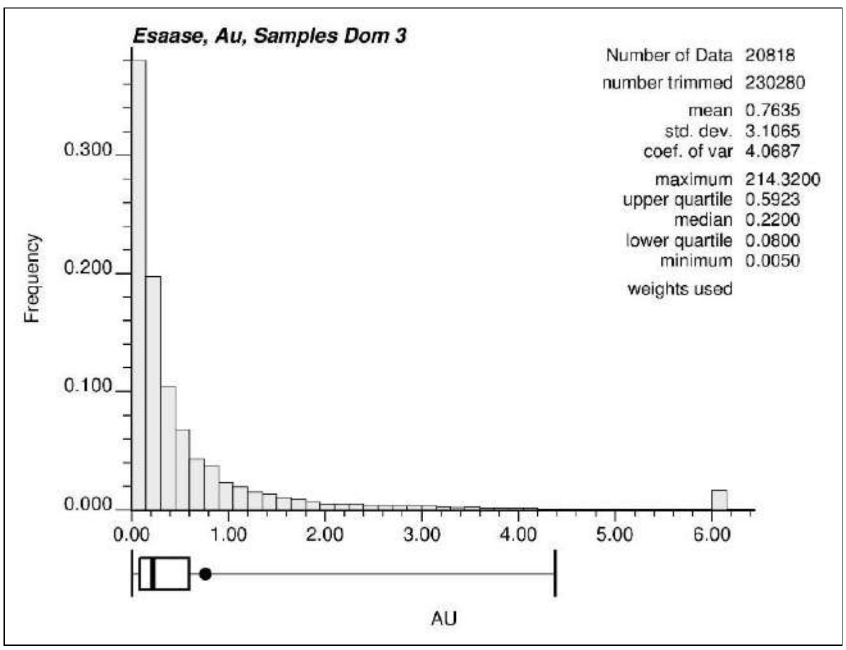


Figure 14-4 Esaase Histogram and Basic Statistics of Gold (g/t) in Samples Within the Domain 3 (Main Pit, Footwall)

14.1.2.1 Density Assignment

In situ density is estimated into the block model using the Inverse Distance Squared method. The arithmetic averages of each type of mineralization are used to assign in situ bulk density to un-estimated blocks. Summary statistics of in situ bulk density by oxidation zone are presented in Table 14-2.

Table 14-2 Esaase Statistics of In Situ Bulk Density Values

Unit	Mean (t/m^3)	SD	3*SD	Accept. Min Value (t/m^3)	Accept. Max Value (t/m^3)
SAP	2.26	0.22589	0.67767	1.58	2.94
OX	2.32	0.19758	0.59274	1.73	2.91
TR	2.45	0.23973	0.71919	1.73	3.17
FR	2.74	0.16644	0.49932	2.24	3.24

14.1.2.2 Composites

One-metre-long composites were prepared from the original assay data, truncated at the contacts of the mineralized envelopes. No significant correlation between assayed Au grades and assay length is observed so all resulting composites greater or equal to 0.40 metre are used to estimate grades.

Figure 14-5 and Figure 14-6 show the statistics and histogram of all 1 metre composites for Domain 1 and for Domain 3. The coefficients of variation are 4.55 and 4.00, respectively. Figure 14-7 and Figure 14-8 show the corresponding cumulative probability function graphs for the same Domains. These probability graphs are used to understand the behaviour of the high-grade population and the definition of the indicator thresholds, as discussed below.

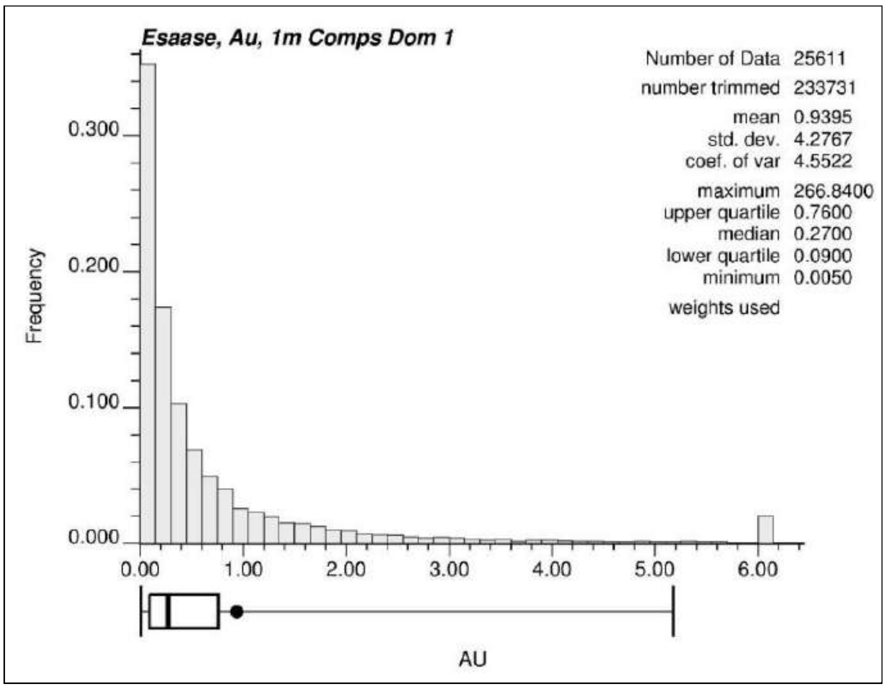


Figure 14-5 Esaase Histogram and Basic Statistics, Au (g/t), All 1 m Composites within Domain 1 (Main Pit, Hanging Wall)

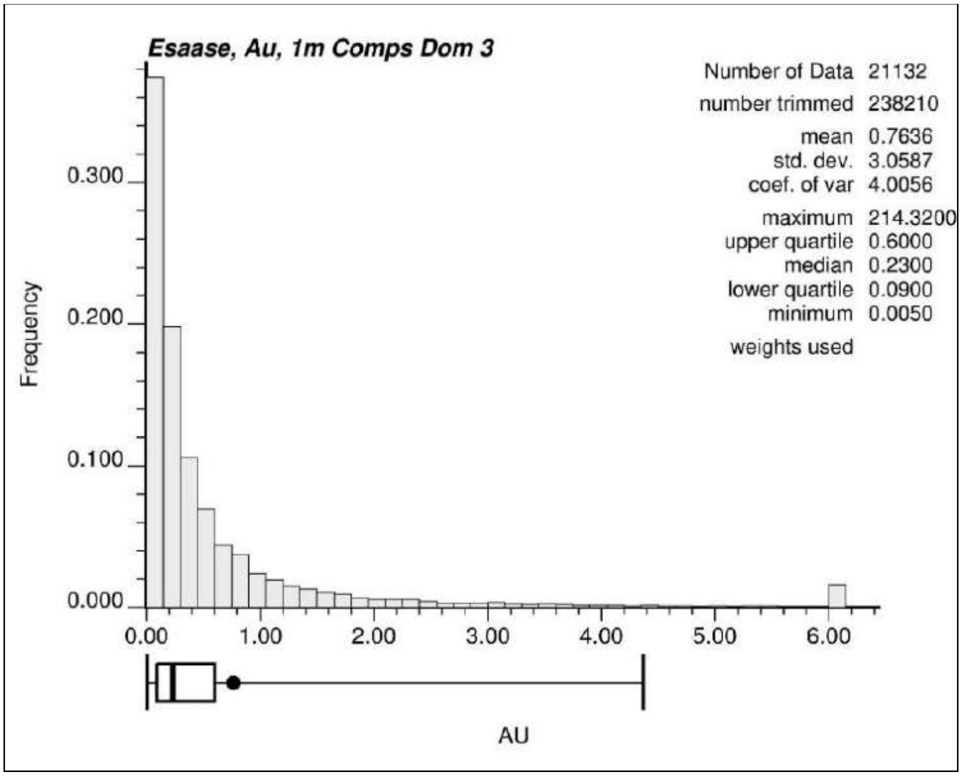


Figure 14-6 Esaase Histogram and Basic Statistics, Au (g/t), All 1 m Composites within Domain 3 (Main Pit, Footwall)

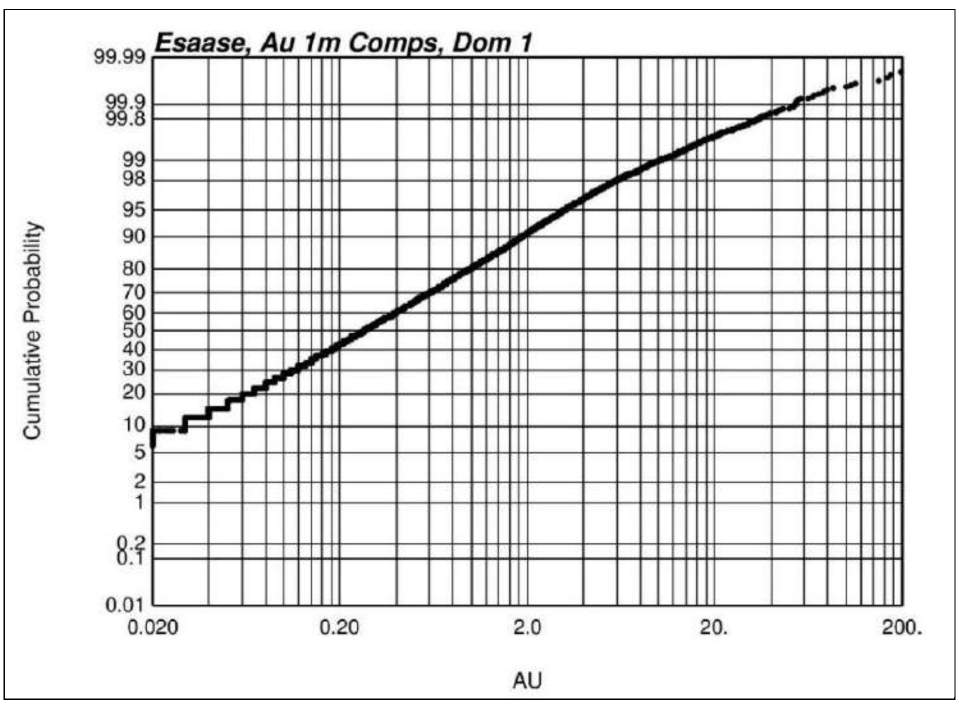


Figure 14-7 Esaase Probability Plot, Au (g/t), All 1 m Composites Within Domain 1 (Main Pit, Hanging Wall)

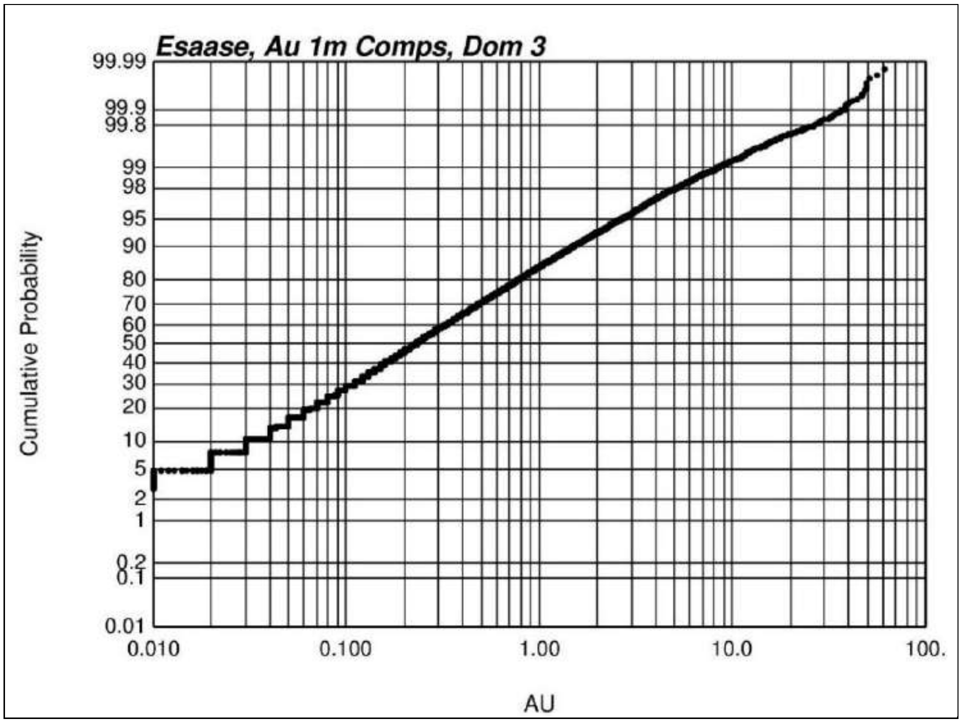


Figure 14-8 Esaase Probability Plot, Au (g/t), All 1 m Composites Within Domain 3 (Main Pit, Footwall)

14.1.2.3 Gold Grade Capping/Outlier Restrictions

Table 14-3 shows the capping grades and expected gold metal reduction by domain, based on analysis of cumulative probability curves and quantity of gold metal graphs of the one-metre composite database. Only Domains 0 and 2, estimated by Ordinary Kriging, have this capping applied. The other Domains are estimated using Multiple Indicator Kriging (MIK), which applies high-grade control as discussed below.

Table 14-3 Esaase High-grade Outlier Capping, 1 m Composites

Domain	Outlier Value	# of Samples Above Outlier Value	% of Total Assay Intervals Impacted	Non-declustered Average Before Capping	Non-declustered Average After Capping	% Metal Reduction
0	2.0 g/t	1,236	0.06%	0.100 g/t	0.073 g/t	27.0%
1	30.0 g/t	60	0.24%	0.940 g/t	0.855 g/t	9.2%
2	5.0 g/t	9	1.28%	0.676 g/t	0.567 g/t	16.0%
3	25.0 g/t	49	0.24%	0.764 g/t	0.714 g/t	6.8%
4	15.0 g/t	17	0.56%	0.579 g/t	0.539 g/t	6.8%
5+6	25.0 g/t	23	0.32%	0.904 g/t	0.834 g/t	7.8%

14.1.2.4 Spatial Clustering

Figure 14-9 shows the declustered histogram and basic statistics of the composites for Domain 1 based on 50 metre declustering cell. The 10% relative difference between the raw and the declustered average grades in Domain 1 indicates some minor clustering.

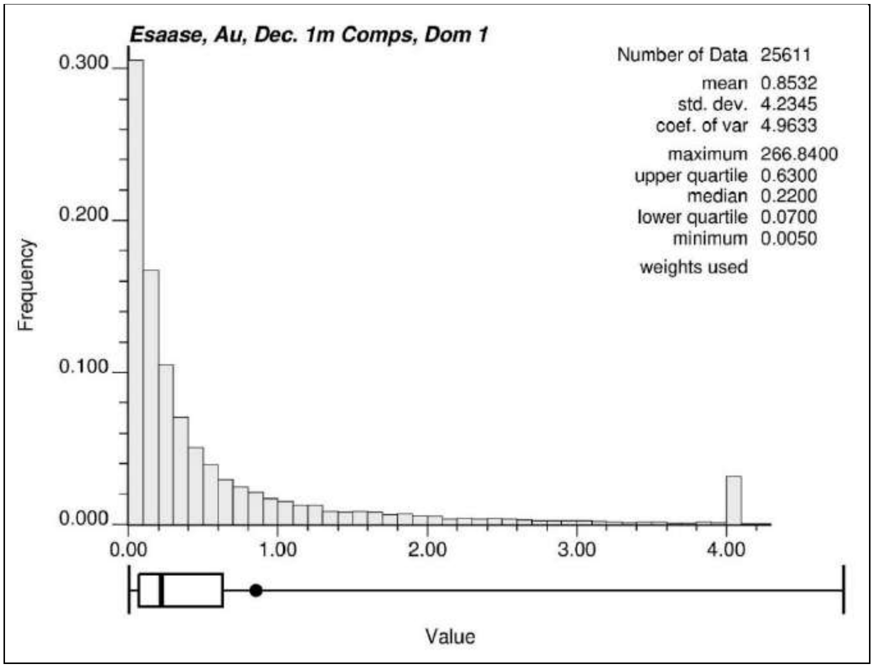


Figure 14-9 Esaase De-clustered Histogram and Basic Statistics, 50 m x 50 m x 10 m cell size, Au (g/t), Domain 1

14.1.2.5 Contact Analysis

Quantile-Quantile plots used to compare Saprolite, Oxide, Transition and Fresh composite grades show reasonably similar distributions in all domains except locally at higher grades, supporting a decision to ignore these domain boundaries during grade estimation. Figure 14-10 shows the Quantile-Quantile plots for Oxide versus Transition.

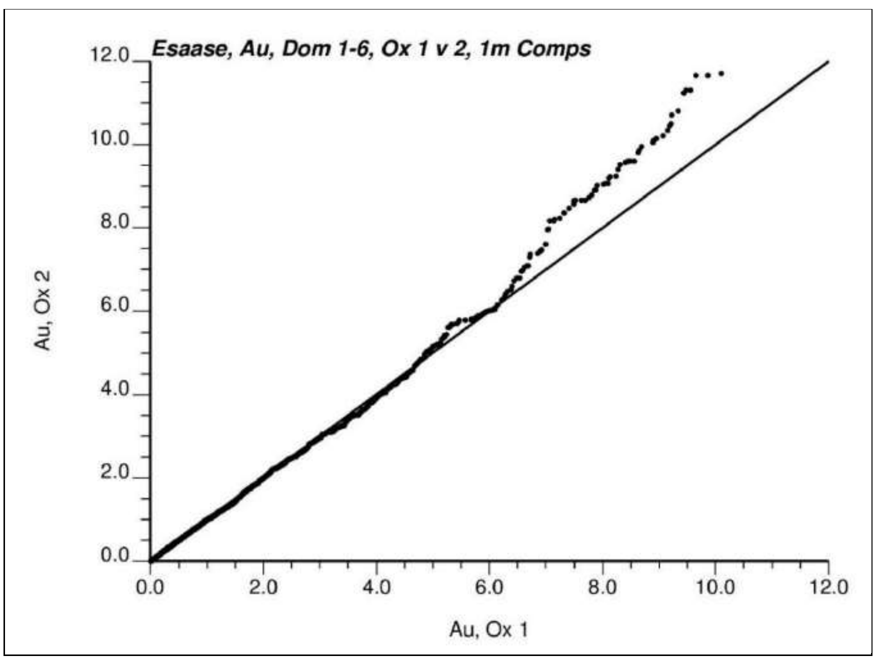


Figure 14-10 Esaase Quantile-Quantile Plot, Au (g/t), Oxide vs Transition Zones, Composites Inside the Mineralized Envelopes

Figure 14-11 shows the Au grade profile inside and outside the Domain 1 envelope. As expected, there is a sharp transition in average grades comparing those composites outside with those inside the envelope. Similar sharp transitions are present inside and outside of all other domains, supporting the decision to use only composites within a domain during grade estimation.

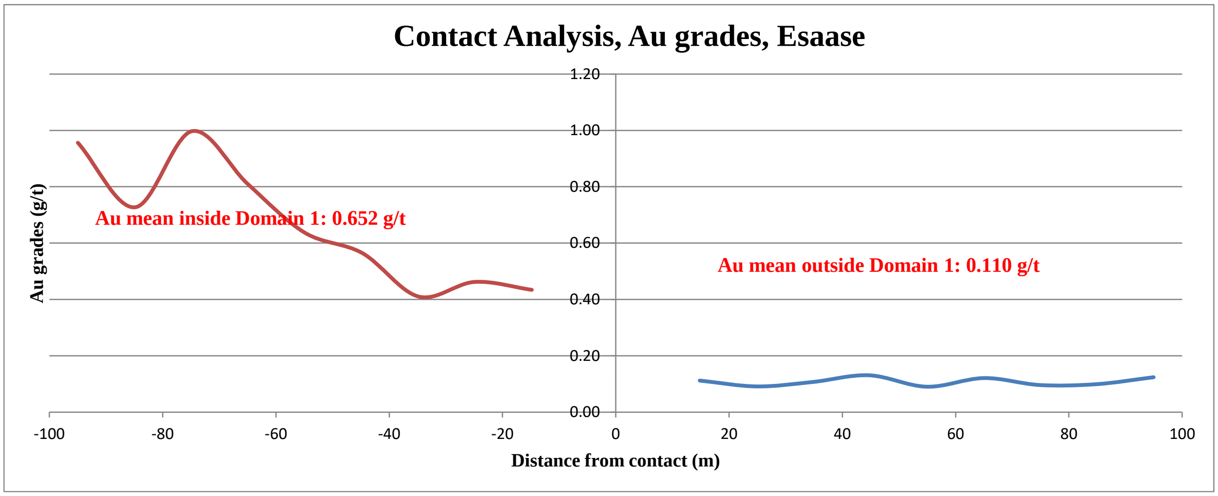


Figure 14-11 Esaase Au Grade Profile, Domain 1 Contact with Outside Composites

14.1.2.6 Grade Control Database

The grade control database has 383,584 samples from over 24,000 reverse circulation drill holes. Figure 14-12 and Figure 14-13 show the histogram and basic statistics for all grade control data and the probability plot for Domain 1, respectively. Both reveal a tail in the distribution different from than that observed in the exploration data possibility due to a sampling or downhole contamination issue that is still under investigation. This is not considered to represent a risk to the resource model.

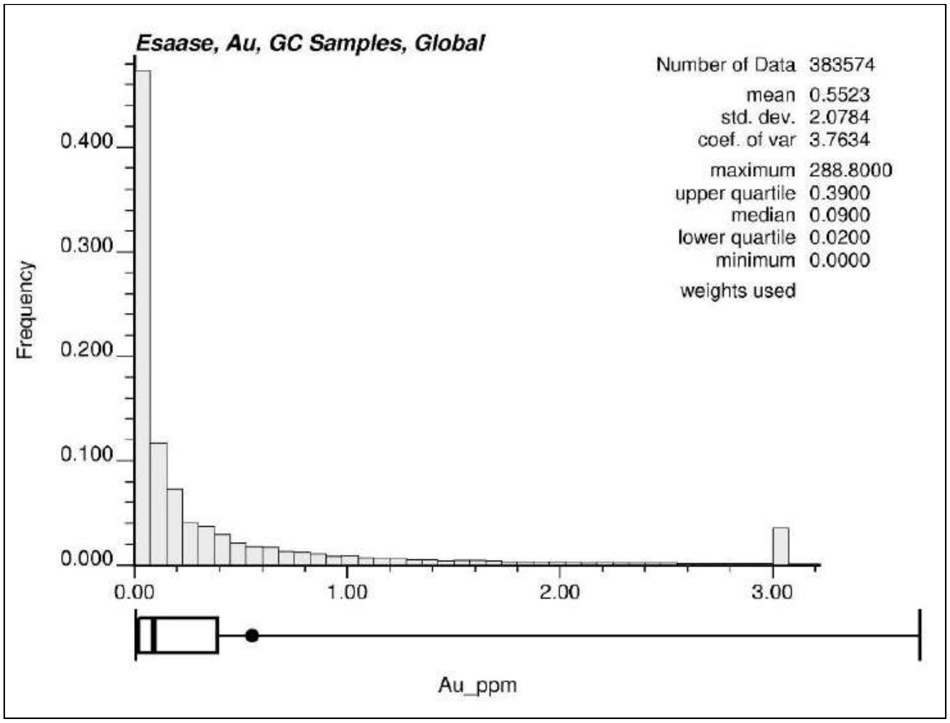


Figure 14-12 Esaase Histogram and Basic Statistics, RC Grade Control Data, All Domains

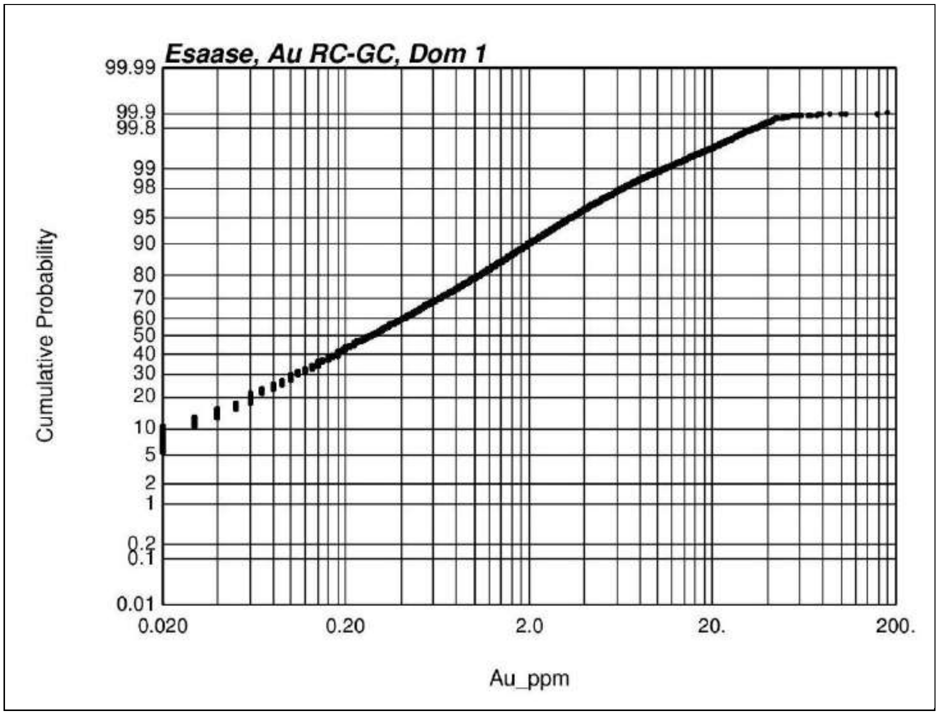


Figure 14-13 Esaase Probability Plot, RC Grade Control Data, Domain 1

This grade control database was compared with the exploration database by homogenizing both to sample lengths of 3 metre and then pairing individual grade control Au samples with Au grades from exploration reverse circulation holes with a 3-metre maximum separation distance. The Quantile-Quantile plot in Figure 14-14 show these two databases have similar Au grade distributions, supporting the decision to use the grade control model to calibrate and adjust estimation parameters during grade estimation.

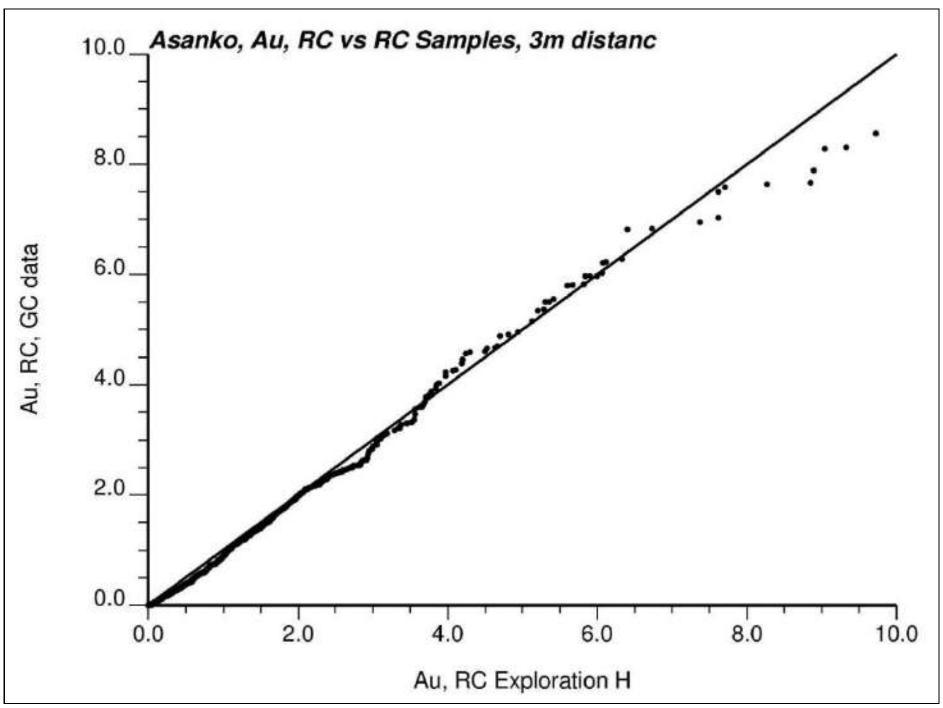


Figure 14-14 Esaase Quantile-Quantile Plot, Exploration vs Grade Control Au 3 m Composites, No More Than 3 m Apart

14.1.2.7 Variography

Indicator variogram models were prepared for each indicator, for each Domain estimated using MIK. In all cases, 37 directions were run, using a basic lag of 20 metre and directions every 30° in the horizontal, -30°, and -60° planes, for a total of 36 directions. In addition, a vertical variogram (-90°) was also run. SAGE2001© was used to obtain the experimental indicator variograms and resulting model.

The indicator variograms were run using 1 metre composites from the exploration database. The anisotropies and ellipses of continuity for each variogram were checked against known geology and its expected behavior. As expected, along-strike (approximately N30º E) and down dip continuities are the most significant within Esaase. Figure 14-15 shows the summary variogram model of the 0.80 g/t indicator variogram for Domain 3.

Domains 2 and 0 were modeled using Ordinary Kriging. For these domains experimental Au grade pairwise variograms and correlograms, as well as their respective models, were prepared. The pairwise models were chosen as the option providing the more robust models.

Indicator Variograms, Dom 3, Ind 0.8

GSLIB Rotation Conventions

Nugget ==> 0.500
C1 ==> 0.455
C2 ==> 0.045

First Structure -- Exponential with Practical Range

LH Rotation about the Z axis ==> 22
RH Rotation about the X' axis ==> 8
RH Rotation about the Y' axis ==> 140
Range along the Z' axis ==> 6.0 Azimuth ==> 102 Dip ==> -50
Range along the Y' axis ==> 24.2 Azimuth ==> 22 Dip ==> 8
Range along the X' axis ==> 3.2 Azimuth ==> 298 Dip ==> -39

Second Structure -- Exponential with Practical Range

LH Rotation about the Z axis ==> 37
RH Rotation about the X' axis ==> 11
RH Rotation about the Y' axis ==> 23
Range along the Z axis ==> 272.9 Azimuth ==> 151 Dip ==> 65
Range along the X' axis ==> 26.0 Azimuth ==> 123 Dip ==> -23
Range along the Y' axis ==> 129.2 Azimuth ==> 37 Dip ==> 11

Modeling Criteria

Minimum number pairs req'd ==> 350
Sample variogram points weighted by # pairs

Figure 14-15 Esaase Summary Variogram Model, 0.80 g/t Indicator, 1 m Composites, Domain 3

14.1.3 Estimation/Interpolation Methods

The block model is defined in Datamine™ using a 5 x 5 x 3 metre parent block size with a minimum 1 metre sub-cell size and with the following limits which refer to the southwest, lower corner of the block:

- Minimum Easting: 619,200E
- Maximum Easting: 623,000E
- Minimum Northing: 723,000N
- Maximum Northing: 728,000N
- Minimum Elevation: -200 metres
- Maximum Elevation: 553 metres

Blocks are flagged with a code describing whether they are inside or outside each mineralization, and topographic and oxidation domain.

Multiple Indicator Kriging (MIK) E-type estimation and Ordinary Kriging (OK) is used to estimate Au grades and includes edge dilution at contacts assuming a 0.0 g/t Au grade when no estimates are available on the unmineralized side of the wireframe.

MIK was used for Domains 1 and 3 in the Main Pit; North Pit; and South Pit mineralized envelopes. A very restrictive OK was used outside all mineralized zones and for a small volume to the South of the Main Pit, adjacent to the Footwall mineralized Domain.

Gold grades were estimated into blocks using mostly 1 metre composites within the corresponding Domain, although for the first and final estimation pass grade control data was added. Domain 4 does not have grade control data, so the indicator class means were derived from the declustered composite data.

Search orientations were guided by the variogram models, and the search distances in every case were guided by variography but optimized to reflect a correct balance of estimated blocks in each estimation pass.

Not all blocks are estimated due to the limitation imposed by the search ellipsoids. All non-estimated blocks are assigned a 0.0 g/t Au grade, although the total proportion of non-estimated blocks is very small in mineralized domains.

The indicator variable last class mean is used to control the impact of high-grade outliers. The last class means are presented in Table 14-4. The corresponding capping grades for Domain 0 and Domain 2, estimated with Ordinary Kriging, are as shown previously in Table 14-3.

Table 14-4 Esaase High-grade Au Outlier Control for MIK Domains

Domain	*Last Class Mean Used*	*Metal Removed*
1 (Last Indicator 40 g/t)	42 g/t	2.0%
3 (Last Indicator 40 g/t)	42 g/t	1.0%
4 (Last Indicator 24 g/t)	28 g/t	3.2%
5+6 (Last Indicator 40 g/t)	53.63 g/t	0%

Three estimation passes were used to estimate grades based on geologic and geostatistical considerations, including grade continuity from section to section and variogram models. Knowing which block was estimated with what level of information (on which pass) provides the information used for resource classification. Data selection uses anisotropic octant searches. The main parameters used to estimate the Domains with MIK are shown in Table 14-5. The corresponding main parameters of the OK kriging plans used for Domain 0 and Domain 2 are presented in Table 14-6.

Table 14-5 Esaase MIK Estimation plans, Domains 1, 3, 4, and 5+6

Domain	Pass	Search in Y, X, and Z	Search Angles Rotation, Gslib Convention	Min No. of Comps	Max No. of Comps	Max. No. of Comps/Octant
1	First	40x12x32m	30/0/0	8	14	2
	Second	80x24x64m	30/0/0	8	14	2
	Third	180x54x144m	30/0/0	3	14	0
3	First	40x12x32m	30/0/0	8	14	2
	Second	80x24x64m	30/0/0	8	14	2
	Third	180x54x144m	30/0/0	3	14	0
4	First	40x12x32m	30/0/0	8	14	2
	Second	80x24x64m	30/0/0	8	14	2
	Third	180x54x144m	30/0/0	3	14	0
5+6	First	50x15x40m	30/0/0	8	14	2
	Second	90x30x72m	30/0/0	8	14	2
	Third	180x54x144m	30/0/0	3	14	2

Table 14-6 Esaase Kriging Plan, OK Estimation Plans, Domains 2 and 0

Domain	Pass	Search in Y, X, and Z	Search Angles Rotation, Gslib Convention	Min No. of Comps	Max No. of Comps	Max. No. of Comps/Octant)
2	First	30x12x24m	30/0/0	8	12	2
	Second	60x24x48m	30/0/0	6	12	2
	Third	180x72x144m	30/0/0	2	12	2
0	First	30x9x24m	30/0/0	4	12	2

14.1.4 Validation

14.1.4.1 Visual Validation

Cross sections, longitudinal sections, and plan views were used to check whether the block estimated grades in relation to the nearby composites are reasonable; whether the composited assay data itself was reasonable; whether the oxide/transition/sulfide topographic surfaces, and the lithological and mineralized envelopes were correctly tagged onto the block model; and whether the estimated and assigned in situ density values and final estimated Au grades are reasonable. No evidence of any block being wrongly assigned or estimated was found.

Figure 14-16 and Figure 14-17 show the level 194.5 metre for the Northern and Southern areas within Esaase, respectively. Figure 14-18 shows cross sectional 724500N, while Figure 14-19 show a longitudinal section roughly orientated along strike. All figures show estimated Au grades and drill hole collars and grades, as well as the grade envelope and where applicable the two topographies.

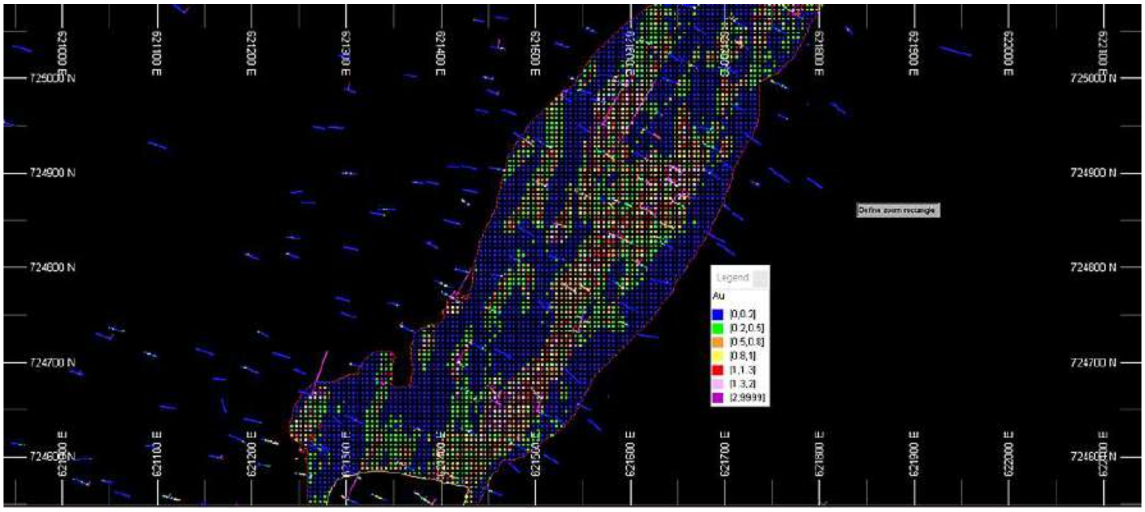


Figure 14-16 Esaase Main Pit Au Grade Estimates Within Resource Pit, Level 194.5

Note: Colour-coded according to legend shown. Grade envelope outline shown in red. Resource Pit in green.

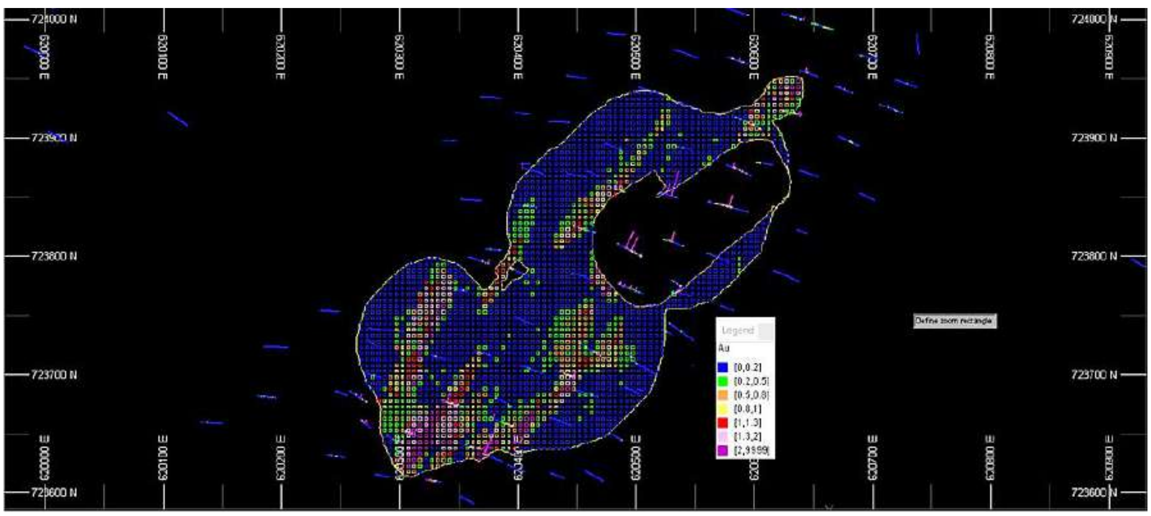


Figure 14-17 Esaase South Pit Au Grade Estimates Within Resource Pit, Level 194.5

Note: Colour-coded according to legend shown. Grade envelope outline shown in red. Resource Pit in green.

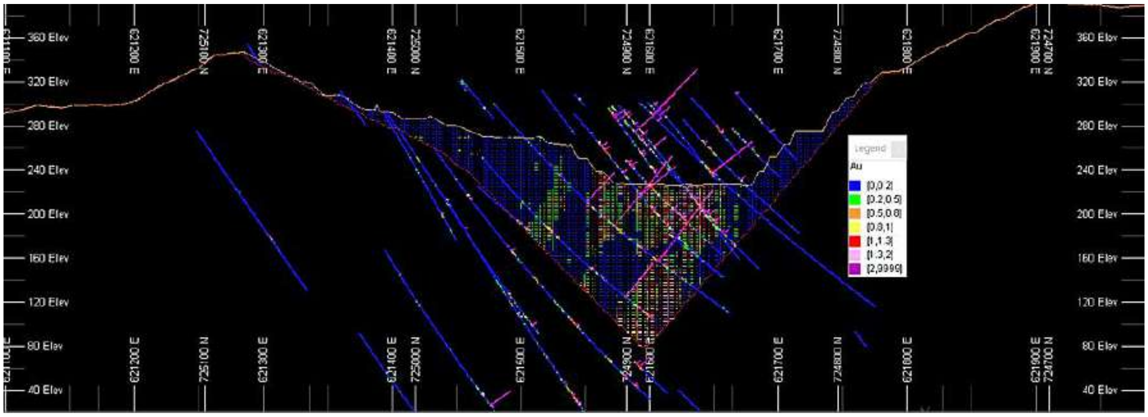


Figure 14-18 Esaase Main Pit Au Grade Estimates Within Resource Pit, Cross Section 724500N (Approx.), Looking NE

Note: Colour-coded according to legend shown. Grade envelope outline shown in red. Resource Pit in green.

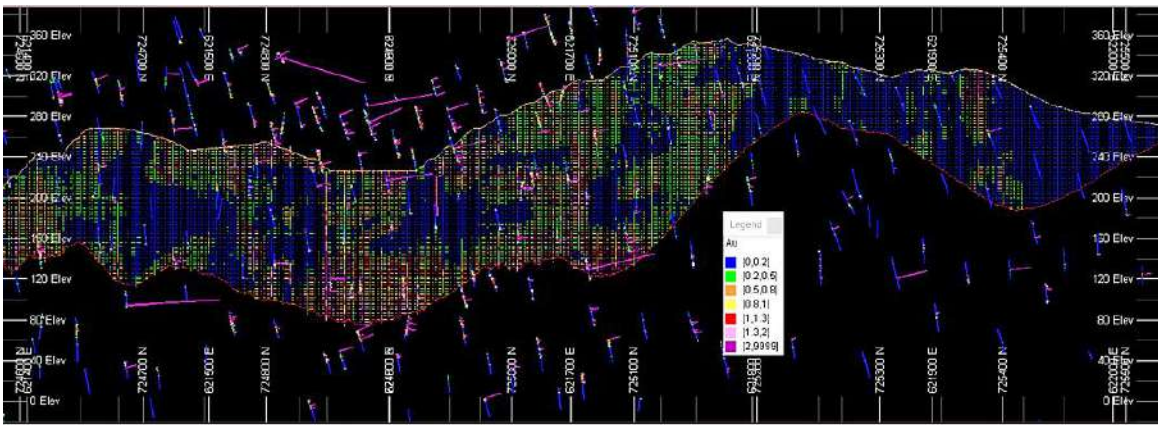


Figure 14-19 Esaase South Pit Au Grade Estimates Within Resource Pit, Longitudinal Section, Looking NE to the Right of Image

Note: Colour-coded according to legend shown. Grade envelope outline shown in red. Resource Pit in green.

14.1.4.2 Statistical Validation

The comparison of the global averages and basic statistics between the block model at cut-off 0 g/t Au and the declustered composites are shown in Table 14-7 for each Domain. The relative differences between the average estimated grades and the NN-declustered composites are acceptable for all Domains.

Table 14-7 Esaase Global Au Means by Domain

Domain	Avg. Declustered Composite (NN Model), g/t	Avg Estimated Grades, g/t	Relative Difference
1	0.84	0.80	-4.8%
2	0.53	0.53	0.0%
3	0.69	0.72	-4.2%
4	0.66	0.67	1.5%
5+6	0.88	0.88	0.0%

Figure 14-20 shows drift plots with Au estimated block grades and Nearest Neighbour declustered composites in the Easting, Northing, and Vertical directions. These plots show the estimated block grades closely reproduce the grade trends observed in the original composites.

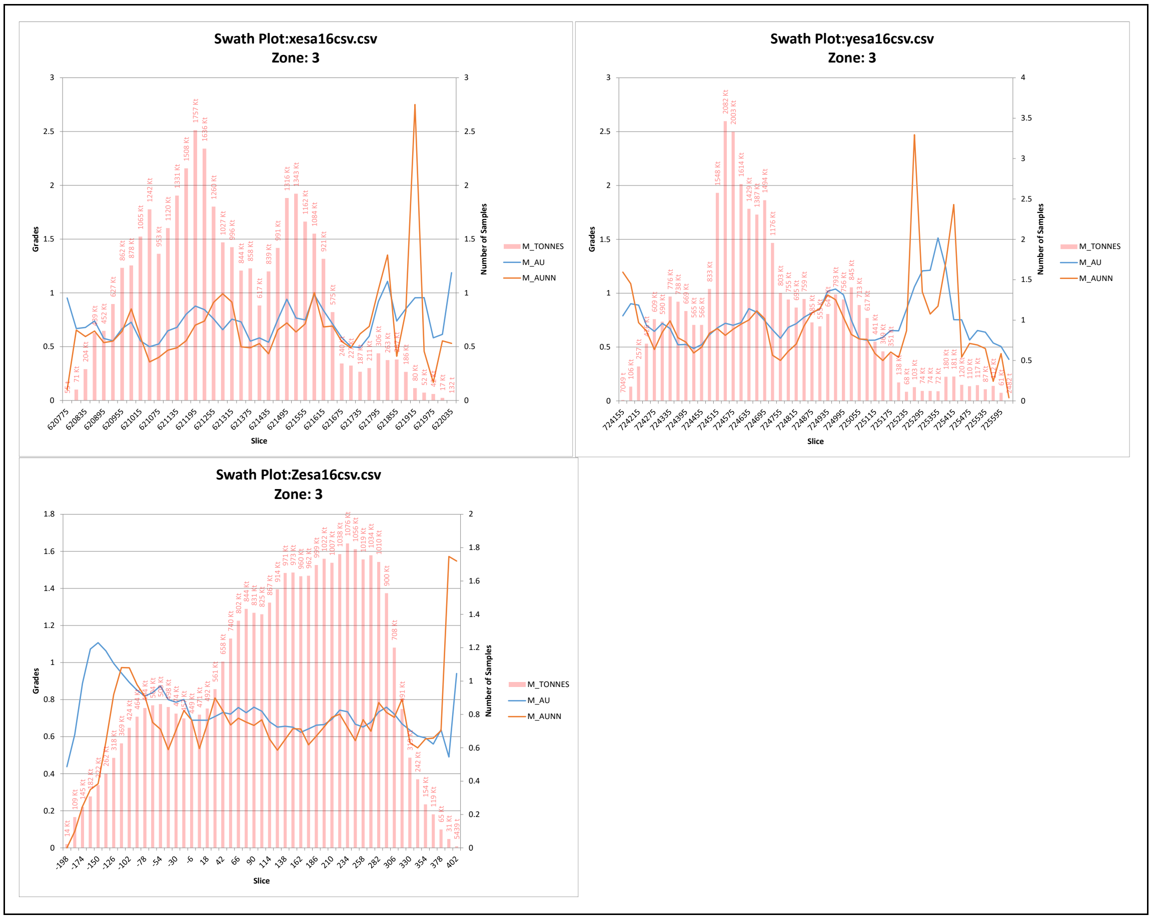


Figure 14-20 Esaase Drift Plot, Domain 3 Au Grade Estimates (in Blue) vs Declustered Composites (Nearest Neighbor Model, in Orange)

Note: Histograms are number of data (second Y-axis); Easting, Northing, and Elevations, swaths every 12 m, all kriging passes

14.1.5 Classification of Mineral Resources

The Mineral Resource estimate is classified into Measured, Indicated, or Inferred categories after considering past production reconciliation, observed continuity of mineralization, knowledge of lithological and structural controls on mineralization, and reliability of sampled data and were classified using a multi-stage approach.

The criteria used in the first stage of the resource classification are:

1. Measured blocks – estimated within an ellipsoid that is 40 x 12 x 32 metre (along-strike, across-strike, and sub-vertical respectively), with a minimum of 8 composites from at least 2 drill holes, and 2 composites maximum per octant defined.
2. Indicated blocks – estimated within an ellipsoid that is 80 x 24 x 64 metre (along-strike, across-strike, and sub-vertical respectively), with a minimum of 8 composites from at least 2 drill holes, and 2 composites maximum per octant defined.
3. Inferred blocks – estimated within an ellipsoid that is 180 x 54 x 144 metre (along-strike, across-strike, and sub-vertical respectively), with a minimum of 3 composites from at least 2 drill holes, and 2 composites maximum per octant defined.

The second stage involved the reblocking of the estimation pass indicators to a 10 x 10 x 6 metre temporary block model by majority coding, then using those indicators as data to estimate the three indicators using a simple Inverse Distance (squared) method to assign probabilities of each independently into the parent blocks and then choosing the highest probability as the final category for each block.

The third stage involved analyzing the classification codes in the blocks visually and setting additional restrictions based on elevation to account for where drill holes become sparser at depth. The additional restrictions implemented were:

- Any block flagged as measured below 150 metre elevation was classified as Indicated.
- Any block flagged as indicated below 50 metre elevation was classified as Inferred.

All blocks outside the mineralized envelope were classified as Inferred. Figure 14-21 and Figure 14-22 show a longitudinal section and a plan view (level 194.5m) of Esaase's resource classification. Also shown are the current and original surfaces, as well as the mineralized envelopes.

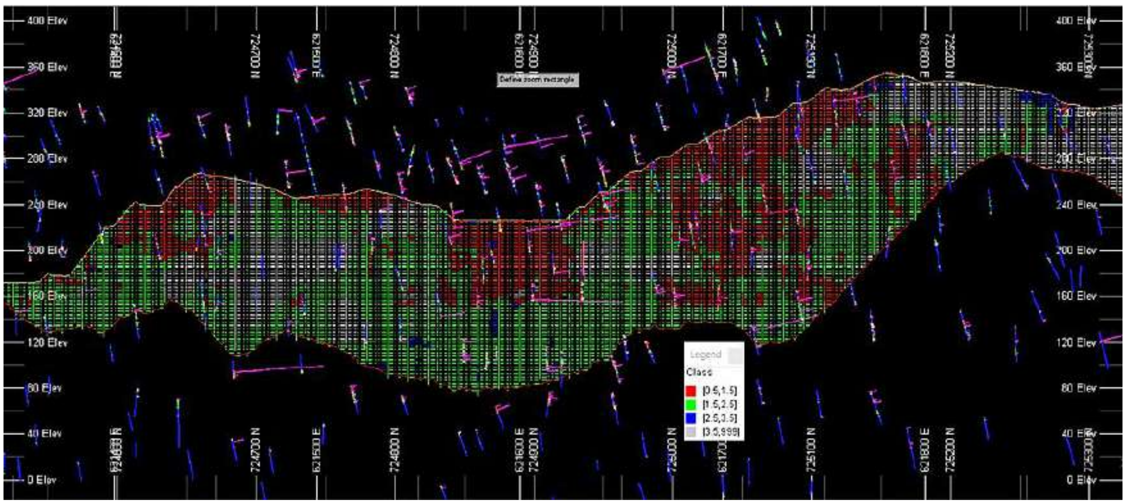


Figure 14-21: Esaase Resource Classification, Longitudinal Section

Note: Measured, Indicated, and Inferred are represented by red, green, and blue, respectively. June 2021 topography and Resource Pit limits. Grey blocks are not classified due to being outside the mineralized estimates.

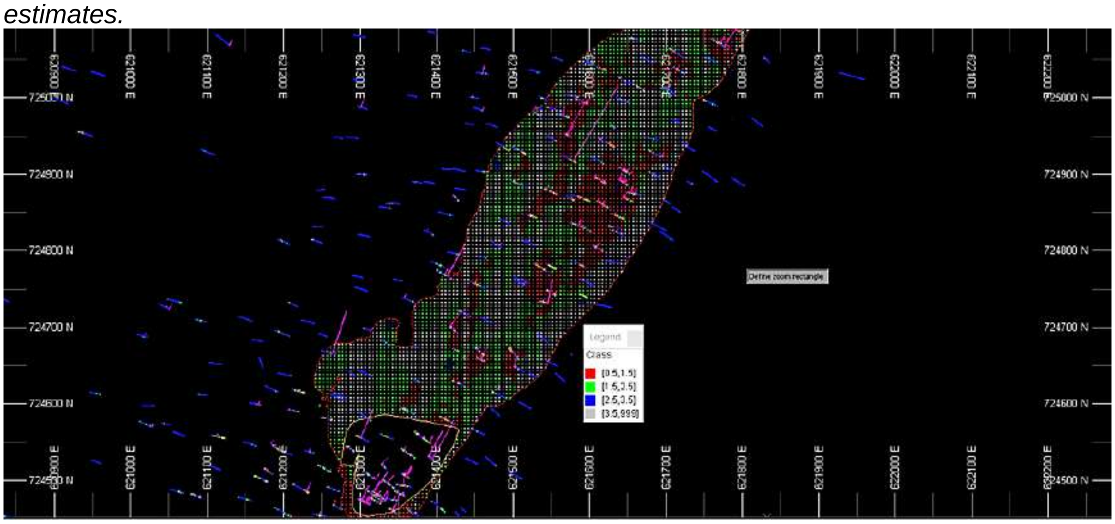


Figure 14-22 Esaase Resource Classification, Level 194.5m.

Note: Measured, Indicated, and Inferred are represented by red, green, and blue, respectively. June 2021 topography and Resource Pit limits. Grey blocks are not classified due to being outside the mineralized estimates.

14.1.6 Comparison with Production Results

The 2021 Measured and Indicated Resource Model was compared with the in situ the grade control model (Asanko_CG), with the undiluted mine plan model (Asanko_MP), and with the "Final Mined out" reconciled Mill production tonnages and grades. The comparison is limited to Main and South pit production results from January 1, 2020, through June 30, 2021, at a gold cut-off grade of 0.5 g/t, 0.8 g/t, and 1.3 g/t.

The 2021 Resource Model predicts tonnes, grade and contained metal in the Main pit within 10% relative to the grade control, mine plan, and reconciled mill production at 0.5 g/t Au and 0.8 g/t Au cut-offs, and within 17% at a 1.3 g/t cut off (Table 14-8). These comparisons should not be construed as resources, they are only validation tools.

Table 14-8 Esaase Main Pit Mined-out Volume Comparisons, Resource and Grade Control Models

Esaase Main Mined-out Volume: December 31, 2019 to June 30, 2021 (All Domains)			
COG = 0.5	**Measured + Indicated**		
	Tonnes	**Au (g/t)**	**Gold (Oz)**
2021_RES_MODEL	6,183,071	1.14	226,510
ASANKO_GC	6,104,586	1.19	232,815
ASANKO_MP (UNDIL)	5,815,394	1.16	216,630
2021_RES_MODEL/ASANKO_GC	101.29%	96.06%	97.23%
2021_RES_MODEL/ASANKO_MP (UNDIL)	106.32%	98.34%	104.56%
COG = 0.8	**Measured + Indicated**		
	Tonnes	**Au (g/t)**	**Gold (Oz)**
2021_RES_MODEL	3,666,313	1.49	175,157
ASANKO_GC	3,793,708	1.52	185,566
ASANKO_MP (UNDIL)	3,890,920	1.38	173,063
FINAL MINED (OFFICIAL)	4,018,357	1.34	173,507
2021_RES_MODEL/ASANKO_GC	96.64%	97.67%	94.39%
2021_RES_MODEL/ASANKO_MP (UNDIL)	94.23%	107.41%	101.21%
2021_RES_MODEL/FINAL MINED (OFFICIAL)	91.24%	110.64%	100.95%
COG = 1.3	**Measured + Indicated**		
	Tonnes	**Au (g/t)**	**Gold (Oz)**
2021_RES_MODEL	1,679,401	2.05	110,509
ASANKO_GC	1,798,699	2.08	120,480
ASANKO_MP (UNDIL)	1,613,656	1.81	93,827
2021_RES_MODEL/ASANKO_GC	93.37%	98.24%	91.72%
2021_RES_MODEL/ASANKO_MP (UNDIL)	104.07%	113.17%	117.78%

14.1.7 Reasonable Prospects of Eventual Economic Extraction

The Esaase mineralization is assumed amenable to open pit mining, and milling and recovery through CIL gold processing, and was evaluated for reasonable prospects for eventual economic extraction by constraining the Mineral Resources within a conceptual pit shell optimized in NPV Scheduler™. The assumptions used in preparing the conceptual pit, include mining and processing costs, metallurgical recovery, metal price and general and administrative costs and other technical parameters. The primary assumptions are shown in Table 14-9 and approximately correspond to the 0.50 g/t Au resource cut-off. A significant additional cost in the case of Esaase is the ore transport overland from the pit to the plant for a total of 30 km approximately. *See "Cautionary Note about Mineral Resources".*

Table 14-9 Esaase Conceptual Constraining Pit Parameters

Parameter	Value
Gold Price (US$/ounce)	1,600
Mining Cost (US$/tonne)	1.03 – 2.24
Mining Cost Incremental (US$/Vertical 6m)	0.0059 – 0.0193
Mill Feed Transport (US$/tonne)	6.89
Process Cost (US$/tonne)	8.79 – 11.32
Gold Recovery (%)	Refer to Table 13-29
General and Administration (US$/tonne)	6.55

14.1.8 Mineral Resource Estimate

The Esaase Mineral Resource estimate is reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014. The Qualified Person is Mr. Mario E. Rossi, FAusIMM, SME, IAMG, and Principal Geostatistician of Geosystems International Inc. The effective date of the Mineral Resource estimate is February 28, 2022. The Mineral Resource estimate is reported assuming open pit mining and milling and CIL gold processing methods using a cut-off grade of 0.5 g/t Au, is constrained within a conceptual open pit prepared using NPV Scheduler™ software. The Esaase Mineral Resource estimates are summarized in Table 14-10.

Table 14-10 Esaase Mineral Resource Estimate at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

Category	Cutoff Grade (g/t Au)	Tonnes (kt)	Au (g/t)	Au Metal Contained (koz)
Measured	0.5	10,915	1.25	437
Indicated	0.5	11,655	1.27	475
Measured & Indicated	0.5	22,569	1.26	912
Inferred	0.5	647	1.22	25

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion as of February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software using several technical parameters including:*
    a. *$1,600/oz Au price*
    b. *$1.03/t to $2.24/t mining costs*
    c. *$6.89/t mill feed transport costs*
    d. *$8.79/t, to $11.32/t processing costs*
    e. *Au recoveries per Table 13-29*
    f. *$6.55/t G&A*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

The estimated grades and tonnages of the remaining Measured and Indicated Au mineralization for Esaase and for multiple cut-offs are shown in Figure 14-23.

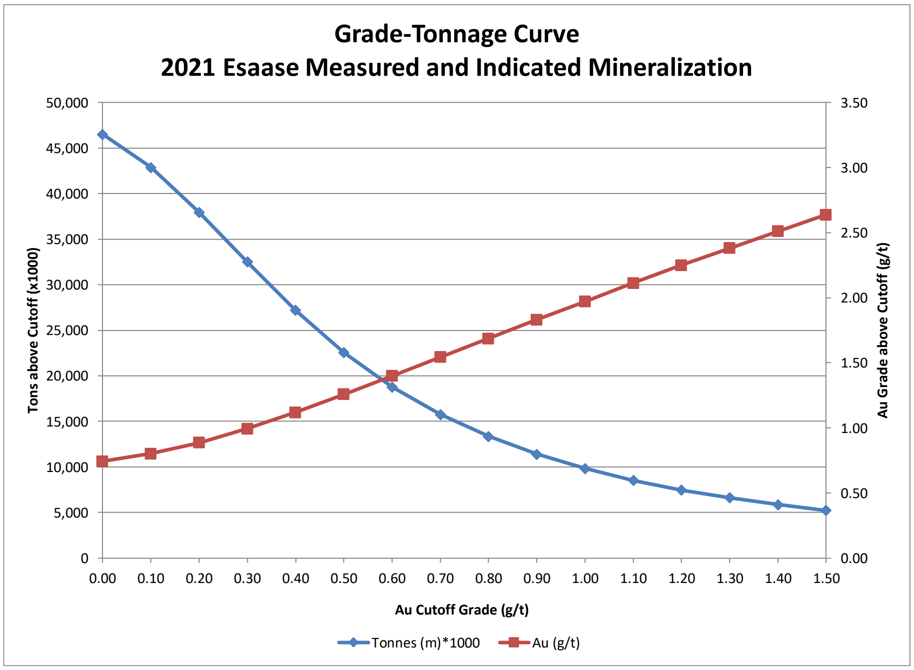


Figure 14-23 Esaase Measured and indicated Grade-Tonnage Curves

14.1.9 Factors That May Affect the Mineral Resource Estimate

Other than as discussed in other sections of this report there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the Mineral Resource estimates. Other relevant factors that may materially affect the Mineral Resources, including mining, metallurgical recovery, and infrastructure are reasonably well understood according to the assumptions presented in this Report.

There is some risk associated to the Mineral Resource estimate presented in this Report stemming from two different sources. Firstly, the mineralized envelopes are interpretations based on exploration drilling, short-scale production data and pit mapping. The interpretations carry what is considered a moderate level of risk, which affects mostly the predicted mineralized tonnages.

Secondly, the grade estimates are calibrated to grade control model that carries its own level of uncertainty, in addition to the implicit assumption that the calibration holds at depth. While this is a reasonable assumption in the opinion of the QP, it does also imply a moderate level of risk.

14.2 Abore Mineral Resource Estimate

14.2.1 Database

The database used to estimate the Mineral Resources of the Abore deposit consists of 525 diamond and reverse circulation drill holes for a total of 50,913.08 metre of drilling. Some of these holes are outside the Mineral Resource area and are not used in the estimation process.

The holes dip between 90º to 37º orientated towards the southwest, with only four subvertical holes, and most others dipping less than 80º. All drill holes are surveyed at approximately 30 metre down-the-hole intervals mostly using a Reflex single shot camera. Older holes are surveyed at longer intervals, initially just once at the bottom of the hole.

There are also 40,459 historical grade control samples from reverse circulation holes. An analysis of paired grade control and exploration samples up to a maximum of one metre separation distance revealed a significant conditional bias that precludes use of the historic grade control data in any calibration or reconciliation of the Mineral Resource estimate. The historical grade control data are not used for this Mineral Resource estimation.

The bulk density database consists of 247 in-situ density values, 183 values coded as “MEAS”, and 64 coded as “LAB”. MEAS-coded values were determined using wax-coat water immersion method. “LAB” samples have been taken only in the Fresh (or sulfide) zone.

14.2.2 Geological Models

Wireframes and surfaces representing topographic surfaces, lithology, oxidation state, structures, and mineralization domains were developed using Leapfrog modelling software. An original-topography surface is used during grade estimation as a domain boundary and an as-mined surface is used to deplete the estimated block grades before reporting Mineral Resources. A series of granitic and sedimentary rock wireframes are used to code lithology into the block model but are not used during grade estimation. Two weathering surfaces representing the boundary between Oxides and Transition zones and Transition and Fresh zone are used to code weathering type into the block model. They are used for in situ density assignment but are not used for grade estimation.

A series of 0.3 g/t Au grade shells are used to code a mineralized material zone into the block model and are used in grade estimation. Structures that crosscut the granitic mineralized bodies are used to truncate as appropriate the along-strike continuity of the granites and grade shells. Figure 14-24 shows a three-dimensional view of the Au grade shells and the original-topography surface. Drill holes traces and collars are also shown.

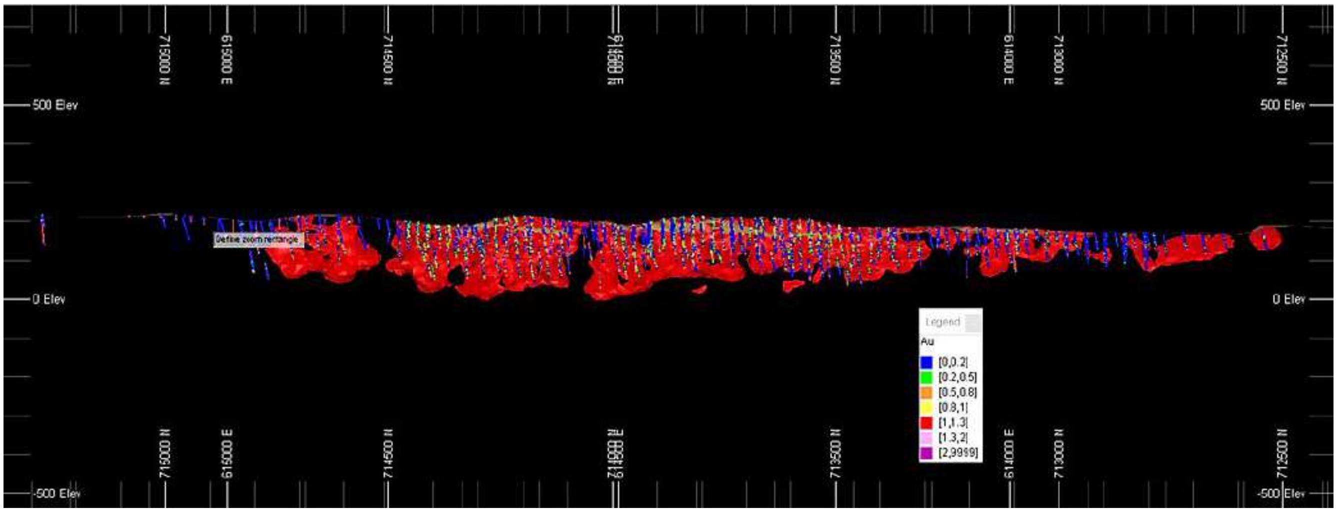


Figure 14-24 Abore Three-dimensional View of the 0.3 g/t Au Grade Envelope in Red and Topography in Brown

Note: Looking from underneath to the northwest; drill holes traces and collars are also shown.

14.2.3 Exploration Data Analysis

The drill hole sampling is mostly at one-metre intervals, although approximately 30% are at two-metre intervals. There are 33,342 assays in the overall database with a maximum value of 140 g/t Au. The gold distribution has a global coefficient of variation of almost five, indicating high variability, as would be expected in Birimian-style Au deposits

Figure 14-25 and Figure 14-26, show about 26% of the total assay intervals captured by the grade envelope are below 0.3 g/t Au, which is an adequate amount of dilution to limit occurrence of some of the artifacts that the use of grade envelopes can cause during grade estimation.

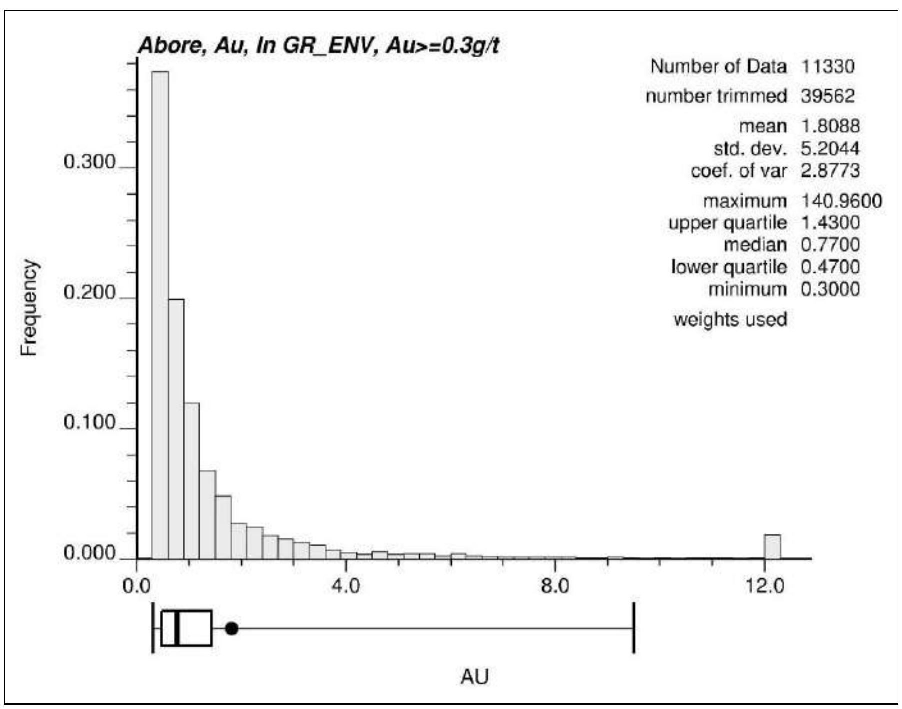


Figure 14-25 Abore Histogram and Basic Statistics of Samples Within the Grade Envelope, Au ≥ 0.3 g/t

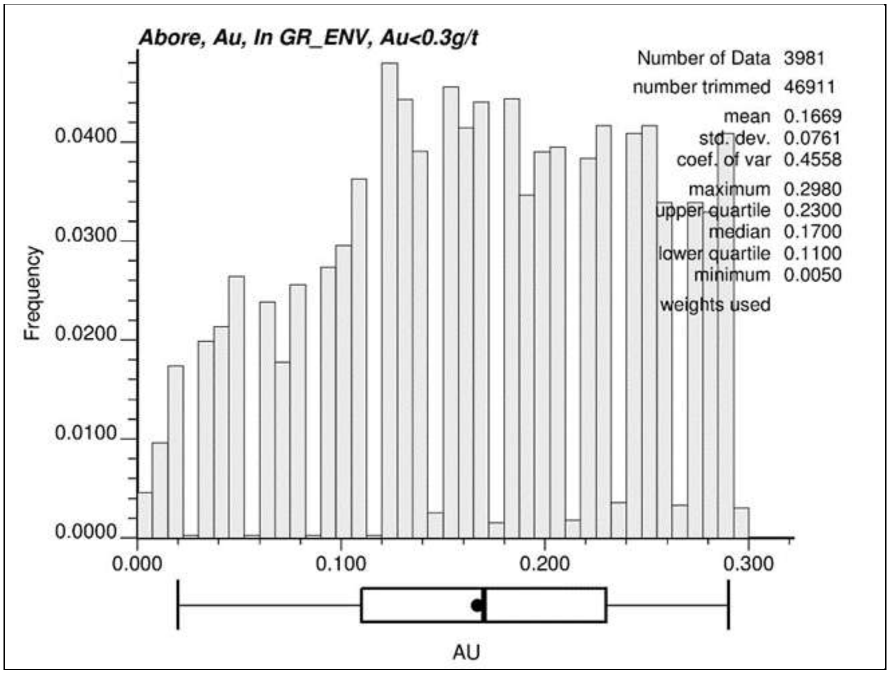


Figure 14-26 Abore Histogram and Basic Statistics of Samples Within the Grade Envelope, Au < 0.3 g/t

14.2.3.1 Density Assignment

The average measured density of "LAB"-coded samples combined, or by separate oxidation domain is 3% to 10% greater than comparable "MEAS"-coded samples. Only the arithmetic averages "MEAS"-coded samples by oxidation domain are used to assign densities to the block model because the waxed coat method used to determine the "MEAS"-coded sample densities is generally a reliable procedure and because and the use of the apparent high-bias "Lab" coded samples might result in an over estimation of tonnage. The summary statistics of the in-situ density used in the Mineral Resource estimate are presented in Table 14-11.

Table 14-11 Abore Statistics of Density Values, "MEAS", Abore

Mineralization Type	Number of Samples	Mean	Standard Deviation	Interval [Mean±3*σ]
Oxide	29	1.67	0.0399	{1.55 ≤ 1.67 ≤ 1.79}
Transition	8	2.04	0.0629	{1.85 ≤ 2.04 ≤ 2.23}
Fresh/Sulphide	146	2.62	0.0093	{2.59 ≤ 2.62 ≤ 2.65}

14.2.3.2 Composites

One-metre-long composites were prepared from the original assay data, truncated at the contact of the 0.30 g/t Au envelope. No significant correlation between assayed Au grades and assay length is evident so all resulting composites greater or equal to 0.40 metre were used to estimate grades. Figure 14-27 shows the basic statistics of all composites inside the 0.3 g/t Au envelope. The coefficient of variation is 3.279. Figure 14-28 shows the cumulative probability function for the composites inside the 0.3 g/t Au grade envelope. This probability graph was used as a guide to define the capping thresholds as discussed below.

Quantile-Quantile plots of Au grade distributions of weathered and non-weathered domain one-metre composites within the 0.3 g/t Au envelope are virtually identical up to the 1.50 g/t Au and very similar up to the 3.0 g/t Au thresholds supporting the decision to ignore the oxidation boundaries when estimating grade.

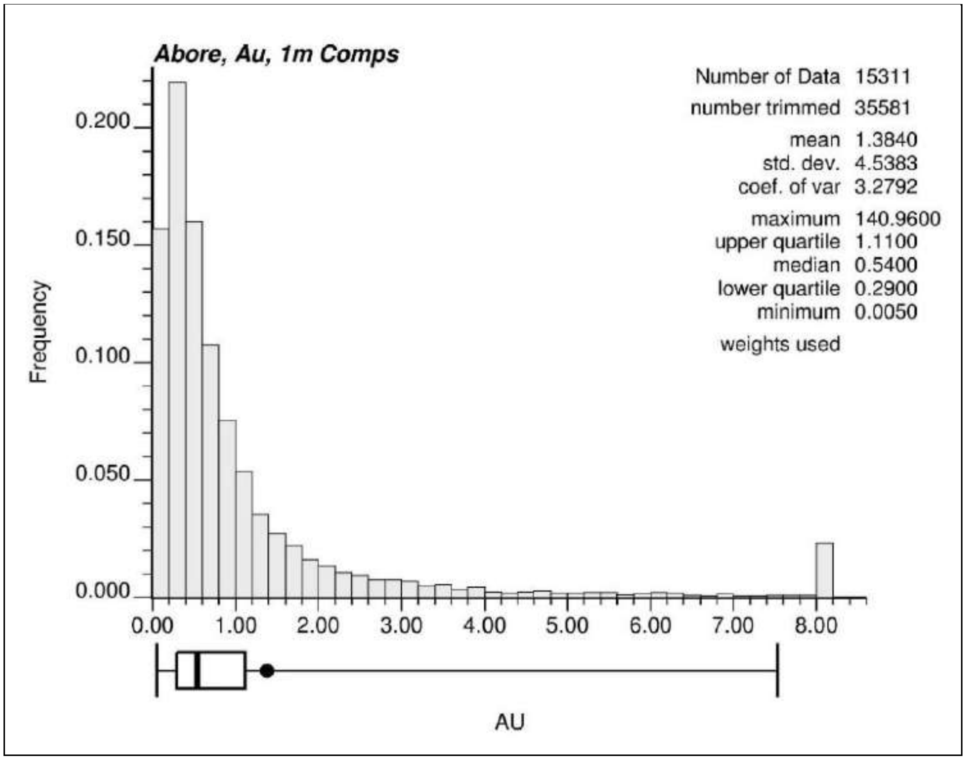


Figure 14-27 Abore Histogram and Basic Statistics, Au grades, All 1 m Composites Inside the 0.3 g/t Au Envelope

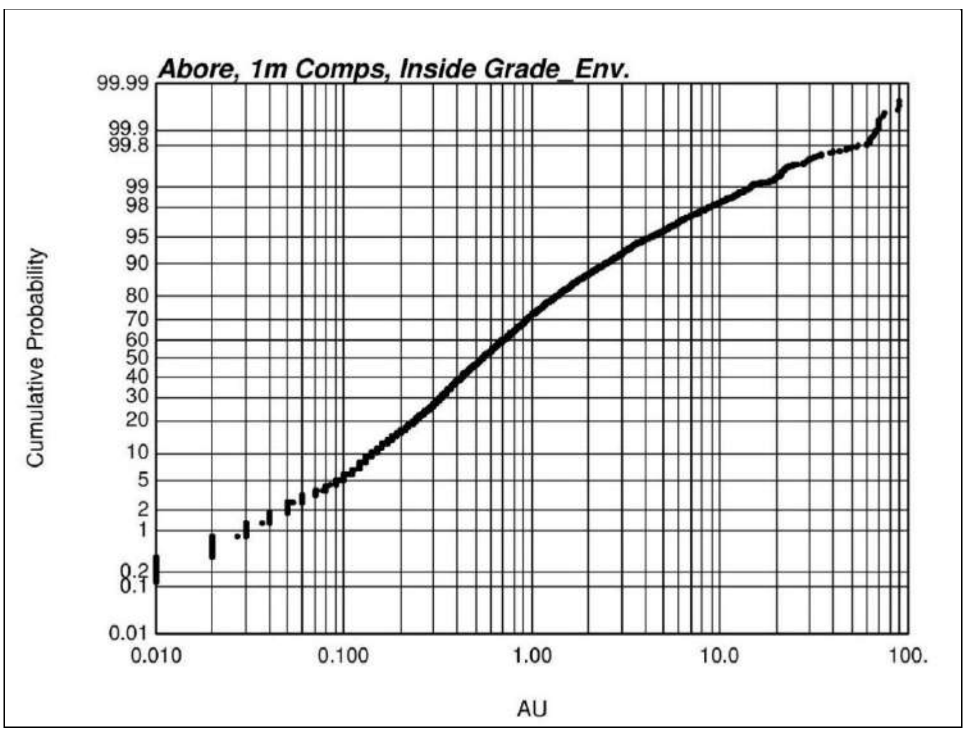


Figure 14-28 Abore Probability Plot, Au, Inside the 0.3 g/t Au Mineralization Envelope

14.2.3.3 Gold Grade Capping/Outlier Restrictions

A 30.0 g/t Au grade capping value was applied to the one-metre composite database based on a review of a cumulative probability plot and a quantity-of-metal graph for the composite data inside the 0.30 g/t Au grade envelope. The probability plot in Figure 14-28 shows the Au grade inside the 0.30 g/t Au envelope plots as a homogeneous distribution. Table 14-12 shows 0.36% of the composites were capped at 30.0 g/t Au resulting in an 8.25% metal reduction.

Table 14-12 Abore Definition of High-Grade Au Capping, 1 m Composites

Zone	Outlier Value	Number of Samples Above Outlier Value	% of Total Assay Intervals Impacted	Non-declustered Average Before Capping	Non-declustered Average After Capping	% Metal Reduction
Inside 0.3 g/t Envelope	30.0 g/t	55	0.36%	1.381 g/t	1.267 g/t	8.25%

14.2.3.4 Spatial Clustering

Figure 14-29 shows a histogram and basic statistics of the declustered composites inside the 0.30 g/t Au envelope based on a 50-metre declustering cell size. The 20% relative difference between the raw and the declustered average grades inside the 0.30 g/t Au mineralized envelope indicate significant clustering inside the grade shell.

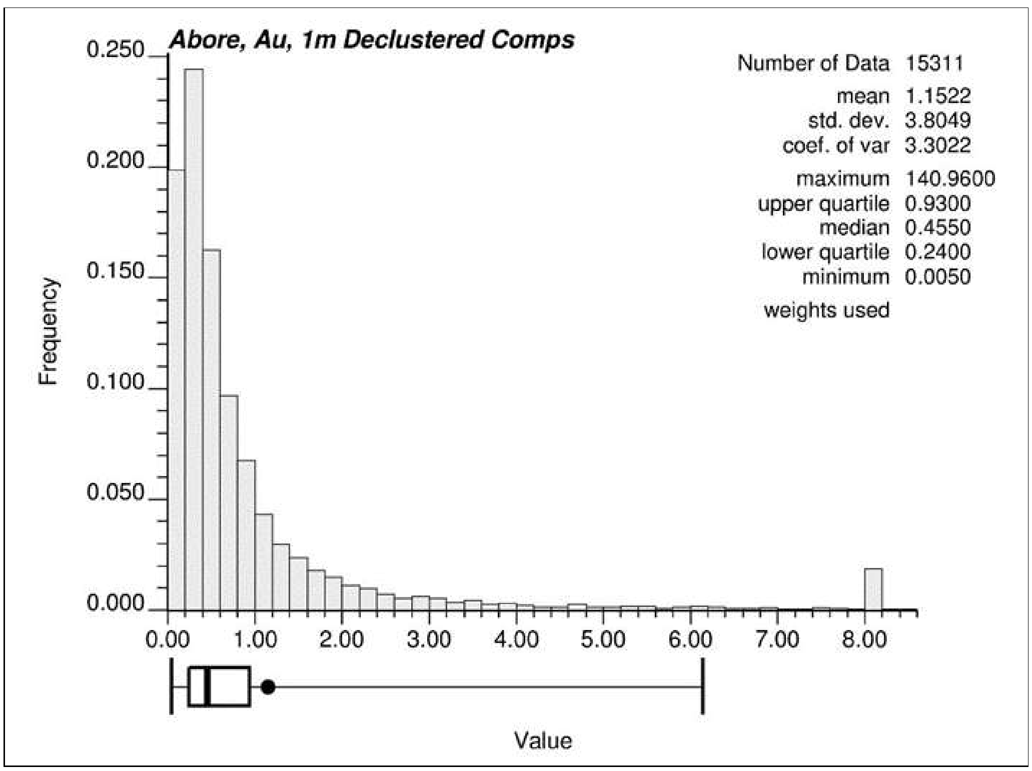


Figure 14-29 Abore Declustered Histogram and Basic Statistics, 50 m Cell Size, Au Grades, Inside the 0.30 g/t Au Envelope

14.2.3.5 Contact Analysis

The only relevant contact is the 0.30 g/t Au envelope since the oxide/transition/sulfide surfaces will be ignored at the time of estimation. Figure 14-30 shows the Au grade profiles near the 0.30 g/t Au envelope contact. As expected, there is a sharp transition in average grades comparing those composites outside with those inside the envelope supporting the decision to use only composites within a domain during grade estimation.

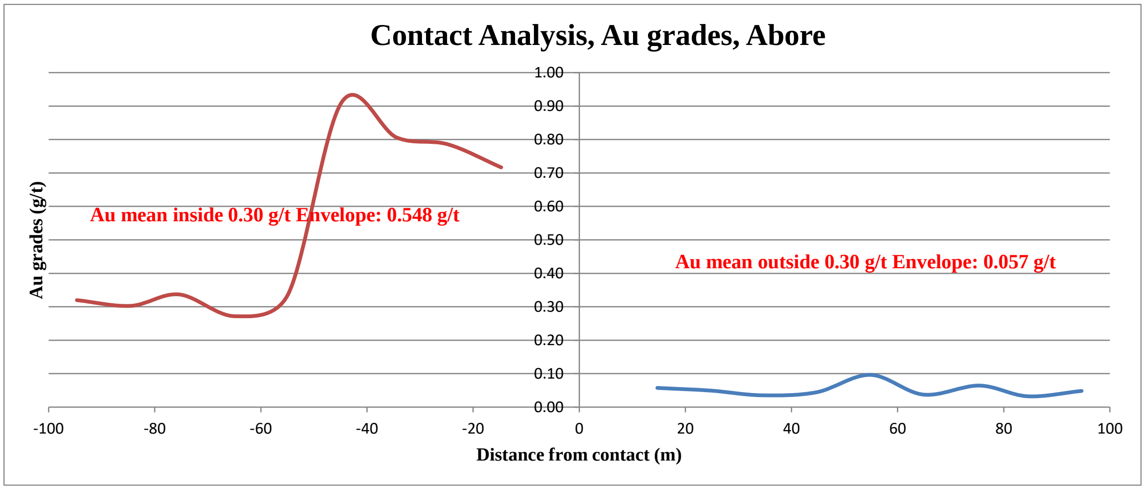
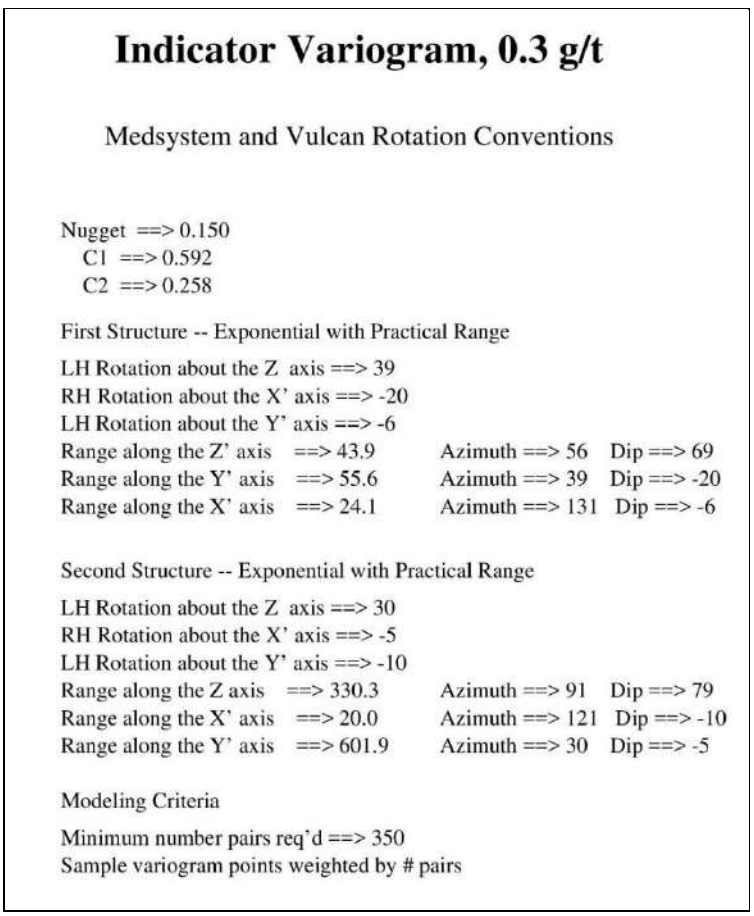


Figure 14-30 Abore Average Au Grade Profiles Near Contact of the 0.2 g/t Envelope

14.2.3.6 Variography

A correlogram model as well as a pairwise (PW) model for the overall Au distribution within the 0.30 g/t Au envelope was also obtained as a tool to aid in the later classification of the resources and to provide models for the internal dilution study as described below.



Indicator Variogram, 0.3 g/t

Medsystem and Vulcan Rotation Conventions

Nugget ==> 0.150
C1 ==> 0.592
C2 ==> 0.258

First Structure -- Exponential with Practical Range

LH Rotation about the Z axis ==> 39
RH Rotation about the X' axis ==> -20
LH Rotation about the Y' axis ==> -6
Range along the Z' axis ==> 43.9 Azimuth ==> 56 Dip ==> 69
Range along the Y' axis ==> 55.6 Azimuth ==> 39 Dip ==> -20
Range along the X' axis ==> 24.1 Azimuth ==> 131 Dip ==> -6

Second Structure -- Exponential with Practical Range

LH Rotation about the Z axis ==> 30
RH Rotation about the X' axis ==> -5
LH Rotation about the Y' axis ==> -10
Range along the Z axis ==> 330.3 Azimuth ==> 91 Dip ==> 79
Range along the X' axis ==> 20.0 Azimuth ==> 121 Dip ==> -10
Range along the Y' axis ==> 601.9 Azimuth ==> 30 Dip ==> -5

Modeling Criteria

Minimum number pairs req'd ==> 350
Sample variogram points weighted by # pairs

Figure 14-31 Abore Summary Variogram Model, 0.30 g/t Au Indicator, 1 m Composites Inside the 0.30 g/t Envelope

14.2.4 Estimation/Interpolation Methods

The block model is defined in Datamine using a 5 x 5 x 3 metre parent block size with a minimum 1 metre sub-cells size with the following limits which refer to the southwest, lower corner of the block:

- Minimum Easting: 613,500E
- Maximum Easting: 615,300E
- Minimum Northing: 712,500N
- Maximum Northing: 715,100N
- Minimum Elevation: 0 metre
- Maximum Elevation: 231 metres

An Indicator-modified Ordinary Kriging (IMOK) method is used to estimate Au grades within the 0.30 g/t Au envelope, only using composites within the 0.30 g/t Au envelope and includes edge dilution at the contact of the 0.30 g/t Au envelope, assuming a 0.0 g/t Au grade on the outside of the grade envelope. Not all blocks inside the 0.30 g/t Au envelope are estimated due to the limitation imposed by the search ellipsoids, which generally do not fill completely the volume defined by the envelopes. The total proportion of non-estimated blocks is very small, and they are assumed to have a 0.0 g/t Au grade.

Ordinary Kriging (OK) is used to estimate an indicator variable of the proportion of each block above 0.30 g/t Au and for the grades of the proportion above the 0.30 g/t Au threshold. The same process is used to obtain a grade estimate of the proportion of the block below 0.30 g/t. In all cases a discretization of 2 x 2 x 2 points per block in X, Y, and Z directions is used.

Search orientations are guided by the variogram models, and the search distances in every case are guided as well by variography but optimized to reflect a correct balance of estimated blocks in each estimation pass. Three anisotropic octant search passes were used. A maximum of 2 composites per octant was used for all three passes. The main parameters used to estimate the indicator variable and Au grade are shown in Table 14-13.

Table 14-13 Abore Ordinary Kriging plan, 0.30 g/t Indicator and Au Grade Estimation Inside 0.30 g/t Grade Envelope

Pass	Search in Y, X, and Z	Search Angles, Rotation, GSLib Convention	Min. No. of Comps	Max No. of Comps	Max No. of Comps/Octant
First	25x12.5x16.75m	30/-5/10	8	8	2
Second	60x30x40m	30/-5/10	8	8	2
Third	120x60x80m	30/-5/10	3	12	2

14.2.5 Validation

14.2.5.1 Visual Validation

Cross sections, longitudinal sections, and plan views were used to check whether the block estimated grades in relation to the nearby composites are reasonable; whether the composited assay data itself was reasonable; whether the oxide/transition/sulfide, topographic surfaces and the 0.30 g/t Au envelope produced were correctly tagged onto the block model. No evidence of any block being wrongly estimated or tagged was found.

Figure 14-32 and Figure 14-33 show level 157.5 metre for the Northern and Southern areas within Abore, respectively. Figure 14-34 shows a cross sectional view of 714179N, while Figure 14-35 shows a longitudinal section roughly orientated along strike. All figures show estimated Au grades and drill hole collars and grades, as well as the grade envelope and where applicable the two topographies.

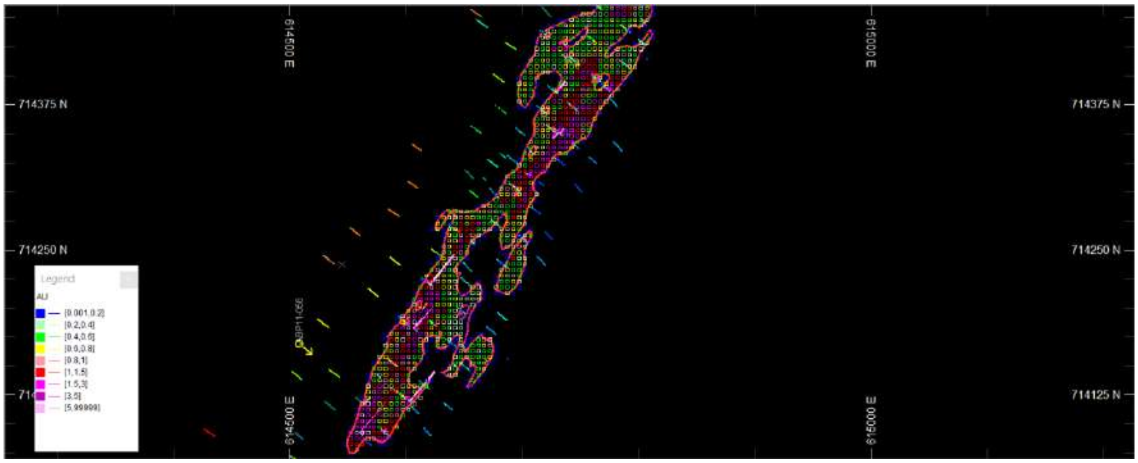


Figure 14-32 Abore Au Grade Estimates, Level 157.5, Northern Area

Note: Colour-coded according to legend shown. Grade envelope outline shown in red.

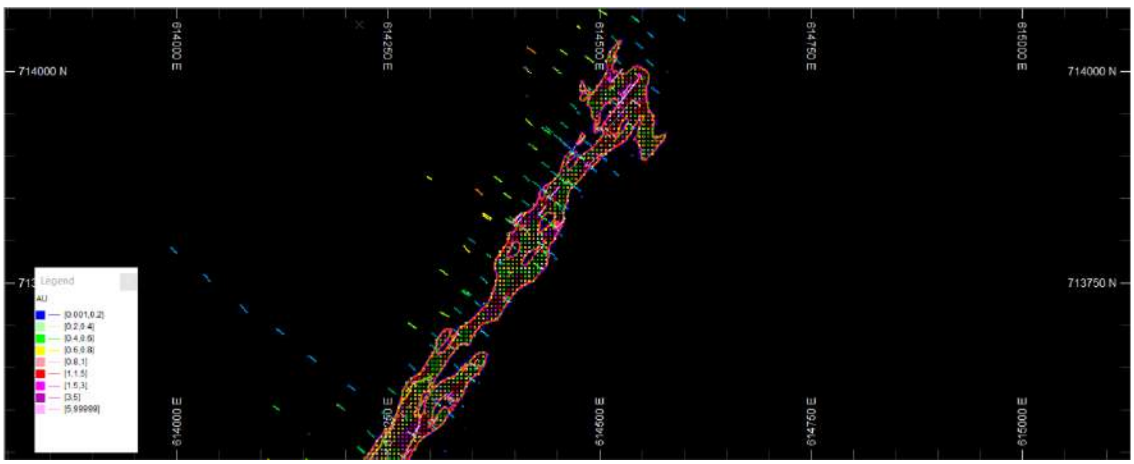


Figure 14-33 Abore Au Grade Estimates, Level 157.5, Southern Area

Note: Colour-coded according to legend shown. Grade envelope outline shown in red.

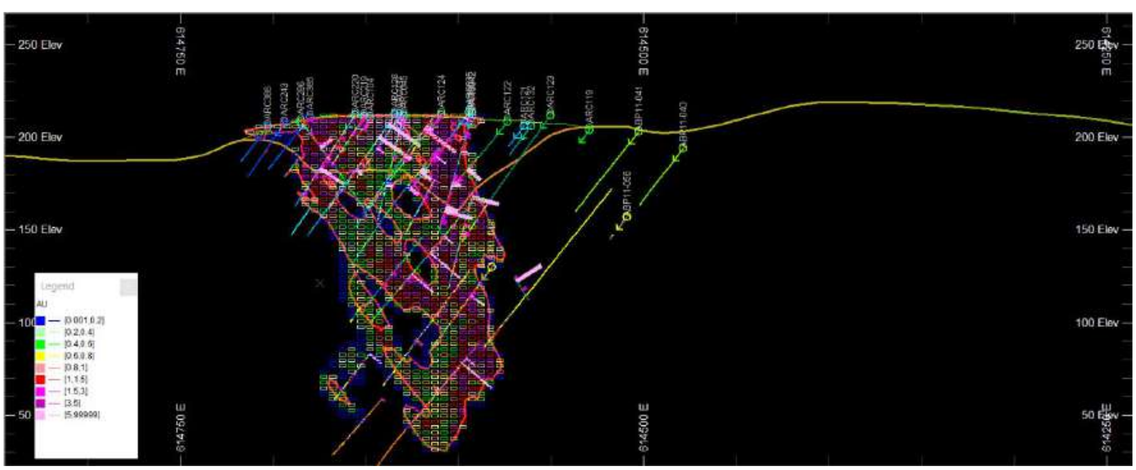


Figure 14-34 Abore Au Grade Estimates, Cross Section 714170N

Note: Colour-coded according to legend shown. Grade envelope outline shown in red.

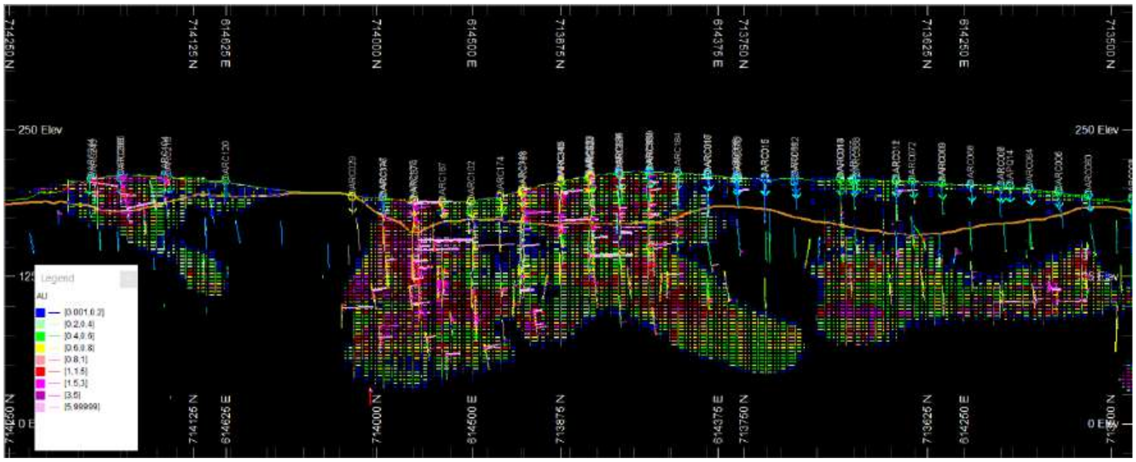


Figure 14-35 Abore Au Grade Estimates, Longitudinal Section

Note: Colour-coded according to legend shown. Only blocks within grade envelope are shown.

14.2.5.2 Statistical Validation

Table 14-14 shows the comparisons for the sub-celled and the final re-blocked 5 x 5 x 3 metre models, highlighting the average grade. The 1 metre composites were declustered using a Nearest-Neighbor (NN) model. In the final model the estimated grades average (AUIMOK column) is about 3% lower than the declustered composites (AUNN column), which is considered acceptable.

Table 14-14 Abore Basic Statistics, Estimated Grades vs 1 m Declustered Composites, Sub-celled and Final, Re-blocked Models

	SUBCELL		REBLOCKED (5x5x3m)	
	AUIMOK	AUNN	AUIMOK	AUNN
NUMBER	2395473	2395473	172292	172292
MINIMUM	0.036	0.010	0.001	0.000
MAXIMUM	95.282	34.500	89.895	34.500
MEAN	1.0290	1.1390	0.8400	0.8670
VARIANCE	2.3869	4.0552	2.0856	2.8515
STANDDEV	1.5450	2.0138	1.4442	1.6886
COEF_OF_VAR	1.5008	1.7674	1.7183	1.9470

Figure 14-36 shows drift plots with estimated Au block grades and averages of Nearest Neighbour declustered composites Au grades in the Easting, Northing, and the Vertical directions, and show that the estimated block grades closely reproduce the grade trends observed in the original composites.

Figure 14-36 Abore Drift Plot, Au Grade Estimates (in Blue) vs Declustered Composites (Nearest Neighbor Model, in Orange)

Note: Histograms are number of data (second Y-axis); swaths every 50 m, all kriging passes.

14.2.5.3 Discrete Gaussian Model Check

A change of support check was made for the entire volume within the 0.3 g/t Au grade envelope. The Discrete Gaussian model was applied after deriving the corresponding variogram model and obtaining the dispersion variance for the 5 x 5 x 3 metre selective mining unit (SMU) size.

The model parameters corresponding to the correlogram obtained for the entire domain is shown in Figure 14-37. The corresponding SMU-sized block dispersion variance is 0.8175, indicating that on average there is a very significant mixing of grades within an SMU block, which results from highly variable Au mineralization.

Correlogram, Abore

GSLIB Rotation Conventions

Nugget ==> 0.410
C1 ==> 0.561
C2 ==> 0.029

First Structure -- Spherical

LH Rotation about the Z axis ==> -2
RH Rotation about the X' axis ==> 1
RH Rotation about the Y' axis ==> 18
Range along the Z' axis ==> 5.4 Azimuth ==> 92 Dip ==> 72
Range along the Y' axis ==> 19.3 Azimuth ==> 358 Dip ==> 1
Range along the X' axis ==> 2.8 Azimuth ==> 87 Dip ==> -17

Second Structure -- Spherical

LH Rotation about the Z axis ==> -43
RH Rotation about the X' axis ==> 125
RH Rotation about the Y' axis ==> -83
Range along the Z axis ==> 220.4 Azimuth ==> 221 Dip ==> -4
Range along the X' axis ==> 69.7 Azimuth ==> 128 Dip ==> -35
Range along the Y' axis ==> 32.1 Azimuth ==> 137 Dip ==> 55

Modeling Criteria

Minimum number pairs req'd ==> 350
Sample variogram points weighted by # pairs

Figure 14-37 Abore Summary Correlogram Model Parameters, Au Within the 0.3 g/t Au Grade Envelope

Table 14-15 shows the comparison between the SMU theoretical grade-tonnage curve and the sub-celled Abore Resource Model for some specific cut-offs. The key cut-off to consider in the case of the Resources is the reporting cut-off of 0.5 g/t Au, for which the tonnages and grades are within 5% relative difference of each other, and the metal content is less than 2% relative difference. Higher cut-offs are an issue for the Reserves model, as the predicted higher grades, according to the Discrete Gaussian model, are not realistic. Therefore, it is necessary to dilute further the grades at the time of converting the Resource model to the Reserve model which is discussed in more detail in the Section 15.

In summary, these checks show that the Abore Resource model at the 0.5 g/t Au cut-off is well validated, and that there is the need for selectively diluting the higher grades to obtain a reasonable Reserves model.

Table 14-15 Abore Relative Differences at Critical Cut-offs, SMU Theoretical Model vs Sub-celled Model

Au Cutoff (g/t)	SMU (DGM Model)			Sub-celled Block Model (SBM)			Relative Differences		
	SMU. Prop. Tonnes (%)	SMU Au (g/t)	SMU Prop. Metal (%)	SBM Prop. Tonnes (%)	SBM Au (g/t)	SBM Prop. Metal (%)	Tonnes	Grade	Metal
0.00	100.0%	1.134	100.0%	100.0%	1.147	100.0%	100.00%	101.15%	0.0%
0.50	83.4%	1.281	94.2%	79.3%	1.344	92.9%	95.03%	104.92%	-1.3%
0.80	55.2%	1.607	78.2%	46.0%	1.854	74.4%	83.39%	115.37%	-3.8%
1.30	27.2%	2.216	53.1%	22.4%	2.750	53.8%	82.57%	124.10%	0.7%

These and the other statistical and visual checks presented indicate that the block model grades behave as expected, with an adequate degree of smoothing, and without obvious anomalous values. It is globally unbiased, and internally consistent with the composites and variogram models used to create it.

14.2.6 Classification of Mineral Resources

The Mineral Resource estimate is classified into Measured, Indicated, or Inferred categories after considering the reliability of the geological interpretation, the continuity of Au grades observed in the 0.3 g/t Au grade envelopes and shown in the 0.30 g/t Au indicator variogram, sample support and reliability of the sample data, and past production results at Abore. While the historical grade control data from Abore is insufficient to calibrate the resource model, the predictions regarding the amount of gold contained in previously mined area confirm continuity of Au.

Resource classification at Abore uses a two-stage approach. The criteria used in the first stage of the resource classification process are:

- Measured blocks - estimated within an ellipsoid that is 25 x 12.5 x 16.75 metre (along-strike, across-strike, and sub-vertical respectively), with a minimum of 8 composites from at least 2 drill holes, and 2 composites maximum per octant defined.
- Indicated blocks - estimated within an ellipsoid that is 60 x 30 x 40 metre (along-strike, across-strike, and sub-vertical respectively), with a minimum of 8 composites from at least 2 drill holes, and 2 composites maximum per octant defined.
- Inferred blocks - estimated within an ellipsoid that is 120 x 60 x 80 metre (along-strike, across-strike, and sub-vertical respectively), with a minimum of 3 composites from at least 2 drill holes, and 2 composites maximum per octant defined.

The second stage involved the re-blocking of the estimation pass indicators to a 10 x 10 x 6 metre temporary block model by majority coding, then using those indicators as data to estimate the three indicators using a simple Inverse Distance (squared) method to assign probabilities of each independently into the parent blocks and then choosing the highest probability as the final category for each block.

Figure 14-38 and Figure 14-39 show a longitudinal section and a plan view (level 187.5m) of Abore's Mineral Resource classification. Also shown are the current and original surfaces, as well as the 0.30 g/t Au grade envelope.

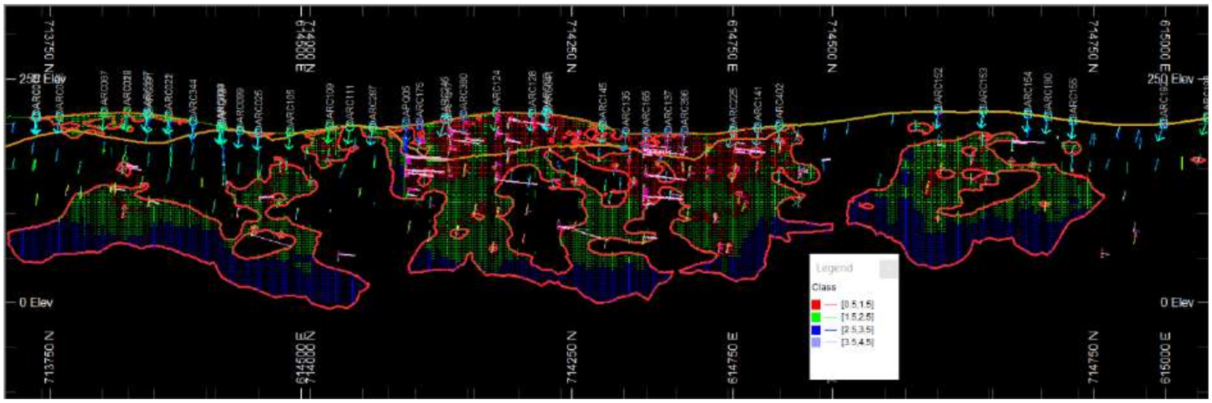


Figure 14-38 Abore Resource Classification, Longitudinal Section

Note: Measured, Indicated, and Inferred are represented by red, green, and blue, respectively. Original topography; pit limit topography, and 0.30 g/t grade envelope in red.

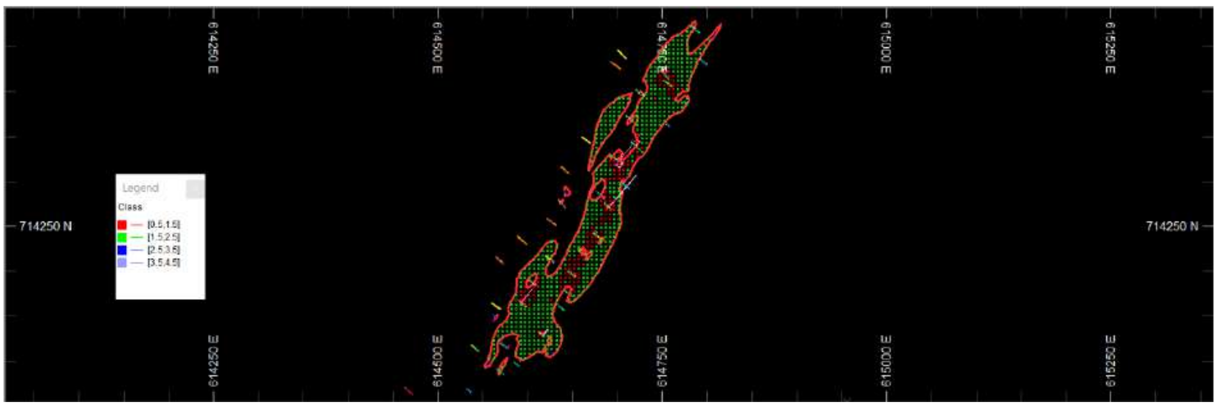


Figure 14-39 Abore Resource Classification, Level 187.5m

Note: Measured, Indicated, and Inferred are represented by red, green, and blue, respectively. Original topography; pit limit topography, and 0.30 g/t grade envelope in red.

14.2.7 Reasonable Prospects of Eventual Economic Extraction

The Abore mineralization is assumed amenable to open pit mining, and milling and recovery through CIL gold processing, and was evaluated for reasonable prospects for eventual economic extraction by constraining the Mineral Resources within a conceptual pit shell optimized in NPV Scheduler™. The assumptions used in preparing the conceptual pit, include mining and processing costs, metallurgical recovery, metal price and general and administrative costs and other technical parameters. The primary assumptions are shown in Table 14-16 and approximately correspond to the 0.50 g/t Au Mineral Resource cut-off. *See "Cautionary Note about Mineral Resources".*

Table 14-16 Abore Conceptual Constraining Pit Parameters

Parameter	Value
Gold Price (US$/ounce)	1,600
Mining Cost (US$/tonne)	1.025 - 1.647
Mining Cost Incremental (US$/Vertical 6m)	0.0087 – 0.0353
Mill Feed Transport (US$/tonne)	3.86
Process Cost (US$/tonne)	8.79 – 11.32
Gold Recovery (%)	94%
General and Administration (US$/tonne)	6.55

14.2.8 Mineral Resource Statement

The Abore Mineral Resource estimate is reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014. The Qualified Person is Mr. Mario E. Rossi, MAusIMM, SME, IAMG, and Principal Geostatistician of Geosystems International Inc. The effective date is February 28, 2022. The Mineral Resource estimate is reported assuming open pit mining and milling and CIL gold processing methods using a cut-off grade of 0.5 g/t Au, is constrained within a conceptual open pit prepared using NPV Scheduler™ software. The Mineral Resource estimates are summarized in Table 14-17.

Table 14-17 Abore Mineral Resource Estimate at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

Category	Cutoff Grade (g/t Au)	Tonnes (kt)	Au (g/t)	Au Metal Contained (koz)
Measured	0.5	3,193	1.46	150
Indicated	0.5	5,123	1.23	203
Measured & Indicated	0.5	8,316	1.32	353
Inferred	0.5	1,109	1.55	55

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion as of February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software using several technical parameters including:*
    a. *$1,600/oz Au price*
    b. *$1.025/t to1.647/t mining costs*
    c. *$3.86/t mill feed transport costs*
    d. *$8.79/t to $11.32/t processing costs*
    e. *94% Au recovery for all material*
    f. *$6.55/t G&A*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

Grade and tonnage curves are shown in Figure 14-40.

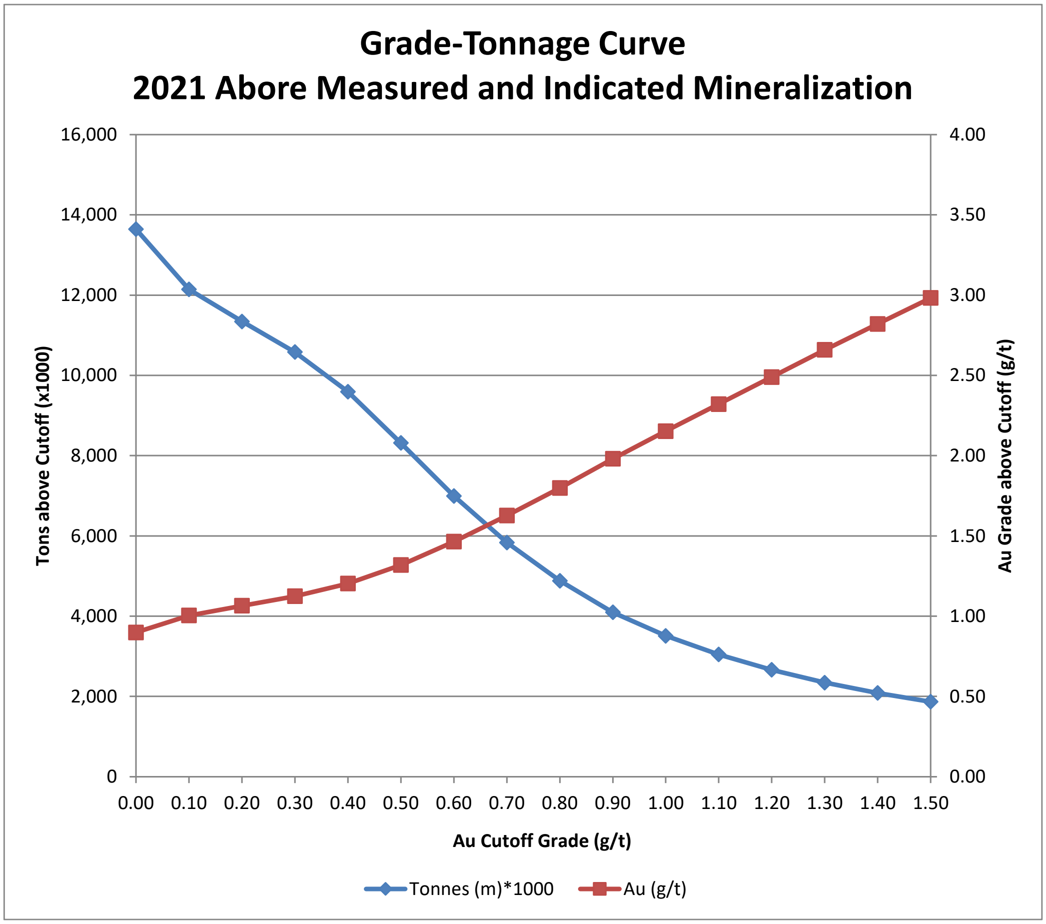


Figure 14-40 Abore Measured and Indicated Grade-Tonnage Curves

14.2.9 Factors That May Affect the Mineral Resource Estimate

Other than as discussed in other sections of this report there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the Mineral Resource estimates. Other relevant factors that may materially affect the Mineral Resources, including mining, metallurgical recovery, and infrastructure are reasonably well understood according to the assumptions presented in this Report.

There is some risk associated to the Mineral Resource estimate presented in this Report because of the interpreted grade envelope. The interpretation is based on more widely-spaced exploration drilling, and carry what is considered a moderate level of risk. This risk affects the predicted mineralized tonnages.

While the change of support check results in a good validation of the estimated grades, the change of support model used is based on certain assumptions and parameters that carry a degree of uncertainty, which is also carried to the grade estimates. The uncertainty and risk implied in the grade estimates is considered low on a global basis, corresponding to no less than yearly production volumes. Less uncertainty for quarterly production periods would require additional infill drilling.

14.3 Nkran Mineral Resource Estimate

14.3.1 Database

The Nkran exploration data used in the MRE is 928 diamond, reverse circulation, and reverse circulation with diamond tail drill holes totalling 82,460 metres of drilling with 81,464 Au assays. There are also 11,994 reverse circulation grade control drill holes totalling 338,583 metres of drilling with 225,722 Au assays. The dataset includes 36 new exploration diamond drill holes and 30 GC RC holes drilled since 2018. The exploration data was restricted to data selected up to 10 metre above the 31 May 2017 as-mined surface. A summary of the exploration drilling data, as used in the MRE, is shown in Table 14-18. All subsequent data analysis, statistics, and estimation for the MRE are limited to the validated dataset. Note that all figures and tables for the Nkran MRE section of this report were prepared by CSA Global unless otherwise stated.

Table 14-18 Nkran Database – Summary of Exploration Drill Data Used in the MRE

Description	DDH	RC	RCD	Total
Number of Holes	291	600	38	928
Metres Drilled	50,697	24,321	7,442	82,460
Number of Assays	49,787	24,236	7,441	81,464
Number of BD Measurements	273	-	-	273

Validation checks were completed after the drill data were imported into SQL and Datamine StudioRM™ software. The QP confirms that no issues that would have a material impact on the MRE were identified.

Core recovery data was not recorded for the 30 new diamond holes. Core recoveries are not expected to change in the new drilling as it infills existing drillholes. In 2018, core recovery data were reviewed for DDH and RCD core, selected below the 31 May 2017 mined surface. The results show that recoveries are reasonable within oxide (74%) and good within transitional (85%) and fresh material (98%). Oxide material in core accounts for 5% of the recovery data, whereas transitional and fresh material in core accounts for 2% and 93% of the recovery data, respectively. Core recovery for the fresh material shows good recovery for both DD (98%) and RCD (98%). Further review of the core recovery data indicates that there is no relationship between grade and recovery.

14.3.2 Geological Models

The 31 May 2017 as-mined surface is used as an upper domain boundary during grade estimation. The reported Mineral Resource estimate is limited to material below the June 2020 as-mined surface.

The 3D lithological and structural models were prepared by Asanko geologists using Leapfrog software. The host lithologies constitute three sandstone units (western, central, and eastern), two granite units (main and skinny), and two breccia units (north and south). The modelled geological wireframes provide the basis of the mineralization domains and were used to flag assay, composites, and blocks. The lithology domains are shown in Figure 14-41.

In addition to adjustments made for new drilling, the Skinny and Main Granites were re-interpreted from pit-mapping which resulted in volume changes for domains not influenced by the new drilling. The dominant sandstone domain, the Western Sandstone, has gained volume mainly from material that was interpreted as barren siltstone in 2018. A smaller proportion of the volume increase can be attributed to material previously assigned to other non-siltstone domains. The South Breccia and Central Sandstone domains were extended to the southwest to include mineralization in surface holes that had not been included previously.

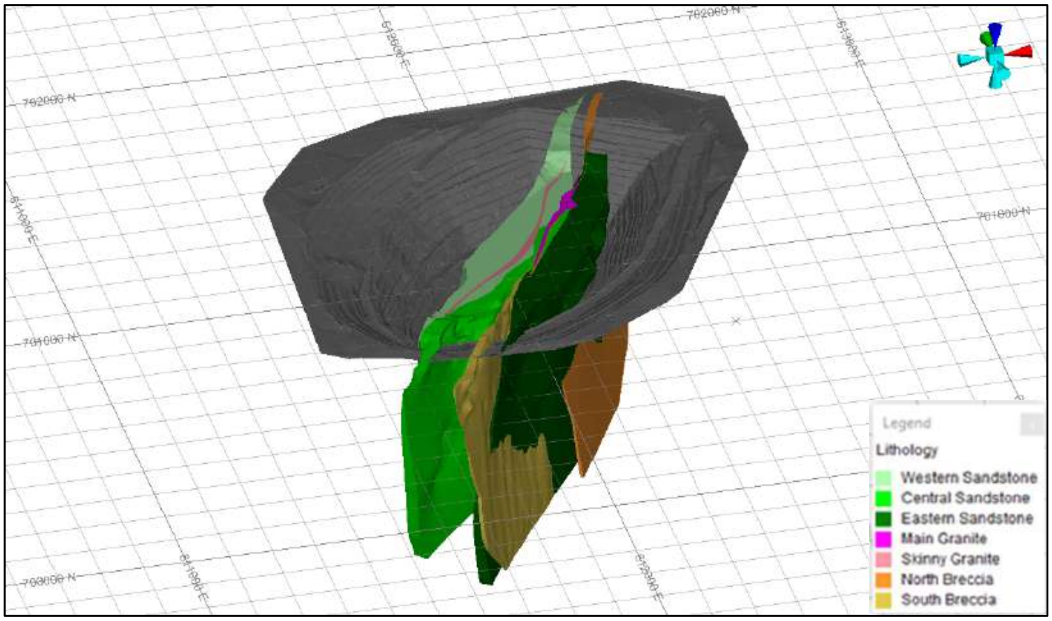


Figure 14-41 3D View of the Nkran Geological Domains Within the June 2020 Mining Surface

Asanko geologists created weathering profiles for the bottom of oxidation and the top of fresh material in Leapfrog (Figure 14-42). These surfaces were used to flag weathering into the updated model and code density values into the blocks. Note that 99% of the rock within the extents of the current MRE volume is unweathered.

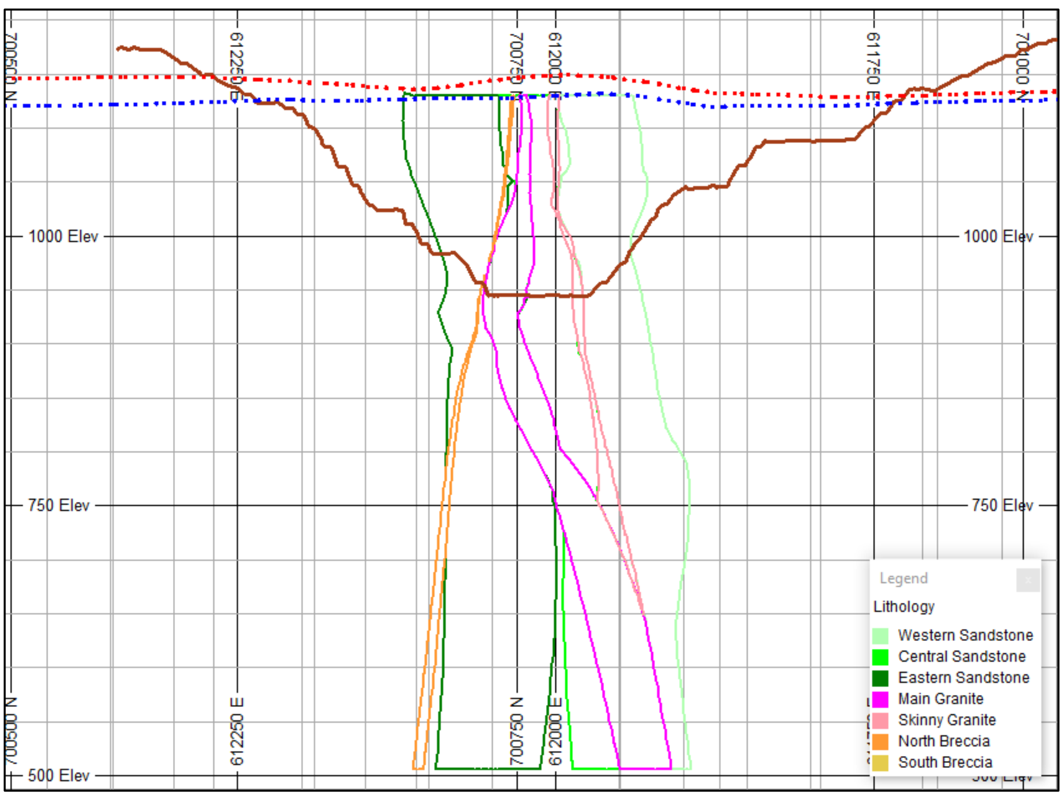


Figure 14-42 Cross-section View of the Nkran Weathering Profiles and Geological Domains

Note: Bottom of Complete Oxidation (dotted red line); Top of Fresh (dotted blue line); December 2018 Pit Shell (solid brown line)

The main lithological units, within specific fault blocks, form the basis for delineating geological domains (GEOL). Within the domains the mineralized and waste volumes have been defined using an Indicator Kriging (IK) method.

A grade compositing process in Datamine Studio RM called CompSE was used to generate 'mineable' intercepts – that is, a set of intercepts that meets set minimum length, grade and dilution criteria. The minimum grade used to delineate mineralization from waste was 0.3 g/t Au. The minimum true width used was 3 m, in line with the SMU size of 5 x 5 x 3 m (X Y x Z) modelled. Intercepts that met the CompSE criteria were assigned a value of 1 and intercepts that did not, were assigned a value of 0. The 1 and 0 values are then estimated into a block model (2.5 x 2.5 x 3 m for better resolution) using dynamic anisotropy based on structural wireframes.

The indicator estimates produce a value between 0 and 1 which is then used as a probability for establishing if a cell is mineralized, or not. Specific probabilities are selected for each domain that represent expected mineralization volumes. The probability thresholds chosen were derived in 2018 from the results of testwork done in a trial area (documented in 2019 NI 43-101) with good exploration and grade control data coverage. The threshold values are retained and used in this update.

The mineralization volumes selected within the lithology wireframes were visually validated and compared with those of the previous MRE. The overall volume increase of the mineralized model is 1% compared with the previous MRE. There is a 3% increase in the mineralized model for the most materially significant Western Sandstone domain. The volume difference between the 2018 and 2020 for each domain is presented in Table 14-19).

Table 14-19 Comparison of Nkran Domain Volumes Based on the Interpreted Geology Wireframes 2018 vs 2020

Domain	Description	2018	2020	Difference	Variance
210	Western Sandstone	14,754,525	18,670,463	3,915,938	27%
220	Central Sandstone	15,766,181	14,769,825	-996,356	-6%
230	Eastern Sandstone	22,612,406	22,697,850	85,444	0%
310	Main Granite	6,365,006	6,501,694	136,688	2%
320	Skinny Granite	1,485,769	1,195,106	-290,663	-20%
510	South Breccia	2,241,825	2,751,488	509,663	23%
520	North Breccia	3,529,594	3,379,556	-150,038	-4%
Total		**66,755,306**	**69,393,281**	**2,637,975**	**4%**

14.3.3 Exploration Data Analysis

Statistical analysis was carried out using Datamine Studio, Snowden Supervisor and GeoAccess Professional software packages.

The exploration dataset was assessed for bias in Au grade between the sample types (DDH, RC and RCD). Summary statistics and probability plots (Figure 14-43) indicate the datasets are similar and appropriate to be used together as part of the estimation.

The exploration data was also compared to the grade control to the grade control reverse circulation data. QQ plots comparing the Au grades of exploration data with the grade control reverse circulation data within a common volume for each of the mineralized domains illustrates plots selected for the Western and Central Sandstone are reasonably compatible (Figure 14-44). Summaries of the domain codes used to distinguish the data during geostatistical analysis and estimation are shown in Table 14-20.

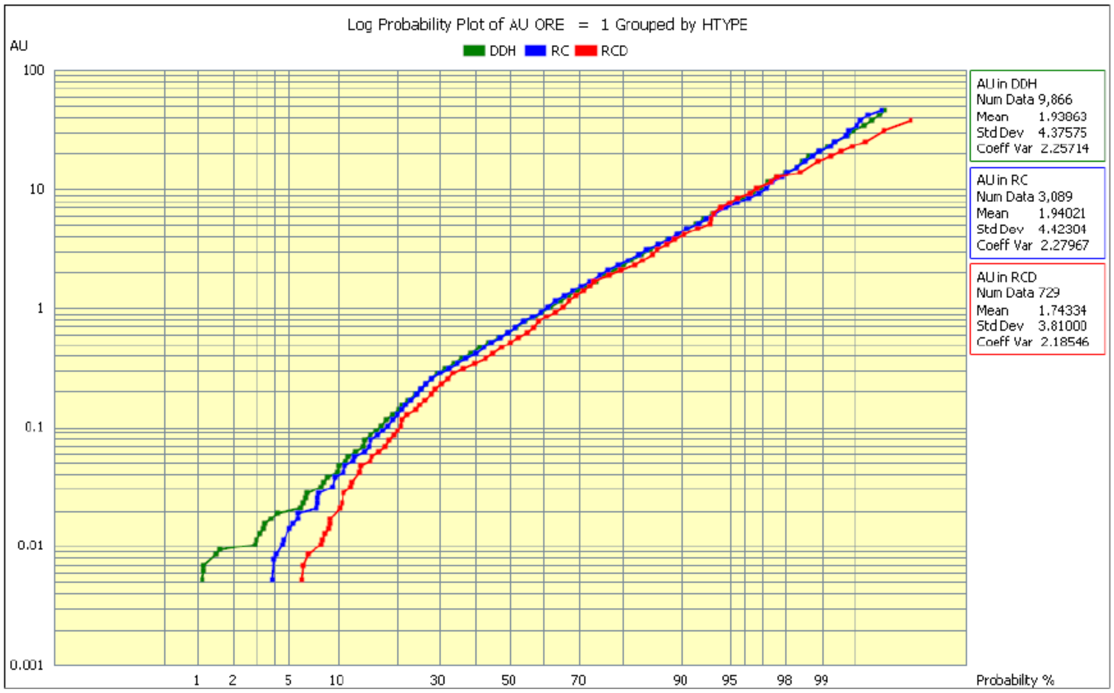


Figure 14-43 Nkran Log Probability Plots Comparing Top-cut Au Grades in DDH, RC and RCD Drill Holes

Note: DDH (green); RC (blue); RCD (red) Samples used for IK, restricted to ORE=1, based on CompSE criteria.
Source: CSA Global, 2021

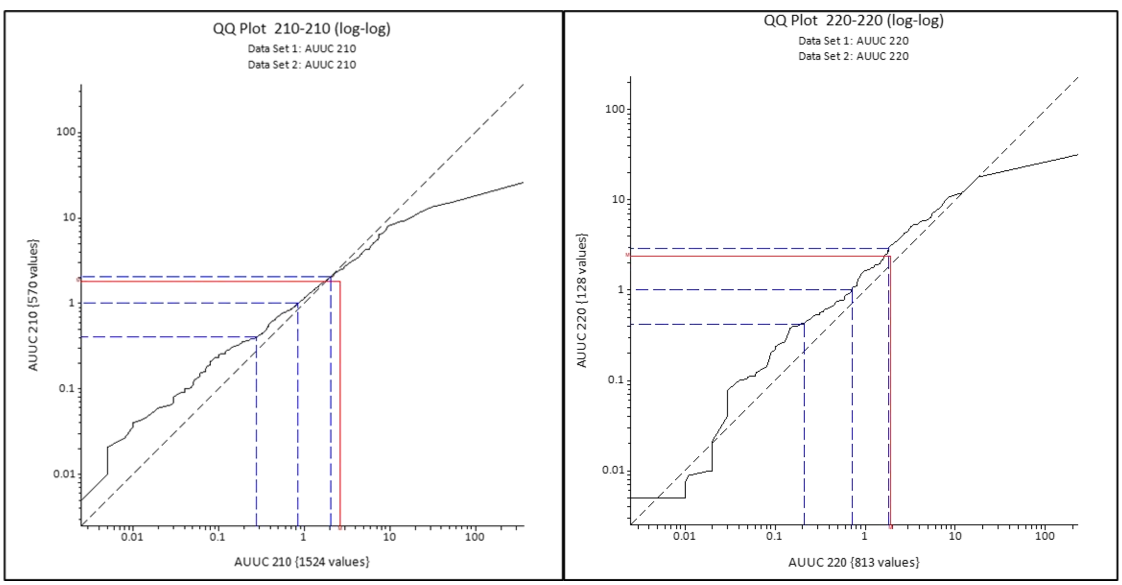


Figure 14-44 Nkran QQ Plots Comparing Au Grades in the Exploration Dataset (X axis) to the Dynamic RC GC Dataset (Y axis) for Western Sandstone (LHS) and Central Sandstone (RHS)

Source: CSA Global, 2021

Table 14-20 Nkran Data Field Flagging and Description

Field	Code	Description
OXIDE	1 2 3	Oxide Transitional Fresh/Sulphide
GEOL	210 220 230 310 320 510 520 900	Western Sandstone Central Sandstone Eastern Sandstone Main Granite Skinny Granite South Breccia North Breccia Siltstone/Waste
ESTZON	210 220 230 310 320 510	Western Sandstone and IK_USE=1 Central Sandstone and IK_USE=1 Eastern Sandstone and IK_USE=1 Main Granite and IK_USE=1 Skinny Granite and IK_USE=1 South Breccia/North Breccia and IK_USE=1
IK_USE	0 1	Waste Mineralization

Note: ESTZON defines the mineralization domains and is based on GEOL, and where IK_USE=1.

The naïve statistics per ESTZON domains are shown in Figure 14-45.

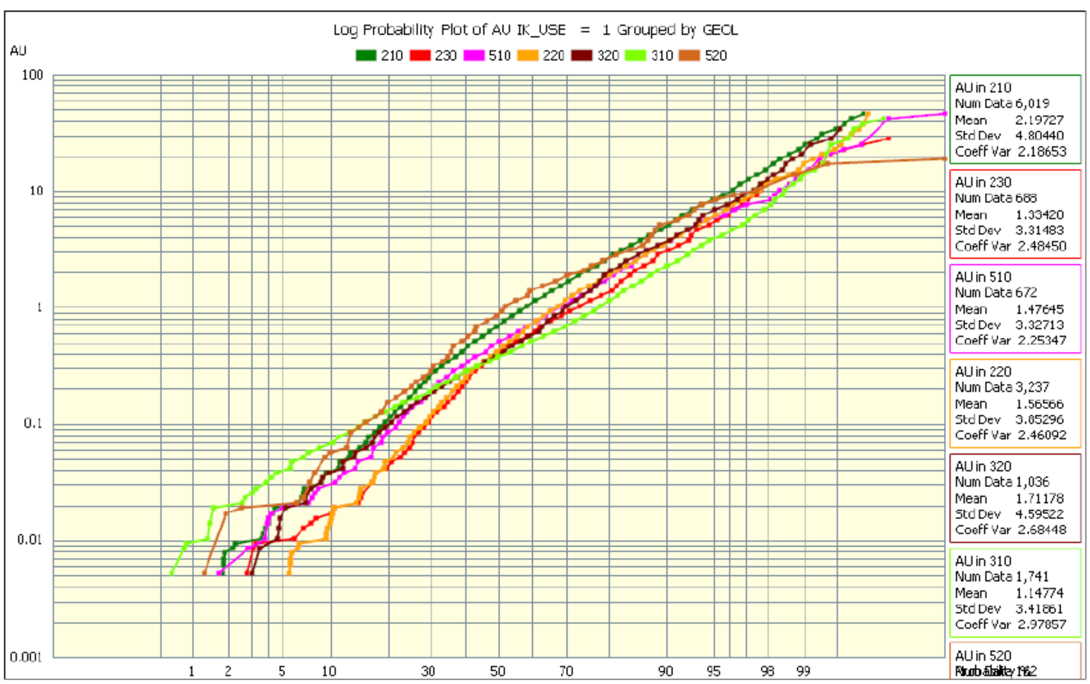


Figure 14-45 Nkran Log Probability Overlay plots of Uncut Au g/t within the Estimation Domains (ESTZON)

14.3.3.1 Density Assignment

The in-situ dry bulk density (BD) dataset consists of in-pit grab samples and drill core with specific gravity measurements determined using a water immersion method with the following formula:

$$Bulk\ Density = \frac{Weight\ in\ air}{Weight\ in\ air - Weight\ in\ water}$$

The mean densities for fresh sandstone, the dominant mineralization host rock, is in the region of 2.67 to 2.71, with low variance. An in-situ dry bulk density of 2.68 t/m^3 was selected for all fresh material and the Western sandstone. There are insufficient samples in the oxide and transitional domains to estimate a value with any confidence. Densities for transitional material were set at ~75% of the fresh material, 2.00 t/m^3, and oxide material set at ~65% of the fresh material, 1.72 t/m^3. Less than 1% of the remaining resource is transitional, so the accuracy of these in-situ dry bulk densities is not materially significant.

14.3.3.2 Composites

A 1 metre composite length is used in the 2020 estimate. Prior to compositing, data flagged as oxide and transitional were removed, since the area for the current Mineral Resource estimate update is all within fresh material.

One-metre composites were prepared respecting ESTZON domain boundaries with a minimum composite length of 0.5 m. All composites are used for the geostatistical analysis and the grade estimate. The potential bias impact of retaining the 108 short composites is considered minimal. The descriptive analysis for the ESTZON domains is shown in Table 14-21.

Table 14-21 Nkran Composite Statistics per ESTZON

ESTZON	No. of Samples	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	Variance	Coefficient of Variation
210	6,187	0.01	40	2.15	20.10	2.09
220	3,299	0.01	40	1.57	12.58	2.25
230	713	0.01	18	1.25	6.50	2.04
310	1,812	0.01	40	1.12	9.76	2.79
320	1,053	0.01	30	1.60	13.40	2.29
510	741	0.01	25	1.61	7.70	1.72

14.3.3.3 Gold Grade Capping/Outlier Restrictions

Cutting strategy was applied based on the following:

- Skewness of the data
- Probability plots
- Spatial position of extreme grades

Histograms and probability plots were reviewed for Au g/t within each individual estimation domain to determine the top-cut. Composites greater than the top-cut values were reset to the respective top-cut values. The number of values cut was minimal compared to the total domain population, and cutting these values generally had little impact on the mean grade of the domains. The uncut and top-cut statistics, including the impact on metal cut and number of samples cut, per estimation domain, are shown in Table 14-22.

Table 14-22 Nkran Top-cut Statistics per ESTZON

ESTZON	Total	Top Cut	#Cut	Uncut Mean	Cut Mean	% Metal Cut	Uncut CV	Cut CV
210	6,187	40	24	2.37	2.15	-9%	3.56	2.09
220	3,299	40	9	1.74	1.57	-9%	3.88	2.25
230	713	18	5	1.44	1.25	-13%	3.86	2.04
310	1,812	40	5	1.17	1.12	-4%	3.41	2.79
320	1,053	30	6	1.84	1.68	-9%	3.49	2.29
510	741	25	1	1.63	1.61	-1%	1.82	1.72

Note: CV – coefficient of variation

14.3.3.4 Variography

Experimental variograms prepared using the 2020 exploration and grade control dataset were compared with variogram models prepared to support the 2018 Mineral Resource. The variogram models calculated in 2018 are retained for the 2020 estimation update.

In 2018, Au grade control variograms were modelled on 1.5 metre top-cut grade control composites, restricted to trial area used for the IK test work. Nuggets were obtained from the downhole variograms, where the lag was set equal to the composite length of 1.5 m. Directional experimental semi variograms were calculated in Gaussian space and modelled and then back transformed to raw space prior to using them in estimation or change of support calculations. Although nuggets and sills were normalized to one, they were scaled to the exploration sample variance prior to change of support calculations and estimation. Table 14-23 presents the variogram model parameters used in change of support calculations and estimation.

Table 14-23 Nkran Variogram Models for Au g/t

ESTZON	Rotation (ISATIS ZYX)	Nugget	Structure 1		Structure 2	
			Partial sill	Range	Partial sill	Range
210	50	8.03	8.39	15	1.43	100
	0			10		90
	-70			5		40
220	50	4.63	5.70	10	0.43	55
	0			10		50
	-80			8		35
230	60	3.14	3.00	10	1.17	85
	0			10		30
	-80			4.5		12
310	70	5.09	6.18	45	0.85	110
	0			40		80
	-80			10		30
320	50	5.28	6.75	10	0.25	50
	0			10		50
	-80			10		20
510	60	3.96	3.96	15	1.29	100
	0			15		80
	-80			10		20

14.3.4 Estimation/Interpolation Methods

14.3.4.1 Block Model

The block model is defined in Datamine using a 10 x 20 x 6 metre parent block size with a minimum 2.5 metre sub-cell size. The model is limited to below the 31 May 2017 as-mined surface. The model parameters, including cell dimensions and model extents, are shown in Table 14-24. The model was not rotated.

Blocks are flagged with GEOL, OXIDE, TOPO, MINED, IK_USE, and ESTZON domain codes. Density is assigned to each block based on oxidation domain.

Table 14-24 Nkran Block Model Dimensions

Axis	Origin (m)	Model Extent (m)	# Blocks	Maximum Cell Size (m)	Minimum Cell Size (m)
Easting (X)	610,500	2,500	250	10	2.5
Northing (Y)	699,600	2,400	120	20	2.5
Elevation (Z)	494	1,212	202	6	3

14.3.4.2 Grade Estimation

The Nkran Mineral Resource is estimated using post-processing of Ordinary Kriged (OK) large panel estimates to produce a recoverable Mineral Resource. This method provides Selective Mining Unit (SMU) scale block estimates that honour the theoretical grade-tonnage relationship determined from discrete Gaussian change of support. Uniform Conditioning (UC) results for the large OK panels are transferred to SMU blocks using Localized Uniform Conditioning (LUC). The quality of the results is dependent on the availability of drill hole data and the nature of the spatial variance. The most material domains in terms of metal are 210 and 220; these domains are used and presented here to document the workflow.

14.3.4.3 Declustering

Declustering at Nkran was undertaken in two stages. For preliminary statistics and first pass estimation, a (20 x 40 x 12 metre) cell weighting strategy was used, which considers all samples when determining the average. Following first pass ordinary kriging, the Kriging weights were written out and the process was re-run. The process using Kriging declustering weights is what was used to generate the estimate.

14.3.4.4 Gaussian Anamorphosis Modelling

UC uses the Gaussian anamorphosis and Hermitian polynomial formalism to define the joint distributions of point, SMU, and panel scale estimates. Eighty Hermite polynomials were used on grade top-cut, declustered data (declustering weights derived through Ordinary Kriging).

The models for ESTZONs 210 and 220 are presented in Figure 14-46. The histograms for raw Au grades for these domains are presented in Figure 14-47 and Figure 14-48 alongside the Gaussian transformed values. The Gaussian transform has resulted in a mean of zero and a variance of one, as expected.

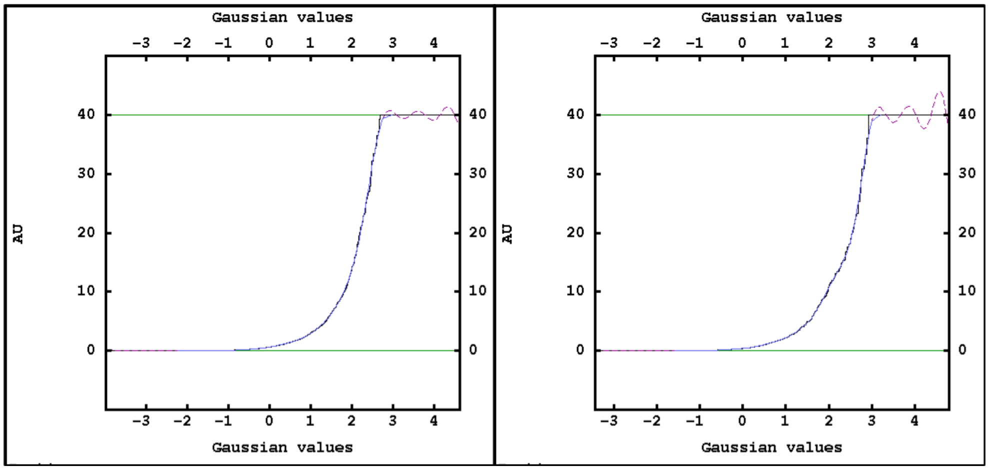


Figure 14-46 Nkran Gaussian Anamorphosis Models for ESTZON 210 (Left) and ESTZON 220 (Right)

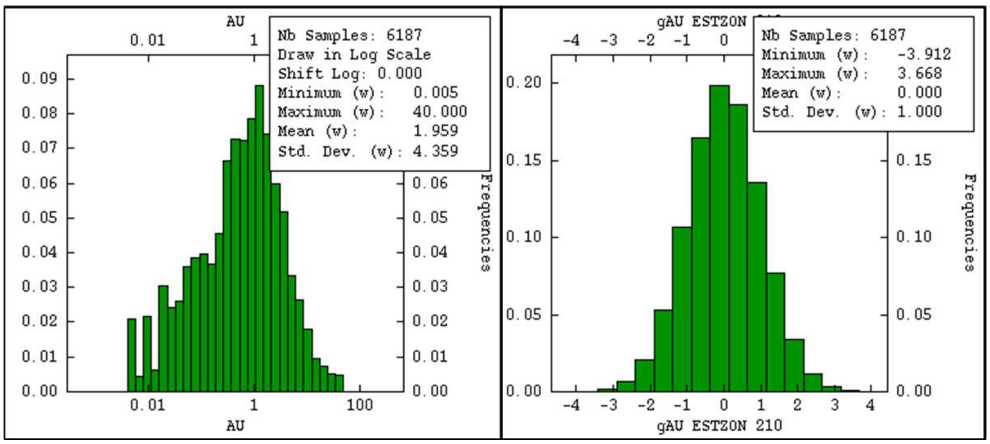


Figure 14-47 Nkran Histogram of Au (Left) and Gaussian Transformed Au (Right) for ESTZON 210

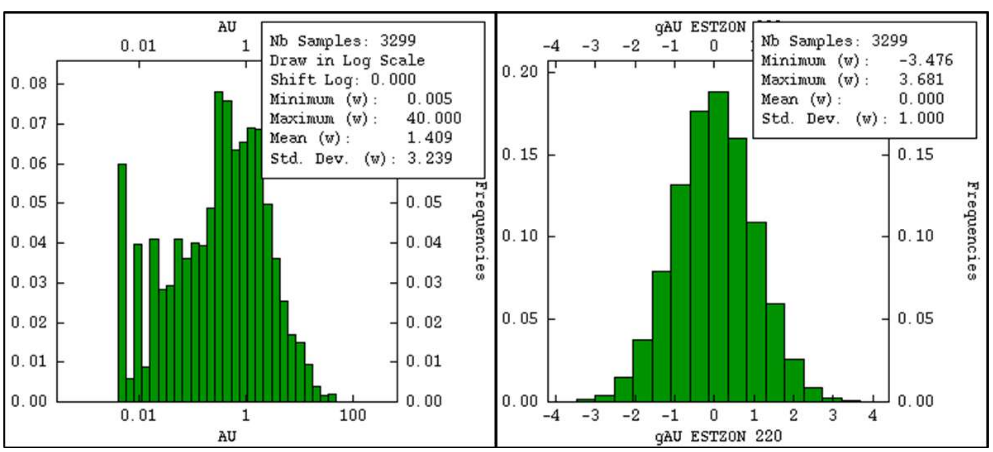


Figure 14-48 Nkran Histogram of Au (Left) and Gaussian Transformed Au (Right) for ESTZON 220

14.3.4.5 Ordinary Kriging

Estimation was by Ordinary Kriging into 10 x 20 x 6 metre panels and 5 x 5 x 3 metre SMUs using ISATIS. Search ellipsoid orientations were defined by dynamic anisotropy, derived from the interpreted structures and geological controls. The dip and dip direction of the major axis of anisotropy were calculated from each triangle of the defined fault wireframes (Freelander, County and Discovery). Sample search neighbourhoods were designed to be extremely large to ensure a smoothed panel estimate for use in conditioning the panel. For the ranking of SMUs, the minimum and maximum number of samples were decreased substantially.

14.3.4.6 Support Correction

Block and point anamorphosis modelling of the estimated values and sampled data were undertaken as the primary input of the Uniform Conditioning. The support definition for the block anamorphosis is based on the SMU size. Information effect was computed. Block support correction values for each of the ESTZON domains range from 0.67 to 0.84 and following application of 10 x 10 x 1 metre information effect 0.62 to 0.80, (Table 14-25).

Table 14-25 Nkran Change of Support Calculations

ESTZON	Real Block Support Correction (r)	Kriged Block Support Correction (s)
210	0.68	0.64
220	0.70	0.66
230	0.68	0.63
310	0.83	0.80
320	0.72	0.67
510	0.73	0.68

14.3.4.7 Uniform Conditioning

Estimation of recoverable resources was completed using Uniform Conditioning. The input for UC was the OK model at the panel scale and the output was an Au grade-tonnage curve for each panel at the SMU scale. For a discretized grade tonnage curve, 90 cut-offs were used and five iso-frequency classes. The dispersion variance estimated through Ordinary Kriging was used alongside the Kriged panel grade per domain.

14.3.4.8 Localized Uniform Conditioning (LUC)

The UC grade tonnage factors of the panel were proportioned based on the domain SMU in the panel to accurately represent Q (metal), T (tonnes) and M (grade) in the domain.

To provide a block model for use in mine planning, SMU sized blocks were Kriged, and the resultant SMUs were ranked from 1 to 64, with the actual grades being discarded and only the ranking remaining. Grades were then read off the panel grade-tonnage curve for each SMU and assigned based on the estimated ranking. The result is the assignment of single grades to SMU sized blocks so that the 64 SMUs in each panel achieve a grade-tonnage tabulation matching that of the panel estimated through UC.

To assess the performance of the LUC process, grade tonnage curves from LUC were compared to those derived from UC for the main domains. These were found to be very comparable.

14.3.5 Validation

14.3.5.1 Visual Validation

OK Panel Validation

The block model was visually reviewed section by section and in 3D to ensure that the grade tenor of the input data was reflected in the OK model panels. Generally, the estimate compares well with the input data. Example cross-sections for the two largest domains, ESTZON domains 210 and 220, are shown in Figure 14-49. The grades in the composites align with the corresponding grades in the block model.

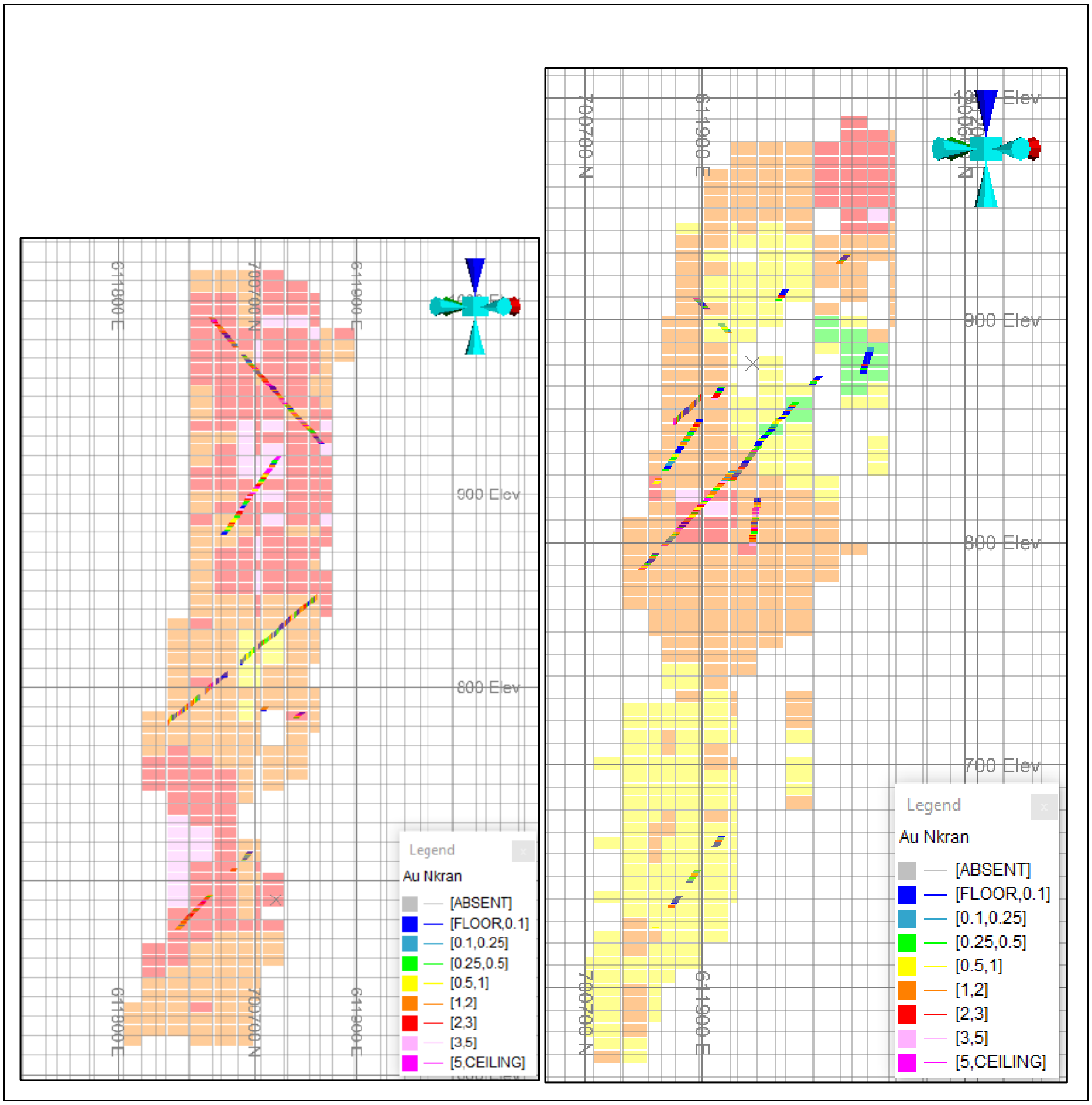


Figure 14-49 Nkran Cross-section View – OK Panel Model and Composites (ESTZON 210 on Left, ESTZON 220 on Right)

14.3.5.2 Statistical Validation

Declustering

A 25 x 25 x 25 metre cell-weighted declustering was used during the validation of the OK and LUC models. The statistical difference between the naïve and declustered composites against the OK block grades and the LUC block grades were assessed both globally and on individual domains and are reported in Table 14-26. Scatterplots showing UC panel grade vs OK panel grade for ESTZON domains 210 and 220, both at a zero cut-off, are shown in Figure 14-50. Globally, both the OK and LUC models validate well, showing 1% and 7% difference between the declustered composites and the block estimates, respectively. By estimation domain, the validation results are reasonable, considering that areas with over- or underestimation are generally coincident with poorer drill hole support.

Table 14-26 Nkran Statistical Validation of Estimation Domains

ESTZON		Count	Minimum	Maximum	Mean	CV
GLOBAL	Composites Naïve	13,805	0.005	40	1.75	2.22
	Composites Declustered	13,805	0.005	40	1.57	2.33
	OK Model	26,074	0.01	9.25	1.55	0.48
	LUC Model	282,855	0.013	20.16	1.68	0.96
	Difference [(Composite Declustered Grade – OK Grade)/OK Grade]				-1%	
	Difference [(Composite Declustered Grade – LUC Grade)/LUC Grade]				7%	
210	Composites Naïve	6,187	0.005	40	2.15	2.09
	Composites Declustered	6,187	0.005	40	1.88	2.25
	OK Model	12,451	0.47	9.25	1.89	0.45
	LUC Model	122,243	0.08	20.16	1.97	0.87
	Difference [(Composite Declustered Grade – OK Grade)/OK Grade]				1%	
	Difference [(Composite Declustered Grade – LUC Grade)/LUC Grade]				5%	
220	Composites Naïve	3,299	0.005	40	1.57	2.25
	Composites Declustered	3,299	0.005	40	1.42	2.38
	OK Model	6,184	0.39	4.52	1.53	0.41
	LUC Model	51,276	0.05	11.84	1.61	0.93
	Difference [(Composite Declustered Grade – OK Grade)/OK Grade]				8%	
	Difference [(Composite Declustered Grade – LUC Grade)/LUC Grade]				14%	
	LUC Model	14,557	0.11	9.18	1.69	0.81
	Difference [(Composite Declustered Grade – OK Grade)/OK Grade]				-2%	
	Difference [(Composite Declustered Grade – LUC Grade)/LUC Grade]				-2%	

Note: CV – coefficient of variation

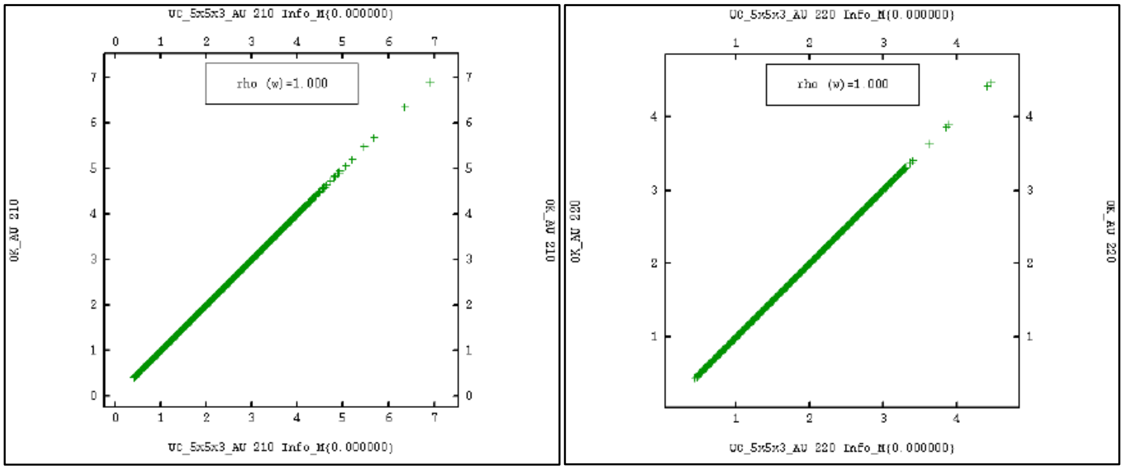


Figure 14-50 Nkran Scatterplots Showing UC Panel Grade (x-axis) versus OK Panel Grade (y-axis)

Swath Plots

Swath plots comparing the model block grades and input composites (declustered and top cut) in spatial increments of northing, easting, and elevation slices. Swath plots globally, as well as for ESTZON domains 210 and 220 are shown in Figure 14-51, Figure 14-52, and Figure 14-53. The plots show that the distribution of block grades honours the distribution of input composite grades. The degree of smoothing is appropriate and accounts for volume variance effects, where block grades should be smoother than point grades. The general trend of the composite grades is reflected in the block models.

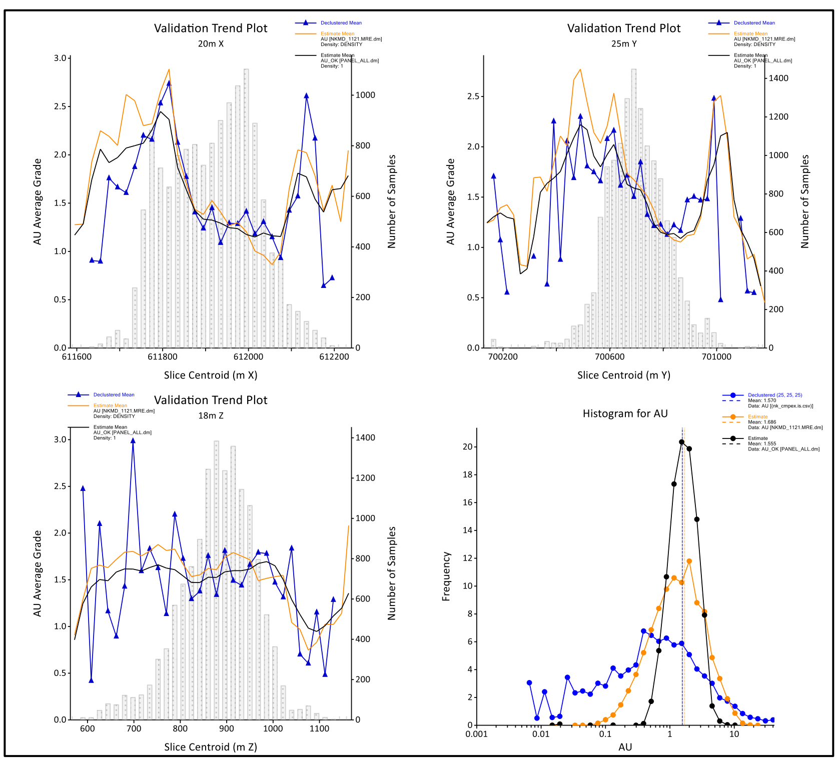


Figure 14-51 Nkran GLOBAL Swath Plots and Histogram

Note: OK Panel Model (Black); LUC Model (Orange); Declustered Composites (Blue)
Source: CSA Global, 2021

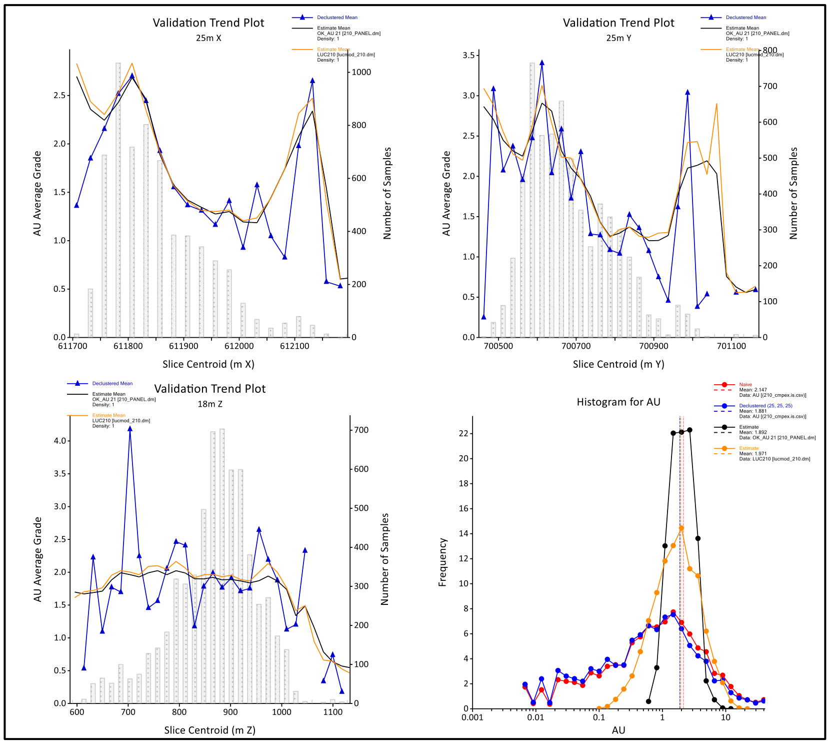


Figure 14-52 Nkran ESTZON 210 (Western Sandstone) Swath Plots and Histogram

Note: OK Panel Model (black); LUC Model (orange); Declustered Composites (blue)
Source: CSA Global, 2021

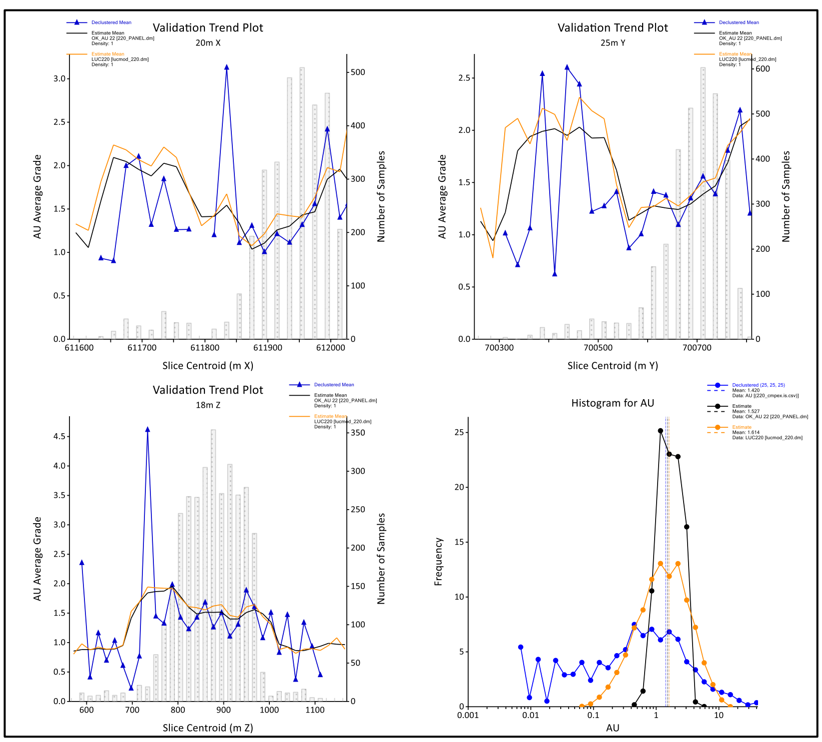


Figure 14-53 Nkran ESTZON 220 (Central Sandstone) Swath Plots and Histogram

Note: OK Panel model (black); LUC model (orange); Declustered composites (blue)
Source: CSA Global, 2021

LUC Validation

In addition to the statistical and visual validation steps outlined above, the LUC estimate was subject to some additional checks. These included:

- Comparing the mean grade of LUC grades within the panel with the mean grade of the panel
- Comparing the grade-tonnage curve of UC and LUC estimates (shown in Figure 14-54 and Figure 14-55 for ESTZONs 210 and 220, respectively).

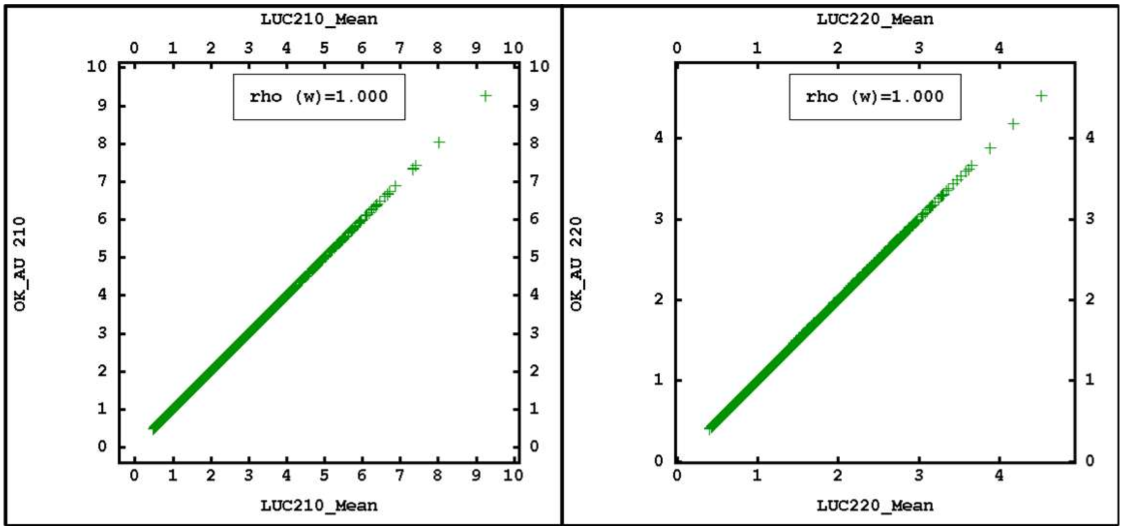


Figure 14-54 Nkran Scatterplots Showing Mean LUC Grade of SMUs (x-axis) versus UC Grade (y-axis) Both at a Zero Cut-off. ESTZON 210 (Left) and ESTZON 220 (Right).

Source: CSA Global, 2021

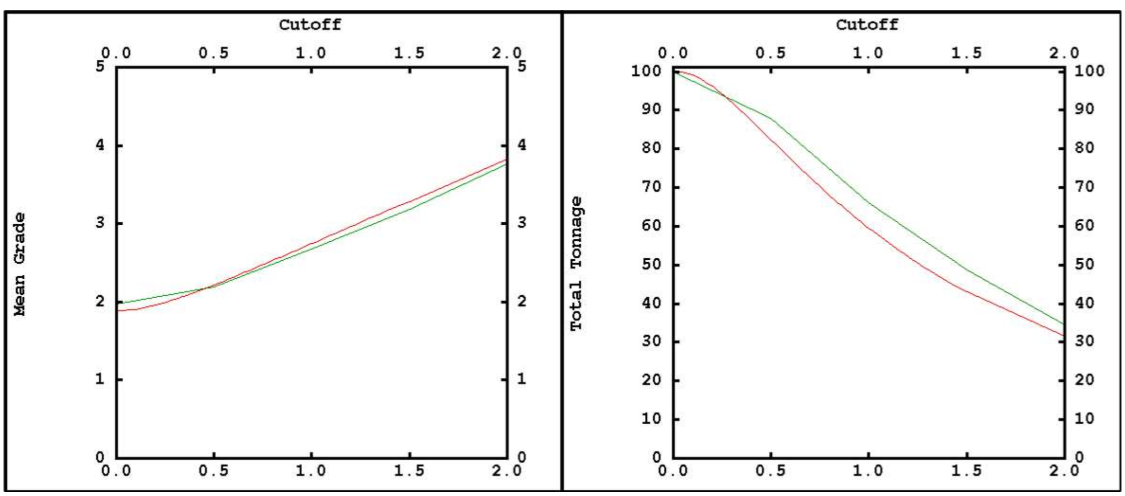


Figure 14-55 Nkran Grade (Left) and Tonnage Curves (Right) for ESTZON 210 with UC Model in Red and LUC in Green

Source: CSA Global, 2021

14.3.6 Classification of Mineral Resources

The Mineral Resource is classified as Indicated and Inferred based upon an assessment of geological understanding of the deposit, geological and mineralization continuity, drill hole spacing, quality control results, search and estimation parameters, and an analysis of available density information.

The Nkran deposit shows good continuity of mineralization within well-defined geological constraints, particularly within the Western Sandstone domain which is has the highest grade and dominant gold metal deportment. Drill holes are located at a nominal spacing of 25 x 25 metre sections extending out to 50 metres on the peripheries of the deposit. The drill spacing is sufficient to allow the geology (and associated mineralization) to be modelled into coherent wireframes for each domain. Reasonable consistency is evident in the orientations, thickness, and grades of the mineralized zone, as defined by Indicator Kriging.

Indicated Mineral Resources were informed by Slope statistics and average distance of samples and generally is defined where drilling is approximately 40 x 40 metre. The remaining material above a wireframe surface of the conceptual Whittle pit shell was classified as Inferred Mineral Resources. Figure 14-56 and Figure 14-57 show the final classified block model in plan view and 3D view.

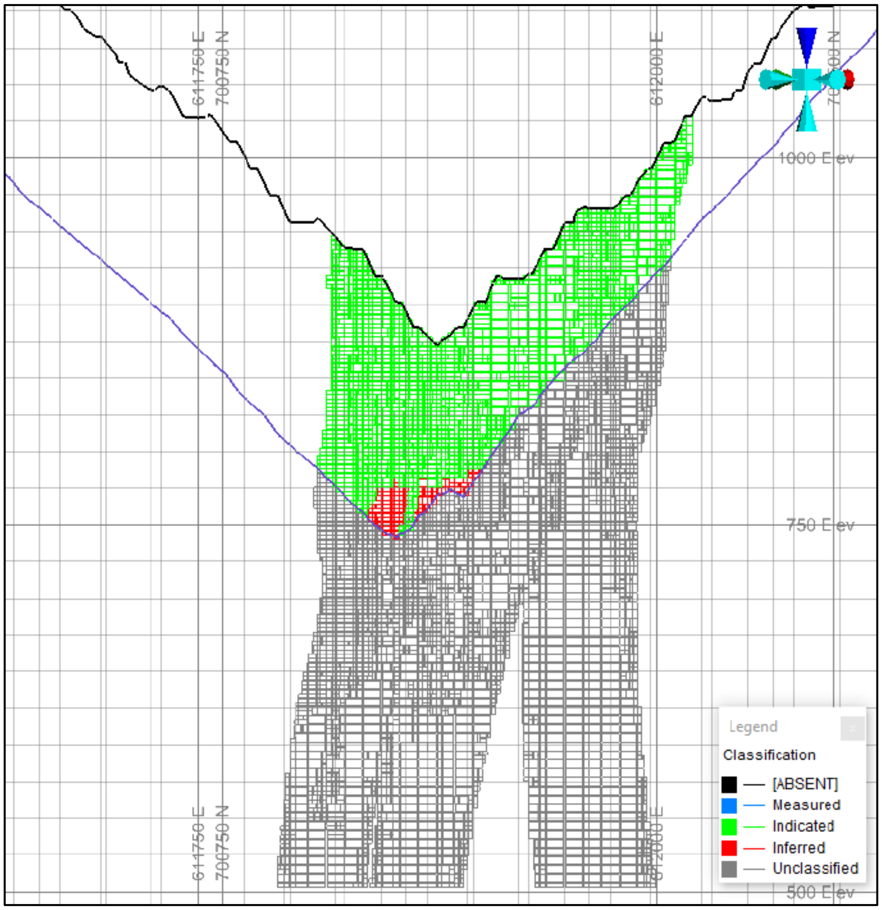


Figure 14-56 Nkran Cross-section View of Classified Grade Model, Constrained within Nominal US$1,600/oz Au Pit Shell (Blue Outline) Bounded by the June 2020 Mining Surface (Black Outline)

Source: CSA Global, 2021

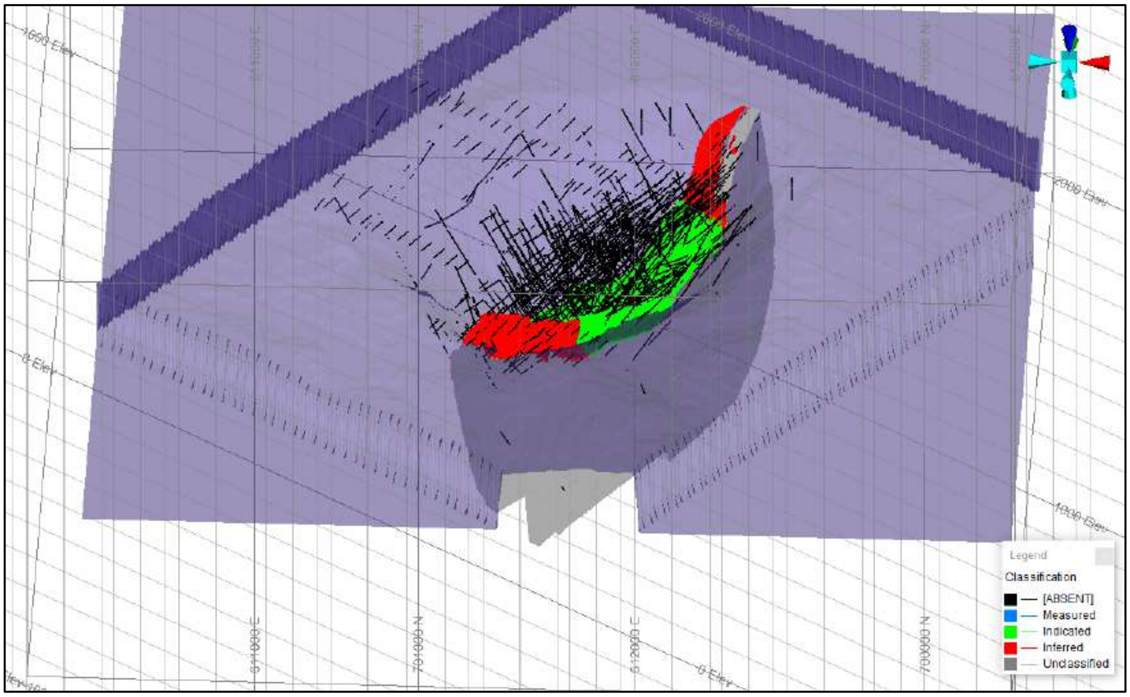


Figure 14-57 Nkran 3D View of Classified Grade Model, View Towards NW. Nominal US$1,600/oz Pit Shell Shown in Blue

14.3.7 Reasonable Prospect of Eventual Economic Extraction

The Nkran mineralization is assumed amenable to open pit mining, and milling and recovery through CIL gold processing, and was evaluated for reasonable prospects for eventual economic extraction by constraining the Mineral Resources within a conceptual pit shell optimized in NPV Scheduler™. The assumptions used in preparing the conceptual pit, include mining and processing costs, metallurgical recovery, metal price and general and administrative costs, and are shown in Table 14-27 and approximately correspond to the 0.50 g/t Au Mineral Resource cut-off. *See "Cautionary Note about Mineral Resources".*

Table 14-27 Nkran Conceptual Constraining Pit Parameters

Parameter	Value
Gold Price (US$/ounce)	1,600
Mining Cost (US$/tonne)	1.54 – 2.39
Mining Cost Incremental (US$/Vertical 6m)	0.0114 – 0.0197
Mill Feed Transport (US$/tonne)	0.84
Process Cost (US$/tonne)	8.79 – 11.32
Gold Recovery (%)	94%
General and Administration (US$/tonne)	6.55

14.3.8 Mineral Resource Statement

The Nkran Mineral Resource estimate is reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014. The Qualified Person is, Malcolm Titley, MAIG, MAusIMM who is a Principal Consultant of CSA Global. The effective date of the Mineral Resource estimate is February 28, 2022. The Mineral Resource estimate is reported assuming open pit mining and milling and CIL gold processing methods using a cut-off grade of 0.5 g/t Au, is constrained within a conceptual open pit prepared using NPV Scheduler™ software. The Mineral Resource estimates are summarized in Table 14-28.

Table 14-28 Nkran Mineral Resource Estimate at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

Category	Cutoff Grade (g/t Au)	Tonnes (kt)	Au (g/t)	Au Metal Contained (koz)
Measured	na	na	na	na
Indicated	0.5	12,119	2.09	814
Measured & Indicated	0.5	12,119	2.09	814
Inferred	0.5	1,335	2.23	96

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion as of February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software using several technical parameters including:*
    a. *$1,600/oz Au price*
    b. *$1.54/t to $2.39/t mining costs*
    c. *$0.84/t mill feed transport costs*
    d. *$8.79/t to $11.32/t processing costs*
    e. *94% Au recovery for all material*
    f. *$6.55/t G&A*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

The grade tonnage curve for all mineralization for the Nkran deposit is presented in Figure 14-58.

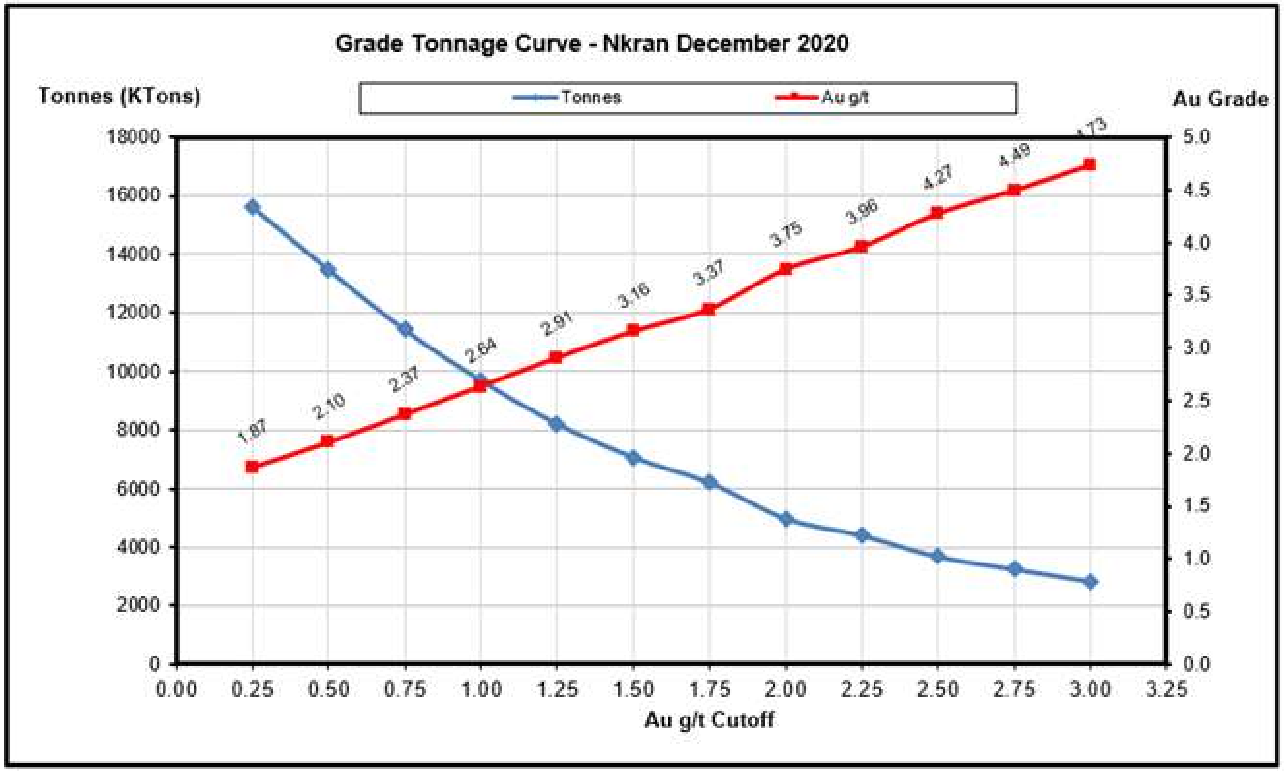


Figure 14-58 Nkran Grade-Tonnage Curve - All Mineralization

Source: CSA Global, 2021

14.3.9 Factors That May Affect the Mineral Resource Estimate

Other that what is discussed in other sections of this Report there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the Mineral Resource estimates. Other relevant factors that may materially affect the Mineral Resources, include mining, metallurgical, and infrastructure are well understood according to the assumptions presented in this Report.

The current Mineral Resource estimate carries moderate uncertainty and risk. The risk is principally related to the indicator mineralization interpretation. The geological wireframes, which act as bounding volumes within which mineralization is defined by Indicator Kriging, have been modelled to have a high degree of continuity along strike. If the continuity along strike is not as great as has been modelled, there is a risk of overstatement of metal.

The choice of Indicator Kriging to generate the mineralization volumes models is dependent on the relationship/comparability between the grade control and exploration data. In some areas there are very significant differences, which if persistent with depth, will result in significant variance between predicted and actual in the ground volumes. This has the largest impact of any of the risk factors on tonnage.

It was noted during the threshold selection in 2018 that the accuracy of the exploration data in prediction of grade and mineralization volume was low in some areas when compared to the GC dataset. Additional drilling in advance of mining will be required to reduce the risk.

It is important to note that the full depth and extent of the Nkran PFS Open Pit shell is significantly influenced by a zone of high grade gold mineralization (centred on 611,815E, 700,615N and 765 Elevation) which is considered high risk Indicated. The QP for the Nkran MRE believes it is critical to conduct an infill drilling program to de-risk this high grade zone, as any changes to the gold tenor and geometry of this high grade will have a significant impact on the economics of the proposed PFS Open Pit. A sensitivity study was completed by Galiano which demonstrated the extent of this risk by delivering different pit depths and extents.

14.4 Akwasiso Mineral Resource Estimate

The Akwasiso Mineral Resource was previously estimated and reported in 2019 by CSA Global as part of the 2020 Asanko Gold Mine NI 43-101 technical report. The Mineral Reserve, as defined by Akwasiso Cut 2 pit design based on 2019 Mineral Resource, was depleted in March 2021.

Mining at Akwasiso to 2021 demonstrated that the mineralization is still open in all directions and extends beyond the final depleted pit surface. Infill and step-out drilling program was subsequently designed and executed by Asanko Exploration team with the goal to update the geology and Mineral Resource model below the depleted pit surface. The 2021 drilling defined the boundary of the mineralization with adequate data density to define a Mineral Resource.

14.4.1 Database

The current drillhole database used to support the resource estimate now consists of 439 exploration drillholes totalling 46,232 meters and 3,320 grade control drillholes totalling 48,431 metres (Table 14-29). The cut-off date of drilling data is February 2, 2021, for exploration drillholes and December 5, 2020, for GC drillholes.

Table 14-29 Akwasiso Exploration and Grade Control Drill Holes Used In 2021 Modelling And Grade Estimation

Exploration Holes	DDH	RC	RCD	Total
Number of Holes	60	332	47	439
Metres Drilled	1,293	24,397	10,542	46,232
Grade Control Holes	**RC**			
Number of Holes	3,320			
Metres Drilled	48,431			

Since the resource model in 2019, an additional 30 exploration and infill holes were drilled by Asanko to upgrade the remaining Mineral Resources below Cut 2 pit design for evaluation of the economic viability of additional pushback. In addition, 178 exploration holes drilled by Resolute between 1996 and 2000 but not used in the 2019 Mineral Resource estimate were included in the current Mineral Resource drill hole database.

The exploration holes were drilled at approximate 20 to 40 metre spacing, with an average hole depth of 105 meters. GC holes were drilled at regular 10 x 5 metre spacing with an average hole depth of 15 meters. Figure 14-59 illustrates the overall coverage of the Exploration drilling.

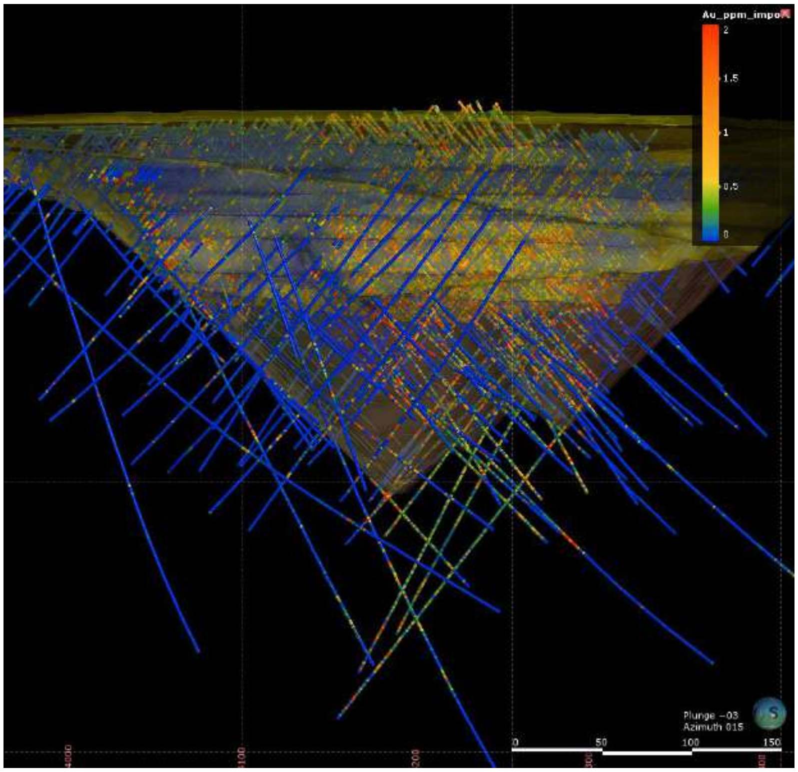


Figure 14-59 View of Akwasiso Exploration Drillholes

Note: 2020 November EOM Pit Topography; $1500 Pit Shell (Preliminary)

14.4.1.1 Verification of Exploration Data

Eric Chen, P.Geo., is the QP for the Akwasiso Mineral Resource estimate and has conducted data verification to assure the accuracy, completeness, and suitability of the exploration and grade control data for Mineral Resource estimation.

Extracted drillhole data were received from Asanko site in comma-delimited csv format. The QP worked closely with the site database and exploration team to conduct further data verification to ensure that data entries in all the drillhole tables were free of error and consistent before the data was accepted for resource estimation. The verification process is completed with assistance of various built-in tools in 3D geological modelling software programs or generic data processing program (such as Excel), and has included, but not limited to, checking and correcting duplicate records, drillhole interval overlap, drillhole depth mis-match, abnormal collar location, downhole surveys, erroneous assay values, etc.

Resolute drillholes were not included in 2019 resource estimation because the drill hole collar coordinates were in a mine grid different from the Asanko grid. The Asanko Mine Survey team subsequently established grid transformation parameters for 178 Resolute drillholes. The transformed Resolute drillholes were verified to have good comparison with topography and Asanko Exploration and GC drillhole intercepts of geology and mineralization. Statistical comparison with Asanko and Resolute assays within 5 metres of each other ("Twin-hole" analysis) shows a negative bias for Resolute assays relative to Asanko assays (Figure 14-60).

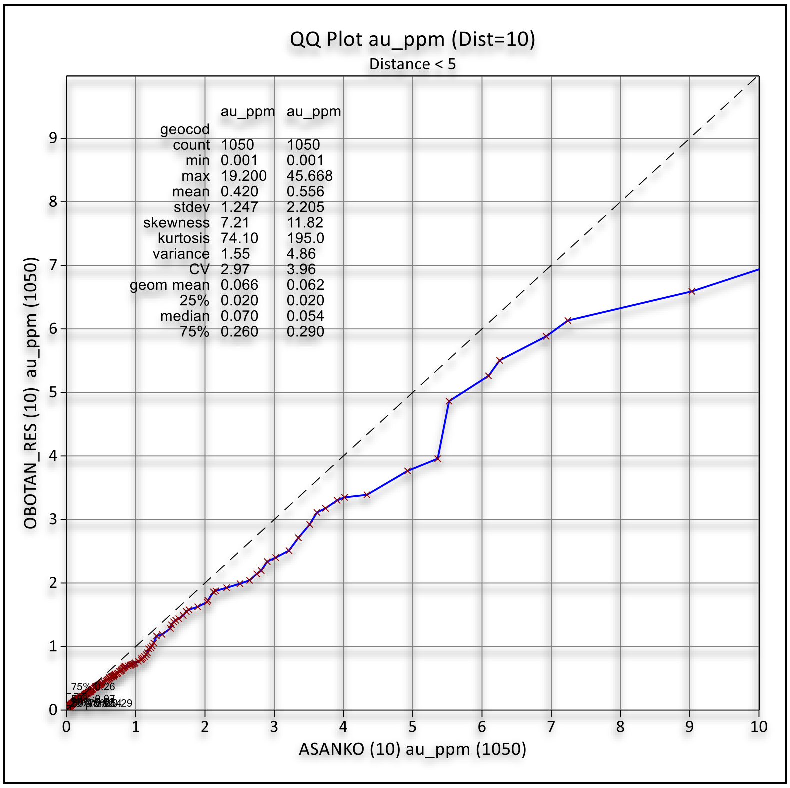


Figure 14-60 Akwasiso QQ Plots of Resolute and Asanko Drillhole Assays at < 5 m Distance

14.4.1.2 Verification of Grade Control Data

"Twin-hole" analysis was conducted by pairing Akwasiso GC and Exploration RC and DDH assays at <5 metres separation distance. Figure 14-61 shows grade distributions between GC and Exploration DDH assays are similar below 2.5 g/t Au. A global statistical discrepancy is indicated between GC and Exploration RC assays, but it was not conclusive which data is biased.

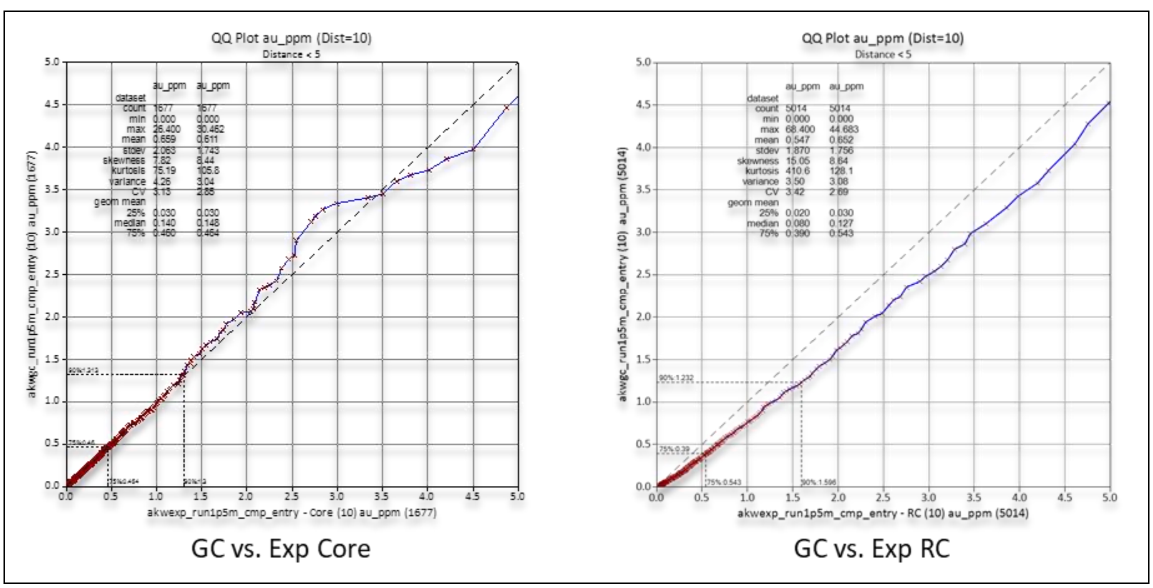


Figure 14-61 Akwasiso QQ Plots of GC and Asanko Exploration Drillhole 1.5 m Composites at < 5 m Distance

Field duplicate samples of the GC drillholes were also reviewed to assess the suitability of GC samples for resource estimation. Considerable variation of grades of duplicate sample pairs is observed, which indicates a possible precision issue in individual samples but when duplicates are grouped and statistically compared to original samples grouped in large volume, the two data set show identical statistical properties (Figure 14-62).

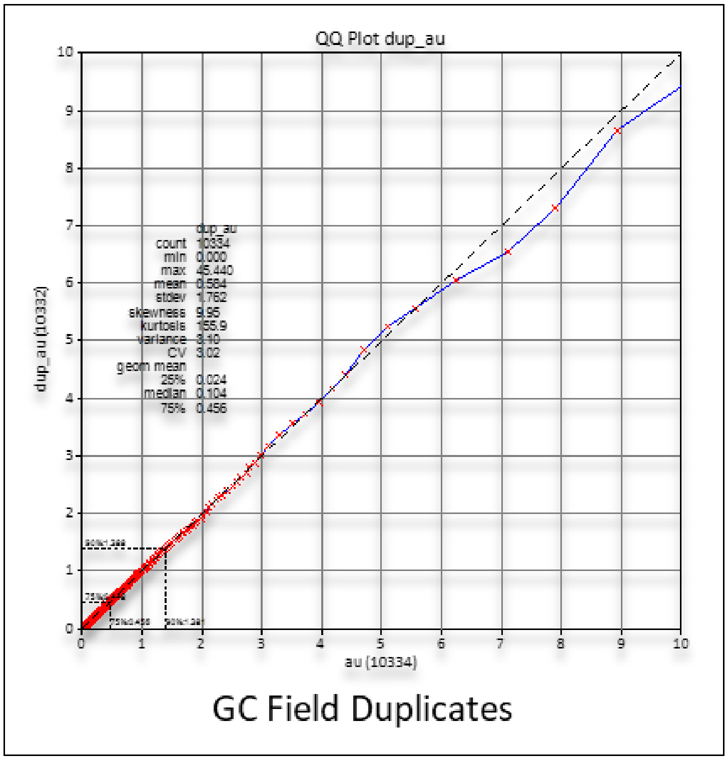


Figure 14-62 Akwasiso QQ Plots of GC Field Duplicate Assays vs. Original Assays

Mine lab QA/QC and performance was independently reviewed and verified by Dr. Dick Minnitt in November 2020. Duplicates, CRMs, and Blanks data supplied by the mine lab were analyzed and Dr. Minnitt concluded that there was no bias in the duplicates and overall accuracy was acceptable, consistently high standard of laboratory cleaning practice between assays, and CRMs behaved well in general. The QP has reviewed and accepted Dr. Minnitt's conclusion.

Some discrepancy was observed between Asanko and Resolute exploration assays and between Asanko GC and Exploration drillhole assays, with Resolute and GC assays on the slightly lower side. Although the cause of these discrepancies is not fully understood at time of this writing, the QP is of the opinion that using Resolute and GC data is of low risk to Akwasiso Mineral Resource and that incorporating them in the estimation and calibrating the resource model to grade control would result in slightly conservative estimate of the grade.

14.4.2 Geological Models

The geological model for Akwasiso was interpreted and modelled by Asanko exploration team based on the exploration drilling and was constructed using Leapfrog software and includes:

1. Lithology model
2. Oxidation model
3. Shear model
4. Mineralization model

14.4.2.1 Lithology, Oxidation and Shear/Fault Model

The various lithologies were interpreted directly from drillhole logging. A series of shear surfaces and two bounding shears were modelled and used as guides or constraints in modelling of the mineralization. Simple weathering surfaces were constructed from the exploration drillhole logging for the bases of complete oxidation and the top of fresh rock. The two surfaces divided weathering into three oxidation volumes: Oxide (strongly to moderately oxidized), Transitional (weakly oxidized) and Fresh (fresh rock) material types. The oxidation model represents different levels of weathering for material type categorization and density modelling purpose Lithology, shears, and weathering models are shown in Figure 14-63 and Figure 14-64 and are summarized in Table 14-30.

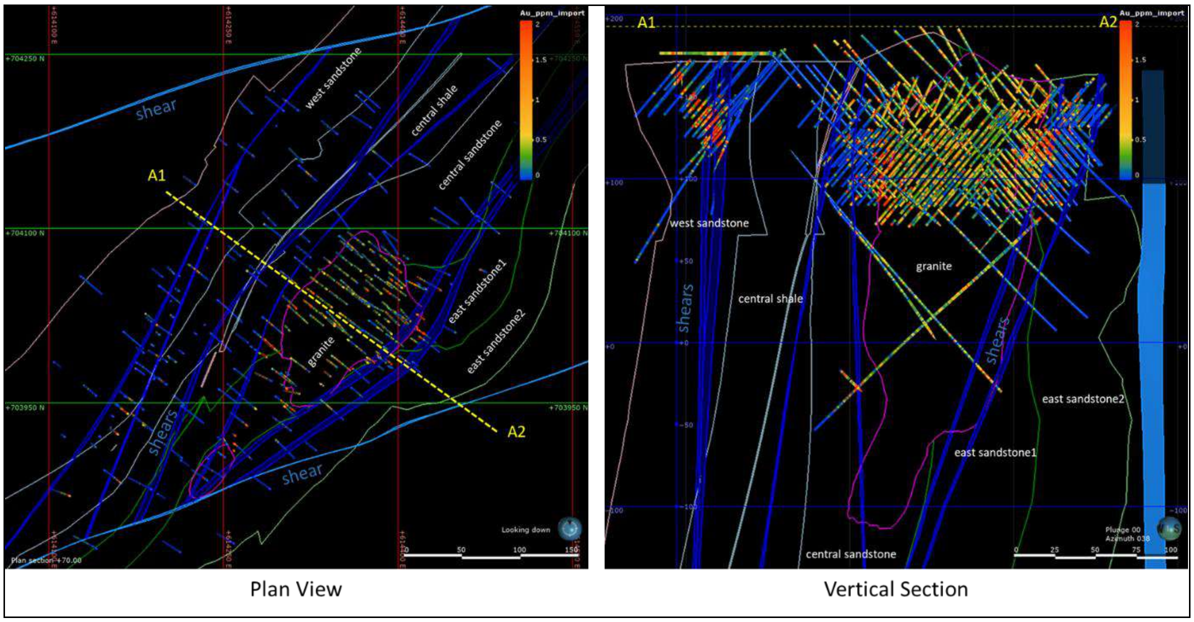


Figure 14-63 Plan and Sectional View of Akwasiso Lithology, Shear and Oxidation Model

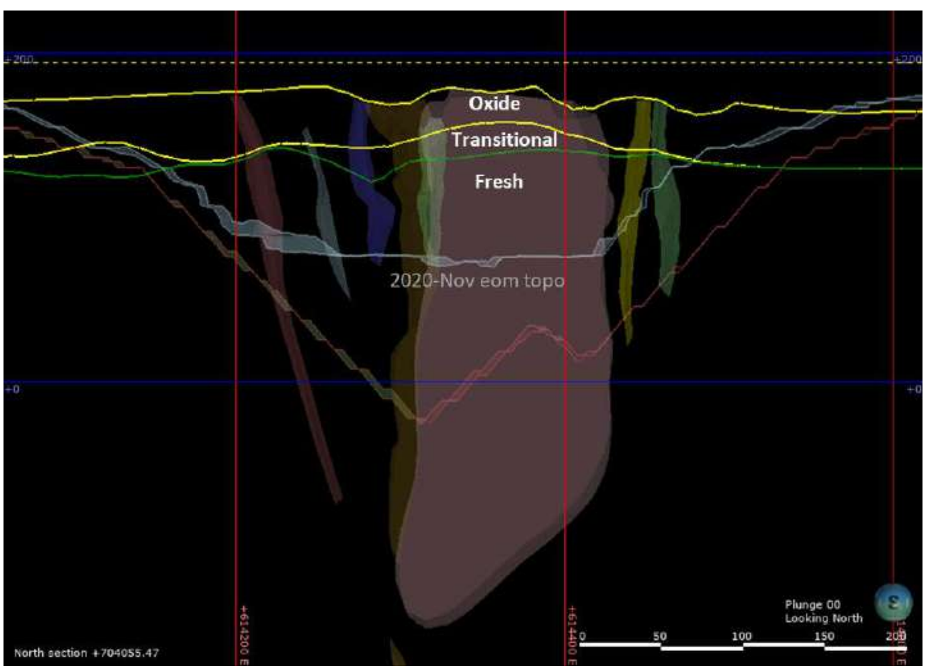


Figure 14-64 Sectional View of Akwasiso Oxidation Model

14.4.2.2 Mineralization Model

Movement indicators within the shear fabric indicate that the last deformational event is likely transpressional, with a sinistral sense of movement. This deformational event is believed to produce the structural fabric and pathways for Au mineralization, with the best mineralization occurring in the strain shadow zones of the "plug-like" granite body (B&S Geological, 2019).

Mineralization is associated with increased carbonate quartz veining, quartz flooding in the felsic porphyry, arsenopyrite, sericite, and chlorite alteration. Higher grade intersections occur at the margins of the sandstone with the granite. The other mineralized envelope is a stockwork of extension veins along a shear zone to the west occurring in a sandstone formation.

The 3D model of Mineralization is based on a geological framework of logged and modelled geology, constraining shear, and drillhole assays at a nominal 0.2~0.3 g/t threshold. The interpretation was conducted in both 2D and 3D, and the selection of drillhole intercepts may occasionally include materials lower than target grade threshold to honour the geological trend and maintain the continuity of the 3D shapes. GC drillholes were considered but the exploration drillhole took precedence when in conflict. Structural trends were used in 3D solid generation process in Leapfrog. The mineralization model comprises eleven individual domain wireframes, three of which, 100, 210 and 310, are the most significant in size and grade. The mineral domains are shown in Figure 14-65 and Figure 14-66.

All lithology, oxidation, and mineralization models are summarized in Table 14-30.

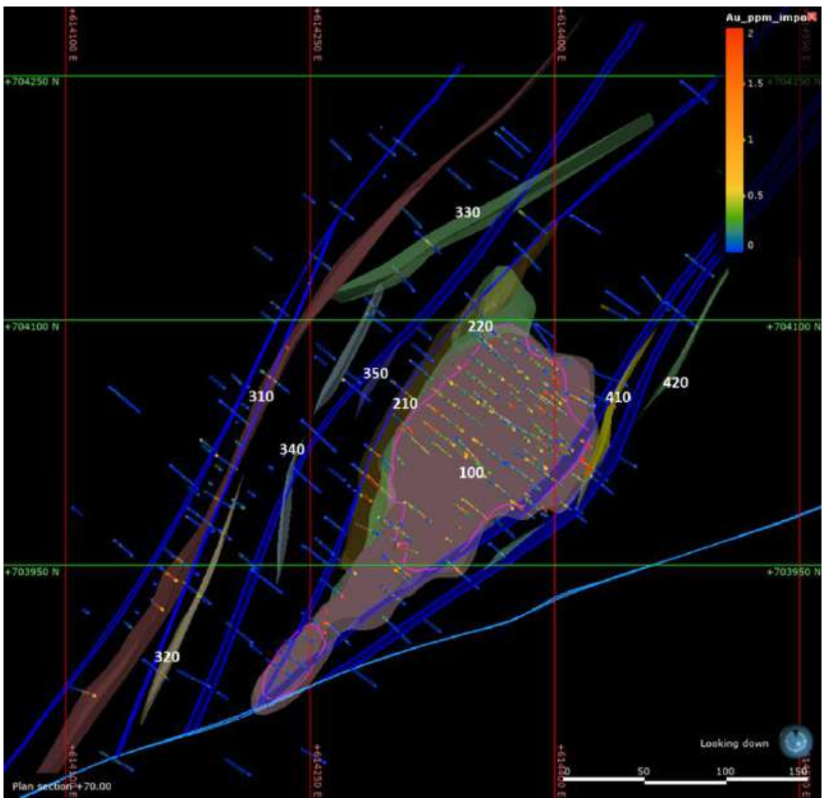


Figure 14-65 Plan and Sectional View of Akwasiso Mineralization Model

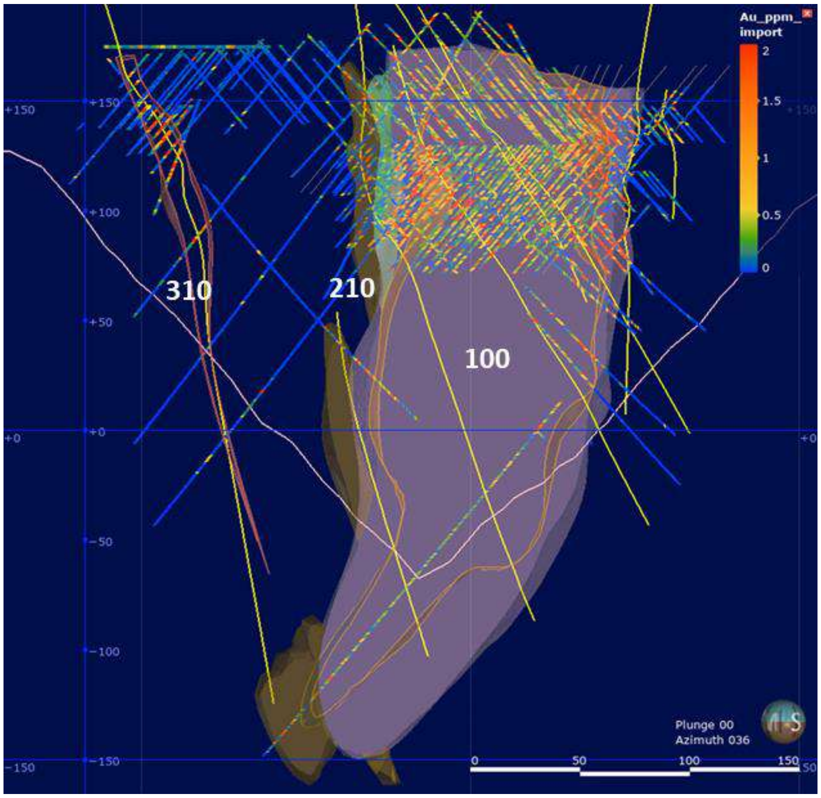


Figure 14-66 Sectional View of Akwasiso Mineralization Model

Table 14-30 List of Akwasiso Geological Models and Codes

Model Type	Model Name	Code	Original File Name	Effective Date
Lithology	Central Sandstone	22	Litho_Model_2020 - Central_SS1.dxf	2020-09-25
Lithology	Central Shale 3	31	Litho_Model_2020 - Central_Shale3.dxf	2020-09-25
Lithology	Eastern Sandstone 1	23	Litho_Model_2020 - Eastern_SS1.dxf	2020-09-25
Lithology	Eastern Sandstone 2	24	Litho_Model_2020 - East_SS2.dxf	2020-09-25
Lithology	Granite	11	Litho_Model_2020 - Granite.dxf	2020-09-25
Lithology	Skinny Granite	12	Litho_Model_2020 - Skinny_Granite.dxf	2020-09-25
Lithology	Western Sandstone	21	Litho_Model_2020 - Western_SS1.dxf	2020-09-25
Lithology	Background Sediments	90	materials outside litho model and under topo	2020-09-25
Oxidation	Fresh	4	FRESHtr.dm	2020-02-24
Oxidation	Transitional	3	TRANStr.dm	2020-02-24
Oxidation	Oxide	2	OXtr.dm	2020-02-24
Mineralization	West Domain 1	310	SIM_DOMs02_wss01.00t	2020-12-12
Mineralization	West Domain 2	320	SIM_DOMs02_wss02.00t	2020-12-12
Mineralization	West Domain 3	330	SIM_DOMs02_wss03a.00t	2020-12-12
Mineralization	West Domain 4	340	SIM_DOMs02_wss03b.00t	2020-12-12
Mineralization	West Domain 5	350	SIM_DOMs02_wss04.00t	2020-12-12
Mineralization	Granite Domain	100	SIM_DOMs_Sim_GR.00t	2020-12-15
Mineralization	Central Domain 1	210	SIM_DOMs_Sim_Sed01.00t	2020-12-15
Mineralization	Central Domain 2	220	SIM_DOMs_Sim_Sed02.00t	2020-12-15

Model Type	Model Name	Code	Original File Name	Effective Date
Mineralization	Background Seds Domain	900	SIM_DOMs_Sim_WST.00t	2020-12-15
Mineralization	East Domain 1	410	SIM_DOMs02_ess01.00t	2020-12-12
Mineralization	East Domain 2	420	SIM_DOMs02_ess02.00t	2020-12-12

14.4.3 Exploration Data Analysis

Drillhole samples are coded by lithology, oxidation, and mineralization models for statistical analysis. Exploratory data analysis was carried out for both individual and combined geological features. The mineralization model provides the best domain to distinguish different grade populations of the deposit (Figure 14-67).

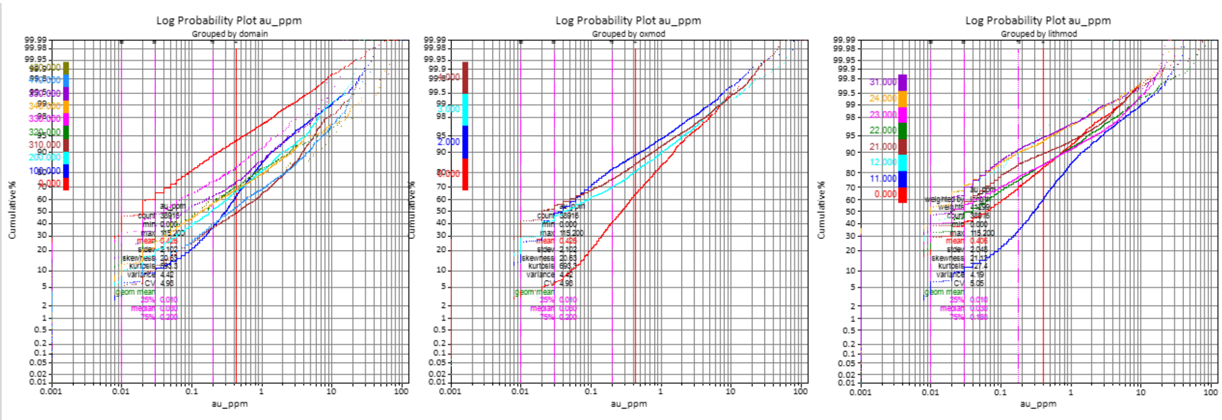


Figure 14-67 Log Probability Plot of Akwasiso Exploration Drill Hole Assays Au Grade by Mineralization, Oxidation, and Lithology

*Note: (*Code 0 in Domain plot represent samples outside the mineralization domains (Domain 900))*

14.4.3.1 Gold Grade Capping/Outlier Restrictions

Anomalous high grade Au assays are present in the drillhole samples, with maximum grade of 115.2 g/t in exploration drillholes.

High grade samples were treated in two steps. The first step was to top-cut all assays at 25g/t Au before compositing. The second step was to apply additional capping on composite grades at varied thresholds by mineralization domain in the estimation process. It was deemed necessary to top-cut the raw assays before compositing due to some high-grade samples of longer than average length.

The top-cut threshold grades are assessed by mineralization domains, with histogram and log probability graphs of the drillhole assays, consideration of effect on mean-variance, reasonable metal loss and the general grade behaviour at the nearby mined deposits (example in Figure 14-68). The comparison of sample statistics before and after top-cutting is presented in Table 14-31 for exploration assays and Table 14-32 for GC assays.

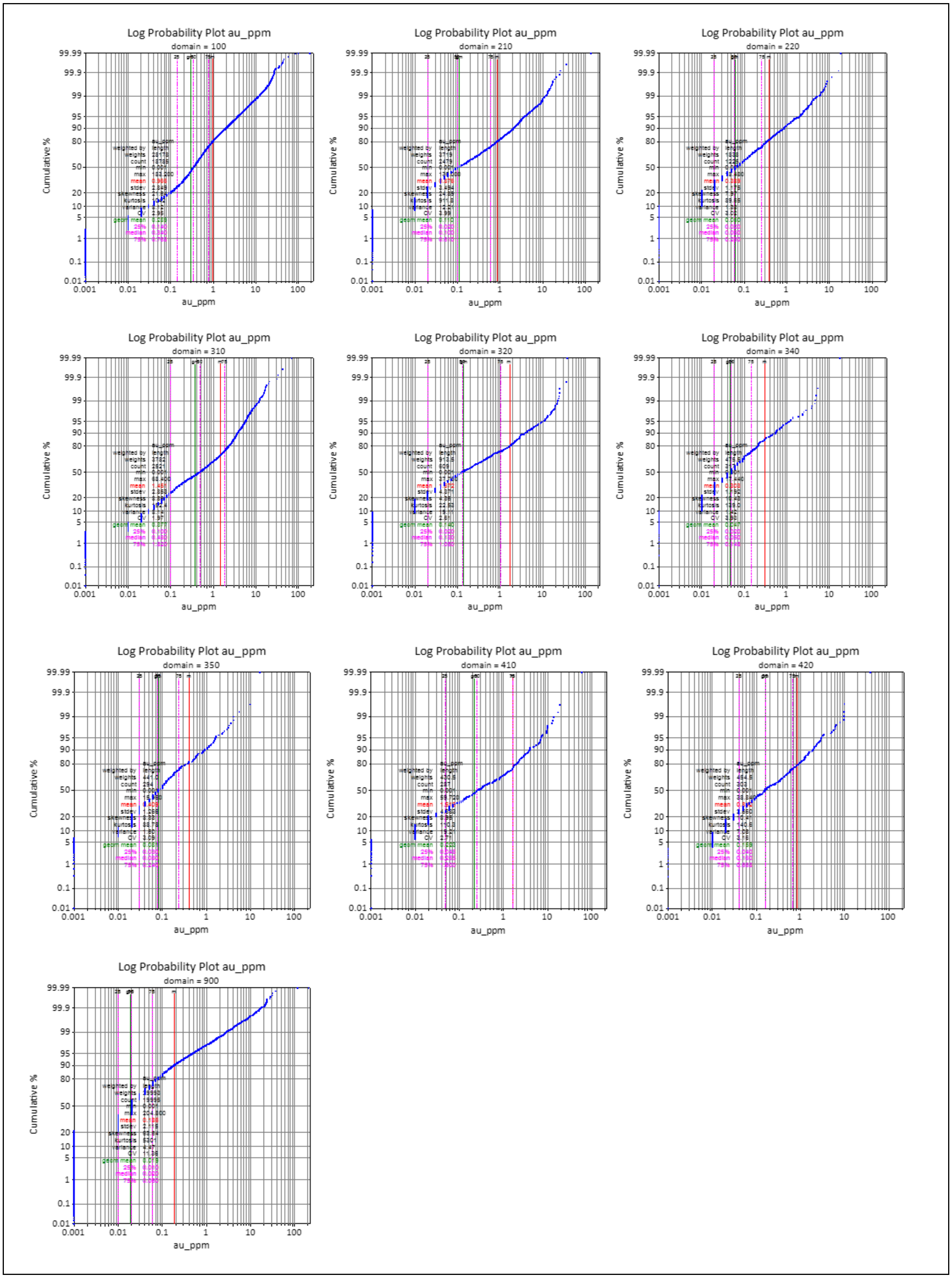


Figure 14-68 Assays Log Probability Plots of Exploration Drill Holes by Domain

Table 14-31 Akwasiso Summary Statistics of Mineralization Domain Raw and 25 g/t Au Top-Cut Assays of Exploration Drill Holes

		AU_PPM				AUCUT25	AUCUT25			
Domain	Count	Mean	CV	Max	Top-cut (g/t) Au	# Cut	Mean	CV	Max	Metal loss
100	10,283	0.86	3.1	115.2	25	16	0.83	2.53	25	-3%
210	1,536	1.49	3.63	93.08	25	14	1.28	2.72	25	-14%
220	620	0.2	3.55	11.3	25	0	0.2	3.55	11.3	0%
310	1340	1.72	2.45	75.45	25	4	1.6	1.71	25	-7%
320	119	2.43	2.15	37.76	25	1	2.32	1.98	25	-4%
330	89	0.6	1.51	4.39	25	0	0.6	1.51	4.39	0%
340	169	0.48	3.63	17	25	0	0.48	3.63	17	0%
350	261	0.68	3.8	38.31	25	1	0.63	3.13	25	-6%
410	80	2.33	2.07	24.88	25	0	2.33	2.07	24.88	0%
420	191	0.83	2.24	14.64	25	0	0.83	2.24	14.64	0%
900	23152	0.09	11.45	82.2	25	5	0.08	7.87	25	-7%

Note: AU_PPM – raw assays; AUCUT25 – top-cut assays

Table 14-32 Akwasiso Summary Statistics of Mineralization Domain Raw and 25 g/t Au Top-Cut Assays of Grade Control Drill Holes

		AU_PPM					AUCUT25			
Domain	Count	Mean	CV	Max	Top-cut (g/t) Au	# Cut	Mean	CV	Max	Metal loss
100	18,785	0.97	2.95	183.2	25	28	0.94	2.37	25	-2%
210	2,479	0.88	3.99	136	25	3	0.83	2.65	25	-6%
220	1225	0.39	3.02	18.48	25	0	0.39	3.02	18.48	0%
310	2521	1.45	1.97	68.4	25	4	1.42	1.7	25	-2%
320	609	1.67	2.61	37.76	25	3	1.63	2.51	25	-2%
330	0	0	-	-	25	0	0	-	-	-
340	317	0.3	3.93	17.44	25	0	0.3	3.93	17.44	0%
350	294	0.41	3.09	15.96	25	0	0.41	3.09	15.96	0%
410	287	1.62	2.71	59.72	25	1	1.5	2.04	25	-7%
420	303	0.84	3.15	38.84	25	1	0.8	2.58	25	-5%
900	19995	0.19	11.36	204.8	25	8	0.17	6.14	25	-10%

Note: AU_PPM – raw assays; AUCUT25 – top-cut assays

14.4.3.2 Composites

The dominant sample length is 1.0 metre for exploration drillhole samples and 1.5 meters for GC hole samples. There is no obvious trend of grade distribution by the length of the samples.

The exploration and GC drillhole samples are composited from collar to toe at 1.5 metre equal length intervals for uniform support. Residual of less than half of the composite length are added to the last full composite. Drillhole traces without sample or missing assays are ignored. The composites are coded by the mineralization domain wireframes (majority rule). Assays are top cut prior to compositing. Composite grade was calculated from top-cut assays (AUCUT25), and further capped by the varied thresholds by mineralization domain (Table 14-33). Composite capping thresholds were evaluated using the same method as used for assays capping (example in Figure 14-69).

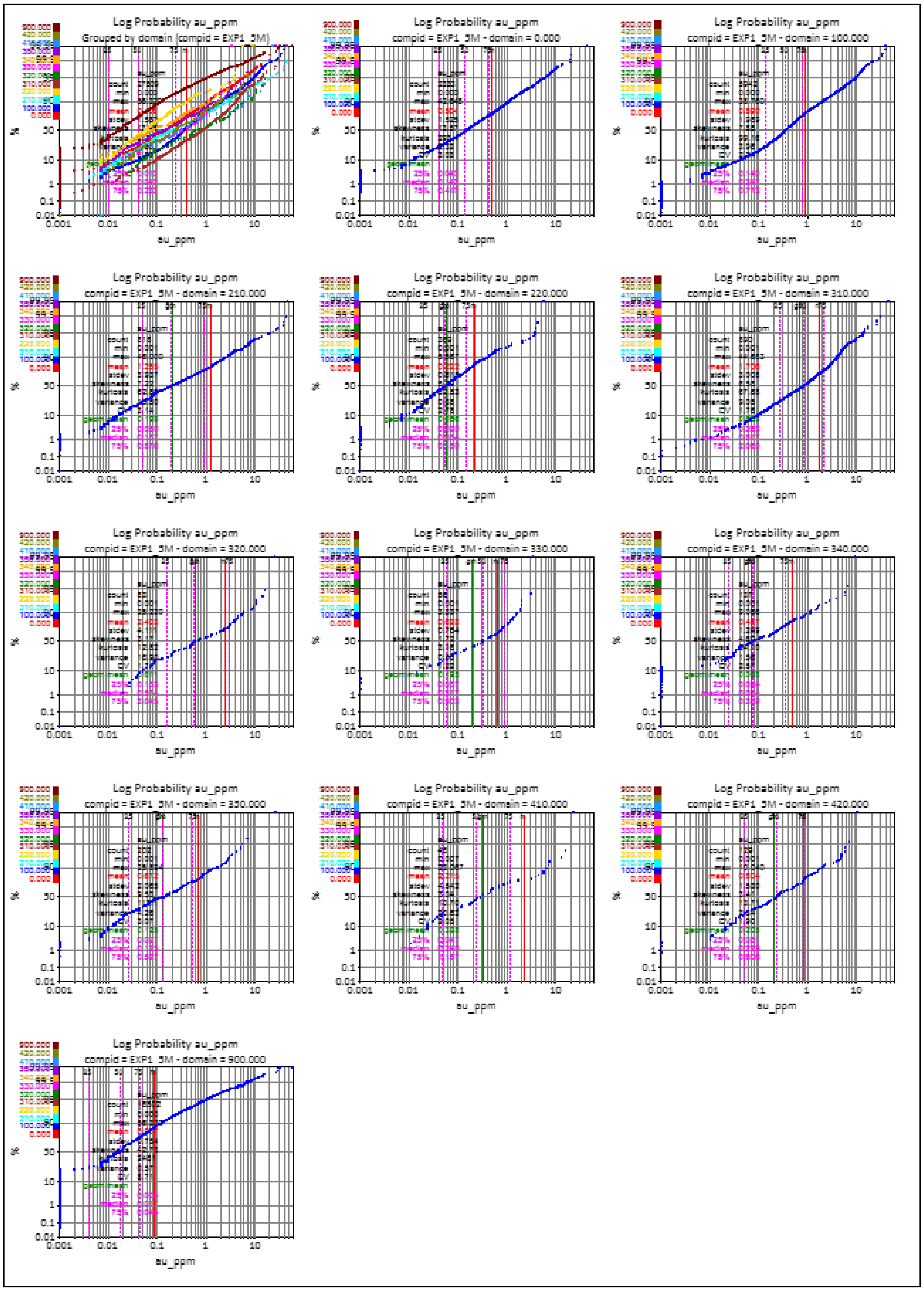


Figure 14-69 Log Probability Plot of Akwasiso Exploration Drill Hole 1.5 m Composite Au Grade by Mineralization Domain

Table 14-33 Akwasiso Composite Au Statistics of Exploration and GC Drillholes

	AUCAP EXP 1.5m Composite				AUCAP GC 1.5m Composite			
Domain	**Count**	**Mean**	**CV**	**Max**	**Count**	**Mean**	**CV**	**Max**
100	7,024	0.81	2.03	25	18,785	0.94	2.37	25
210	1,054	1.25	2.24	25	2,479	0.83	2.65	25
220	434	0.23	2.86	6.42	1,225	0.38	2.71	10
310	909	1.56	1.4	16.82	2,495	1.55	1.61	25
320	82	2.16	1.64	16.71	542	2.18	2.11	25
330	60	0.58	1.34	3.34	0	0	-	-
340	152	0.41	2.61	6.5	317	0.28	3.17	10
350	220	0.54	2.21	10	294	0.39	2.68	10
410	55	1.97	1.82	15	287	1.44	1.88	15
420	141	0.73	1.92	9.76	303	0.75	2.14	10
900	17,836	0.08	6.26	21.67	20,088	0.14	6.45	25

Note: (the "majority" rule of composite domain coding may result in the mean of small zones not consistent with raw assays)

14.4.3.3 Boundary Analysis

The boundary condition between the mineralization domains and between oxidation domains was assessed through visual inspections and contact graph analysis. The grades show sharp contact between the mineralization domain and the non-mineralized background. Between some mineralization domains that share common boundary, for example 100 – 210, the grade showed smoother transition within limited distance across the contact, while others showed abrupt change (Figure 14-70). The grades did not show distinct change across the oxidation boundaries (Figure 14-71).

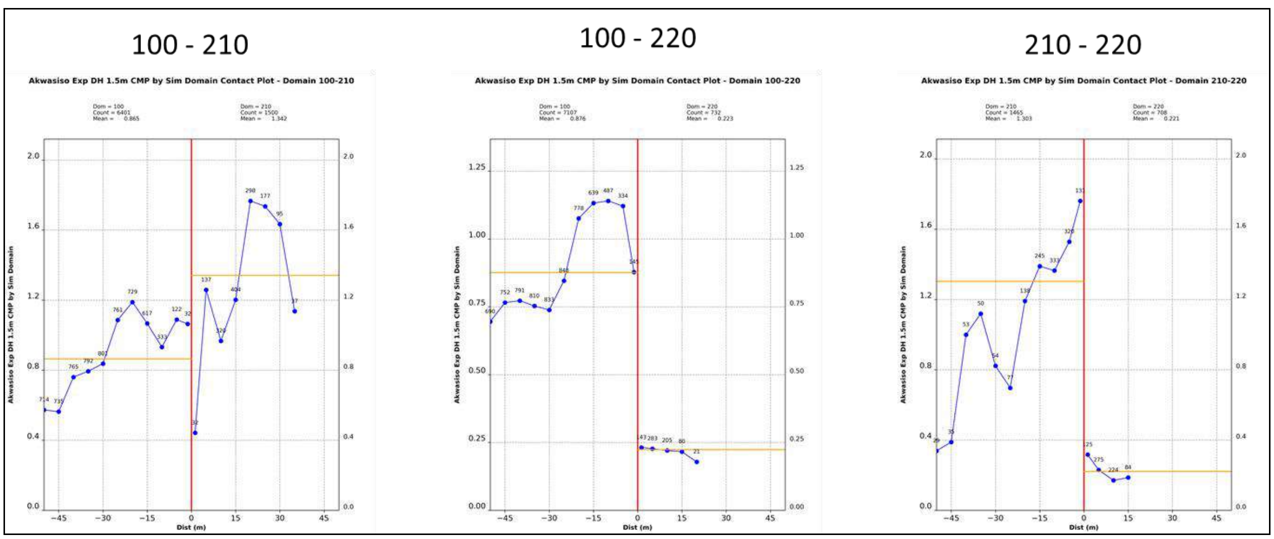


Figure 14-70 Akwasiso Contact Graphs of Drillhole Assays Between Main Mineralization Domains

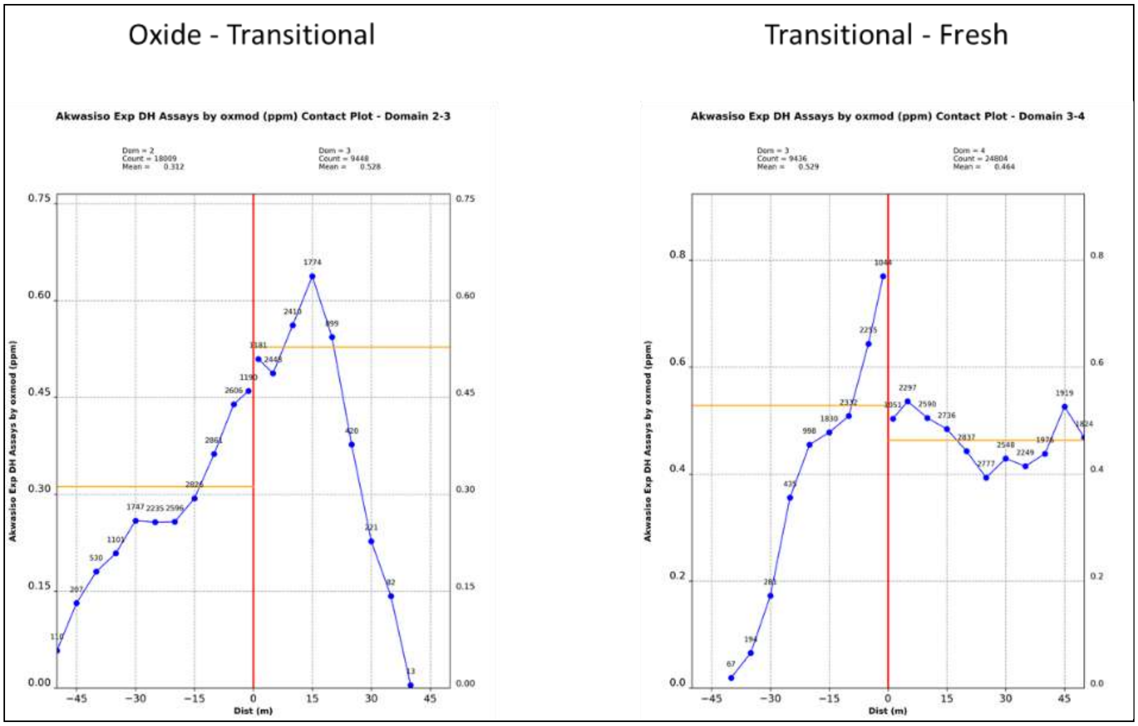


Figure 14-71 Akwasiso Contact Graphs of Drillhole Assays Between Oxidation Domains

14.4.3.4 Variography

Variography was modelled for the main mineralization domains with sufficient samples, including Domain 100, 210, and 310. Correlograms were calculated and modelled with a two-structure exponential/spherical model in Vulcan software. The 1.5 composites of combined exploration and GC drillholes were used for variogram modelling. Robust variogram (correlogram) models were obtained for respective domains that matches well with the observed geology and trends of mineralization (Figure 14-72). The variogram parameters obtained from the three domains were used for other smaller domains with rotation angles adjusted to fit the respective domain (Table 14-34)

Table 14-34 Akwasiso Domain 100, 210, 310 Composite Au Variogram (Correlogram) Parameters

Domain	Type	Sill	Rotation Angles (Vulcan)			Ranges (m)		
			Azimuth	Plunge	Dip	Major	Semi	Minor
100	Nugget	0.4	-	-	-	-	-	-
	Exponential	0.576	169.107	48.59	41	12	15	8
	Spherical	0.024	169.107	48.59	41	81	65	15
210*	Nugget	0.4	-	-	-	-	-	-
	Exponential	0.282	30	0	-60	10.277	21.473	5
	Spherical	0.318	30	0	-60	25	10.658	5
310**	Nugget	0.3	-	-	-	-	-	-
	Exponential	0.491	30	0	-75	10	22	3
	Spherical	0.209	30	0	-75	32	4	3

*Note: * used for domain 220; ** used for 320, 330, 340, 350, 410, 420 (rotation angles adjusted to fit)*

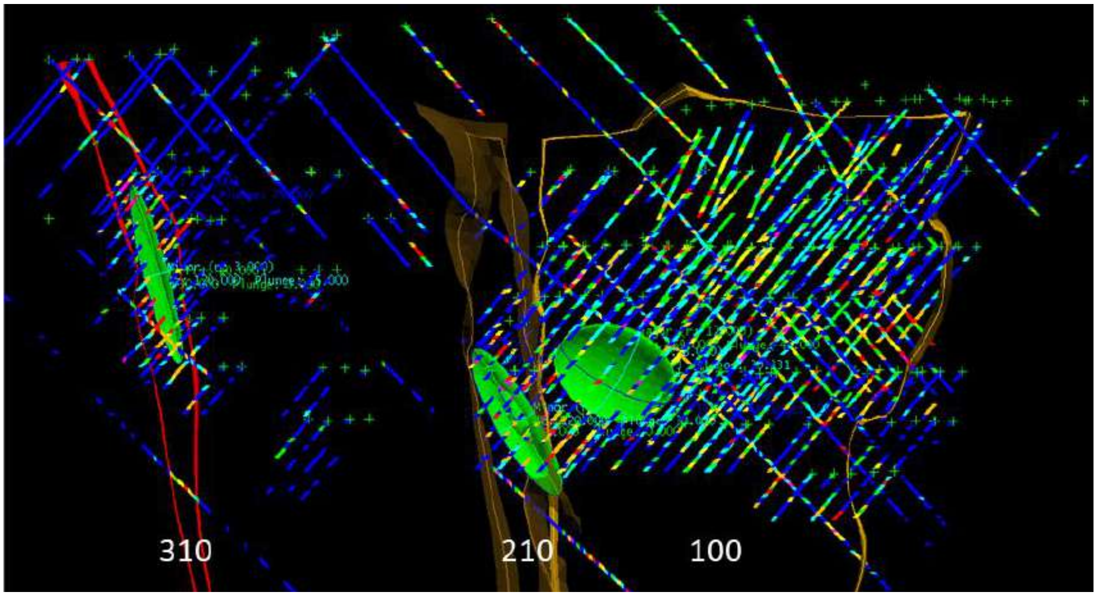


Figure 14-72 3D Visualization of Variogram Ellipses for Akwasiso Domain 100, 210, 310

14.4.4 Estimation/Interpolation Methods

14.4.4.1 Block Model Setup

A block model was constructed in Vulcan software. The model covers the full extent of geology and mineralization models and provides adequate extent to allow pit optimization process. The block size of 5 x 5 x 6 metres was selected. The block size in Z direction was the mining bench height at Akwasiso. The block model setup dimensions are presented in Table 14-35.

Table 14-35 Akwasiso 2021 Resource Model Setup

	Origin	Minimum	Maximum	Extent (m)	Block Size (m)	# Blocks
Easting	613,820	613,820	614,660	840	5	168
Northing	703,700	703,700	704,420	720	5	144
Elevation	-146	-146	202	348	6	58

The block model was coded with the geological model wireframes by majority rule as shown in Figure 14-73.

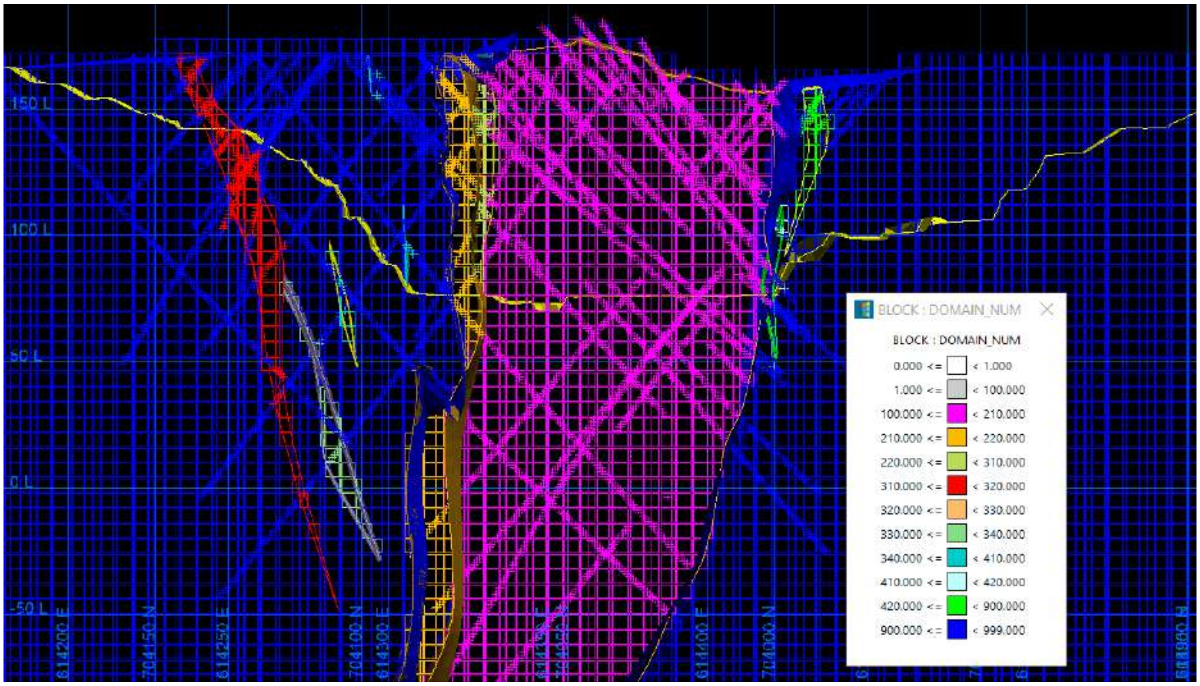


Figure 14-73 Akwasiso Block Assignment of Domain Codes

14.4.4.2 Estimation

Ordinary Kriging (OK) was used for grade estimation. An independent GC model of the same block size was first created using GC data only as reference model in the mined-out area. To ensure that the resource model will reproduce the grade distribution of the reference model, multiple scenarios of estimation parameters were tested to run estimation with exploration data only (EXP Model). The parameters that produced the closest tonnage-grade curve to GC model were selected. The GC composites were then merged with the exploration composites for the final resource estimation (MRE Model) using the selected parameters. The estimation plan is presented in Table 14-36 and illustrated in Figure 14-74. The vein lode type domains used dynamic anisotropic search orientations generated from digitized vein trend surfaces.

Table 14-36 Akwasiso Grade Estimation Parameters

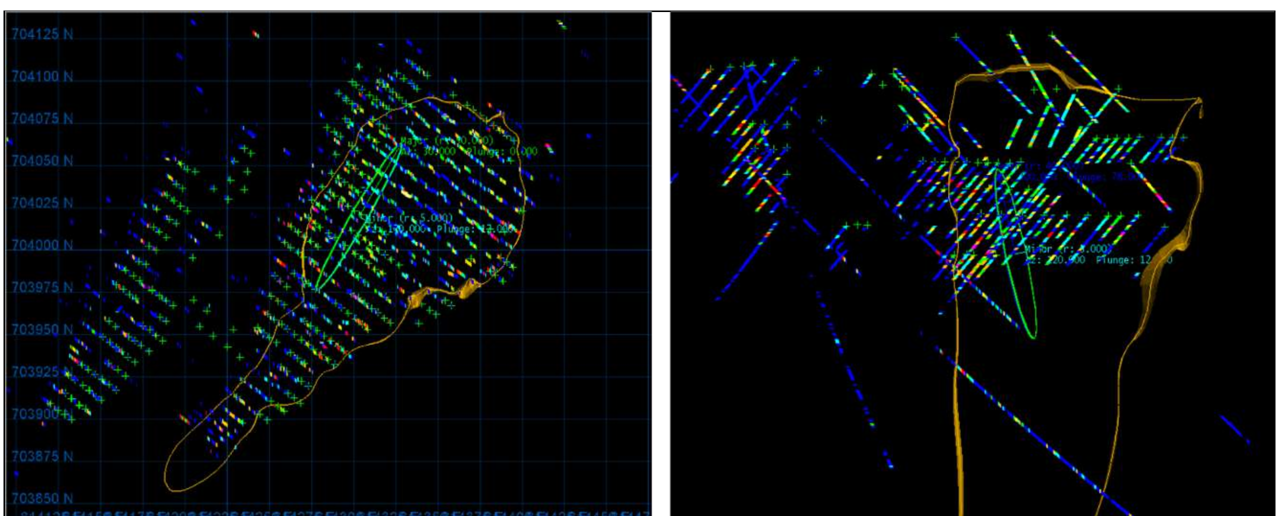
		# Composites				Drillholes			Search Radius (m)		
Model	Est. Pass	Min	Max	Max/Hole	Max per Oct	Min	Max	Type	Maj	Semi	Min
GC Model	GC pass	6	30	5	-	2	8	gc only	15	15	7.5
EXP Model (exploration comps only)	1 (exp)	4	14	4	6	1	5	exp only	50	40	5
	2 (exp)	4	10	4	5	1	4	exp only	75	75	10
MRE Model (exploration + GC comps)	1	4	20	4	6	2	8	exp + gc	12	12	5
	2	4	14	4	6	1	5	exp + gc	50	40	5
	3	4	10	4	5	1	4	exp + gc	75	75	10

** GC Model used dynamic anisotropic search*

			Search Ellipsoid (Vulcan)		
Domain	Boundary	Estimation Method	Bearing (Z)	Plunge (Y)	Dip (X)
100	Firm (210) *	OK	30	0	-78
210	Firm (100) *	OK	30	0	-78
220	Hard	OK	30	0	-78
310	Hard	OK	Dynamic Anisotropy		
320	Hard	OK	Dynamic Anisotropy		
330	Hard	OK	Dynamic Anisotropy		
340	Hard	OK	Dynamic Anisotropy		
350	Hard	OK	Dynamic Anisotropy		
410	Hard	OK	Dynamic Anisotropy		
420	Hard	OK	Dynamic Anisotropy		
900	Hard	ID2	30	0	-78

** Firm boundary allows sharing comps to max of 15m distance*

*** GC model allows sharing 100, 210, 220 comps to max of 15m distance*



Plan view of Domain 100 Search ellipsoid

Sectional view of Domain 100 Search ellipsoid

Figure 14-74 Illustration of Akwasiso Search Ellipsoid (Domain 100 example)

14.4.4.3 Bulk Density

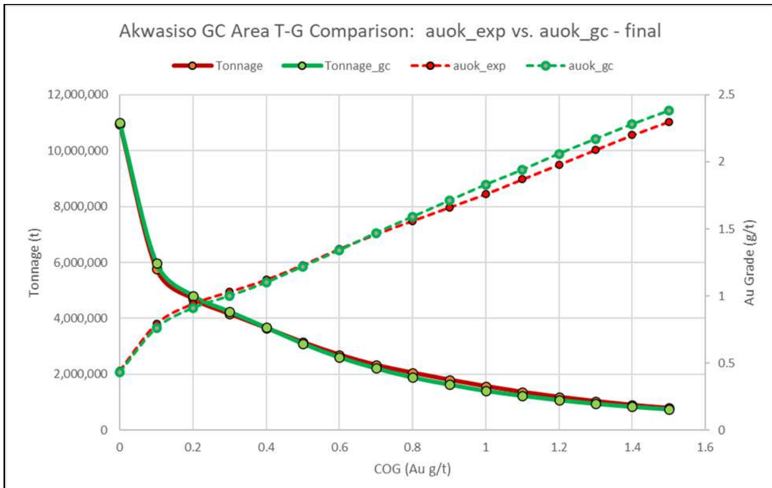
Bulk density was assigned to the block model based on a combination of lithology and oxidation. Density values were calculated from a small density data set of 48 measurements, only 12 of which are in oxide/transitional zones (Table 14-37).

Table 14-37 Akwasiso Bulk Density Values Assigned to Resource Block Model (by Material Type)

Material Type	Bulk Density (t/m³)
Oxide	1.7
Transitional	2.3
Fresh - Granite	2.7
Fresh - Sediments	2.7

14.4.5 Validation

The Akwasiso resource model was calibrated to reference model (GC Model) in the mined-out area. The tonnage-grade comparison of the exploration model (EXP Model) and GC Model is presented in Figure 14-75. The resource model was also validated through cross-checking with an independent conditional simulation model produced by Gold Fields in September 2020. The two models compared well in the common volume between the as-mined topo surface and $1600 resource pit shell (Table 14-38).



Cutoff	auok_ exp	Tonnage_ exp	auok_ gc	Tonnage_ gc	diff%_ grade	diff%_ tonnage
0	0.44	10,947,650	0.43	10,995,560	2%	0%
0.1	0.79	5,772,354	0.76	5,985,642	4%	-4%
0.2	0.94	4,697,875	0.91	4,811,360	3%	-2%
0.3	1.03	4,153,871	1.00	4,238,838	3%	-2%
0.4	1.12	3,651,141	1.1	3,668,888	2%	0%
0.5	1.23	3,138,136	1.22	3,094,157	1%	1%
0.6	1.35	2,690,475	1.34	2,600,933	1%	3%
0.7	1.46	2,321,950	1.47	2,209,903	-1%	5%
0.8	1.56	2,043,504	1.59	1,882,262	-2%	9%
0.9	1.66	1,791,830	1.71	1,630,886	-3%	10%
1	1.76	1,560,067	1.83	1,401,108	-4%	11%
1.1	1.87	1,353,709	1.94	1,227,067	-4%	10%
1.2	1.98	1,176,570	2.06	1,069,978	-4%	10%
1.3	2.09	1,024,936	2.17	939,588	-4%	9%
1.4	2.2	888,663	2.28	831,955	-4%	7%
1.5	2.3	779,163	2.38	741,767	-3%	5%

Note:
1. *Comparison within the volume between pre-mining topo and September 2020 eom topo*
2. *Compared only blocks with GC estimate(15m search)*

Figure 14-75 Akwasiso Tonnage-Grade Comparison of EXP Model and GC Model in Mined-out Area

Table 14-38 Comparison of Akwasiso Resource Model with Simulation Model (Between June 30 2021 Topography and $1600 Resource Pit Shell)

COG = 0.5	Indicated			Inferred		
	Tonnes	Au (g/t)	Ounces	Tonnes	Au (g/t)	Ounces
MRE Model	**2,249,113**	**1.33**	**95,956**	**170,842**	**1.44**	**7,931**
ConSim Model	1,997,748	1.50	96,472	297,061	1.56	14,928
COG = 0.8	Indicated			Inferred		
	Tonnes	Au (g/t)	Ounces	Tonnes	Au (g/t)	Ounces
MRE Model	**1,491,154**	**1.68**	**80,446**	**127,607**	**1.72**	**7,044**
ConSim Model	1,504,739	1.78	86,210	239,719	1.78	13,726

(ConSim Model: "ak_2008b_eng.dm" created by Gold Fields, September 2020)*

14.4.5.1 Swath Plots and Global Statistical Comparisons

Statistical comparison of the model and input data was also conducted to ensure global and local unbiasedness. Swath plots were created by comparing the model block grades and input in spatial increments in northing, easting, and elevation slices throughout the deposit Figure 14-76.

The plots show that block grades (Indicated) are smoother and follow the trend of input composite grades, which is the expected result of estimation, with block grades showing lower overall variance. The global mean of the model Au grade also compared well with composite Au grade.

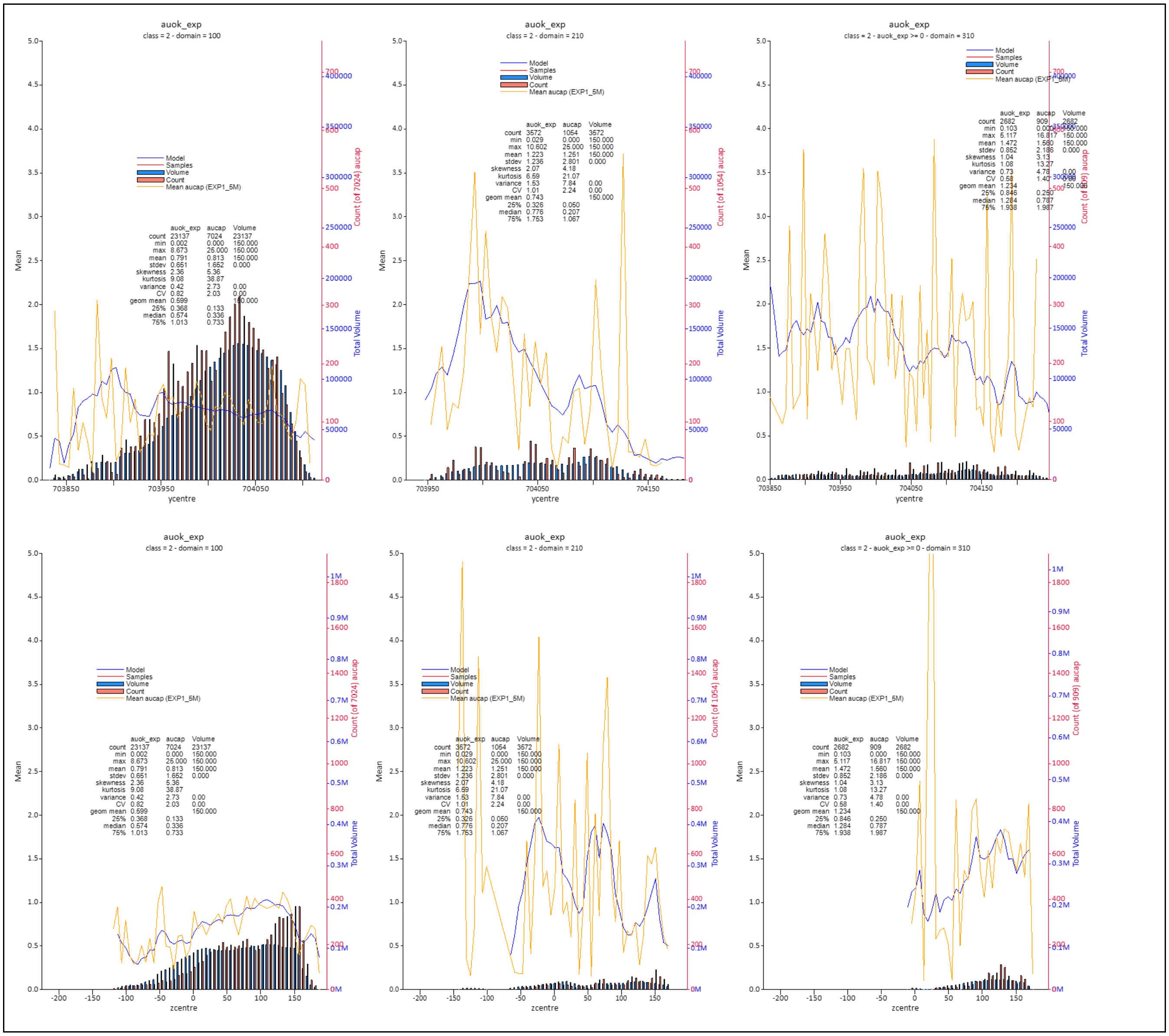


Figure 14-76 Akwasiso Swath Plot by Northing and Elevation for Block and Composite Au (g/t) of Main Domains

14.4.5.2 Visual Inspection

The block model was visually reviewed in 2D in sections and level plans, and in 3D to ensure the block estimates are supported by the surrounding composites. In general, the estimates compare well with the input data.

14.4.6 Classification of Mineral Resources

Akwasiso deposit shares the common geological features as other well studied deposits on the Nkran structural trend.

Drill spacing is the primary factor to define resource classification and only Indicated and Inferred resources are defined at Akwasiso. The spacing criteria at to separate the resource classes at Akwasiso are based on the variogram ranges and experiences of mining at adjacent Nkran deposit.

Nominal drill spacing is determined with a widely accepted mathematic approximation based on calculated average distance of the closest three drillholes to the block. The classification criteria are summarized in Table 14-39.

Table 14-39 Akwasiso 2021 Resource Classification Criteria

Classification Category	Drill Spacing (m)	3-Hole Average Distance (m)
Measured (1)	No Measured classification defined	-
Indicated (2)	40 x 40 (m) drill spacing	<= 28
Inferred (3)	80 x 80 (metre) drill spacing, or nearest DH < 40 metre distance	<= 56

Drilling coverage at Akwasiso was relatively high. Although a block can be classified as Indicated if drillhole spacing was equal or closer than 40 metres, 50% of the Indicated materials were covered by 20 metre or closer drillhole spacing (Table 14-40). Block classification is shown in Figure 14-77.

Table 14-40 Akwasiso 2021 Resource Drillhole Coverage Summary

Class	Spacing	Tonnes	Au Oz
Indicated	<20 metre spacing	48%	50%
	20 - 30 metre spacing	38%	36%
	30 - 40 metre spacing	14%	14%
Inferred	>60 metre spacing	6%	9%
	30 - 40 metre spacing	4%	3%
	40 - 60 metre spacing	90%	88%

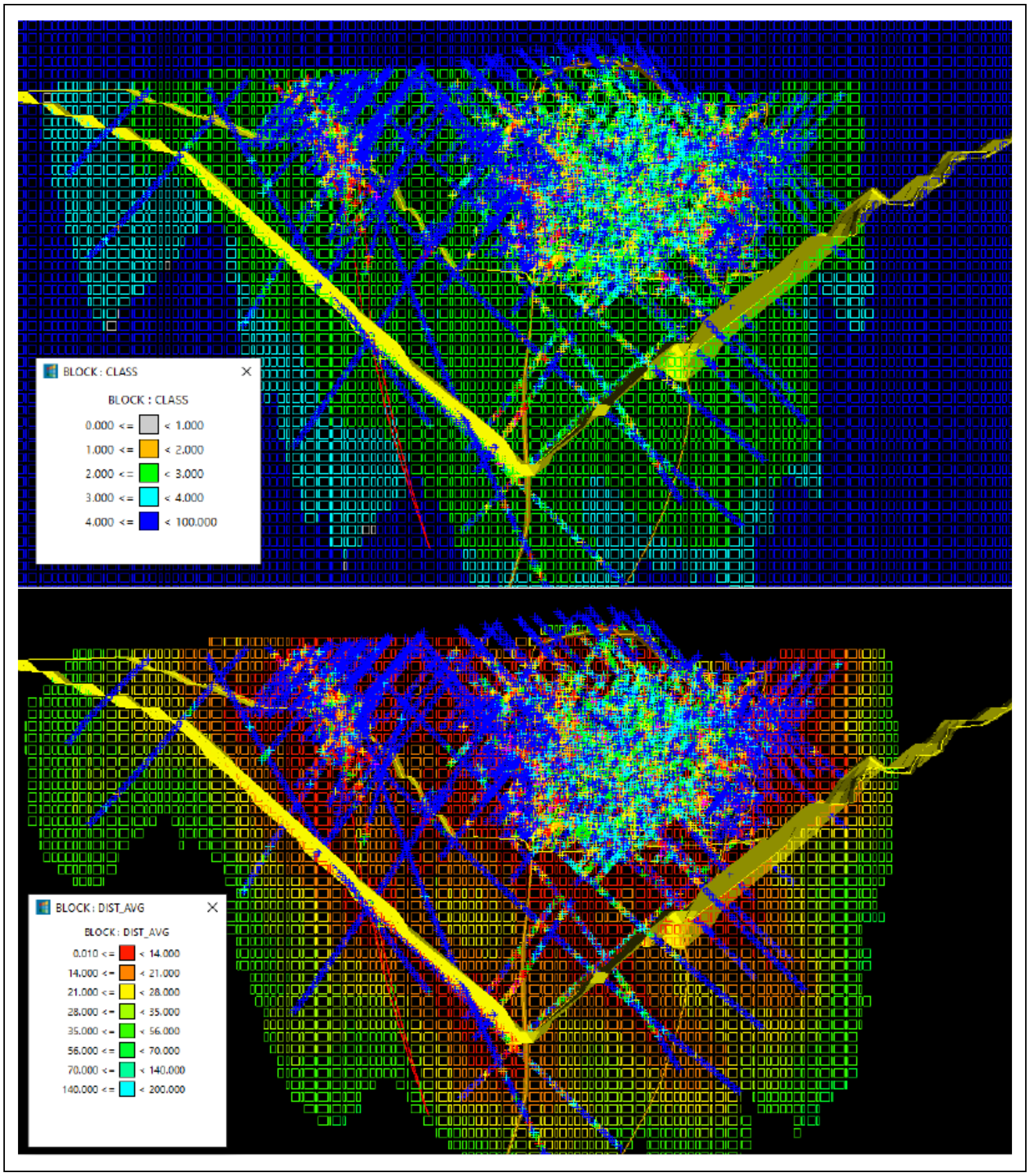


Figure 14-77 Illustration of Akwasiso 2021 Resource Classification and Block 3-Hole Average Distances

Note: Showing preliminary optimized pit shell at $1600/oz price

14.4.7 Reasonable Prospect of Eventual Economic Extraction

The Akwasiso mineralization is assumed amenable to open pit mining and milling and recovery through CIL gold processing. The reasonable prospect for eventual economic extraction of the Mineral Resources was tested by constraining the Mineral Resources within a conceptual pit shell optimized in NPV Scheduler™ software at US$1600/oz gold price with all the materials of Indicated and Inferred classes and with a reporting cut-off grade of 0.5 g/t Au. The pit optimization parameters are listed in Table 14-41. *See “Cautionary Note about Mineral Resources”.*

Table 14-41 Akwasiso Conceptual Constraining Pit Parameters

Parameter	Value
Gold Price (US$/ounce)	1,600
Mining Cost (US$/tonne)	1.004 - 1.571
Mining Cost Incremental (US$/Vertical 6m)	0.0043 – 0.0146
Mill Feed Transport (US$/tonne)	2.14
Process Cost (US$/tonne)	8.79 – 11.32
Gold Recovery (%)	94%
General and Administration (US$/tonne)	6.55

14.4.8 Mineral Resource Statement

The Akwasiso Mineral Resource estimate is reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.

The Qualified Person is Eric Chen, P.Geo. who is Galiano Gold's former Vice President of Technical Services. The effective date is February 28, 2022. The Mineral Resource estimate is reported assuming open pit mining and milling and CIL gold processing methods using a cut-off grade of 0.5 g/t Au, is constrained within a conceptual open pit prepared using NPV Scheduler™ software. The Mineral Resource estimates are summarized in Table 14-42. The estimated grades and tonnages for multiple cut-offs are shown in Figure 14-78.

Table 14-42 Akwasiso Mineral Resource Estimate at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

Category	Cutoff Grade (g/t Au)	Tonnes (kt)	Au (g/t)	Au Metal Contained (koz)
Measured		na	na	na
Indicated	0.5	1,655	1.31	69
Measured & Indicated	0.5	1,655	1.31	69
Inferred	0.5	158	1.46	7

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion as of February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software using several technical parameters including:*
   a. *$1,600/oz Au price*
   b. *$1.004/t to $1.571/t mining costs*
   c. *$2.14/t mill feed transport costs*
   d. *$8.79/t to $11.32/t processing costs*
   e. *94% Au recovery for all material*
   f. *$6.55/t G&A*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

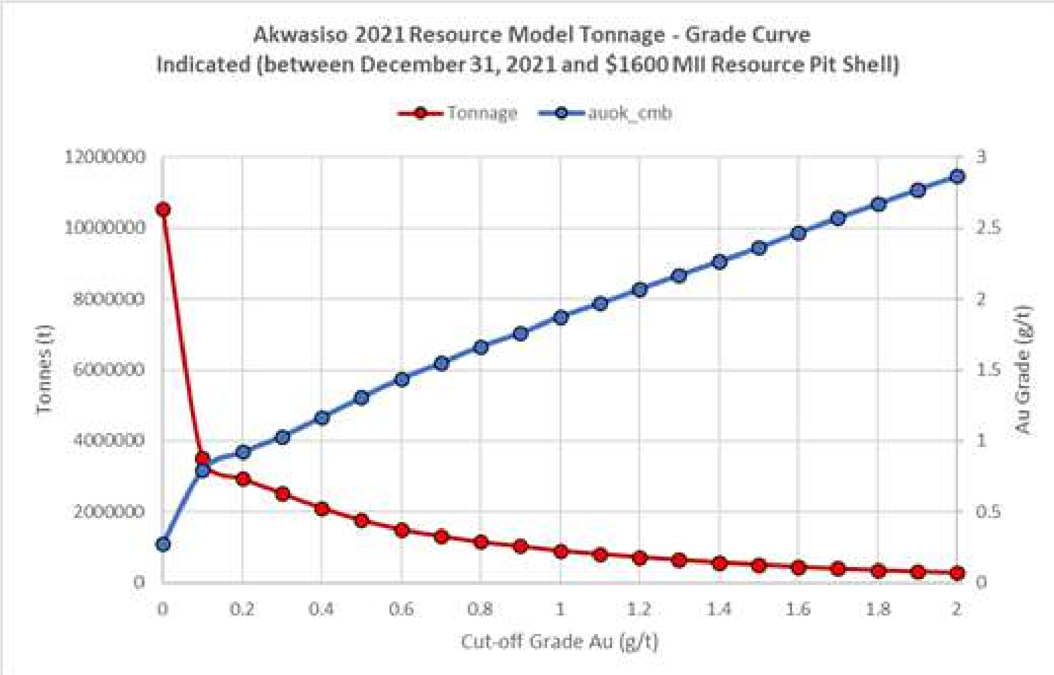


Figure 14-78 Akwasiso Tonnage - Grade Curve for Indicated Mineral Resources

14.4.9 Factors That May Affect the Mineral Resource Estimate

Other than as discussed in other sections of this report there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the Mineral Resource estimates. Other relevant factors that may materially affect the Mineral Resources, including mining, metallurgical recovery, and infrastructure are reasonably well understood according to the assumptions presented in this Report.

The current Mineral Resource estimate carries moderate uncertainty and risk. The risk is mainly related to the statistical gaps between the exploration and GC assays as discussed in the previous sections. Even though the resource model was calibrated with GC model, and the GC samples, which are on the lower side of the comparison, were used in estimation, the predicted tonnage and grade in areas beyond the influence of GC data may be different from what the future GC may define. Reconciliation shall be closely monitored and further studies on GC sampling, assaying, etc. in order to fully understand the discrepancy between exploration and GC assays shall continue.

14.5 Dynamite Hill Mineral Resource Estimate

The Dynamite Hill Mineral Resource was previously estimated by CSA Global and reported as part of the Asanko Gold Mine NI 43-101 2017 technical report. The Mineral Reserve, based on the 2017 Mineral Resource, was depleted before the effective date of the Asanko Gold Mine 2019 technical report.

Mining at Dynamite Hill between November 2017 to August 2019 demonstrated that the mineralization is still open in all directions and extends beyond the final depleted pit surface. Infill and step-out drilling program was subsequently designed and executed by Asanko Exploration team with the goal to update the geology and Mineral Resource model below the depleted pit surface. The 2021 drilling defined the boundary of the mineralization with adequate data density to define a Mineral Resource.

14.5.1 Database

The current drillhole database used to support the resource estimate now consists of 170 exploration holes totalling 24,692 metres and 872 grade control holes totalling 28,667 metres (Table 14-43). The cut-off date of drilling data is October 13, 2021.

Table 14-43 Dynamite Hill Exploration Drill Holes

Exploration Holes	DDH	RC	RCD	Total
Number of holes	12	140	18	170
Metres drilled	2,502	17,698	4,492	24,692
Grade Control Holes	**RC**			
Number of holes	872			
Metres drilled	28,667			

Twenty-seven of the RC/RCD holes were completed between August and October 2021. Exploration drilling in 2021 brought the drillhole density to nominal 25 x 25 metre spacing below the mined pit surface. All GC holes were completed between 2017 and 2019 and were drilled at approximately 10 x 5-10 metre spacing.

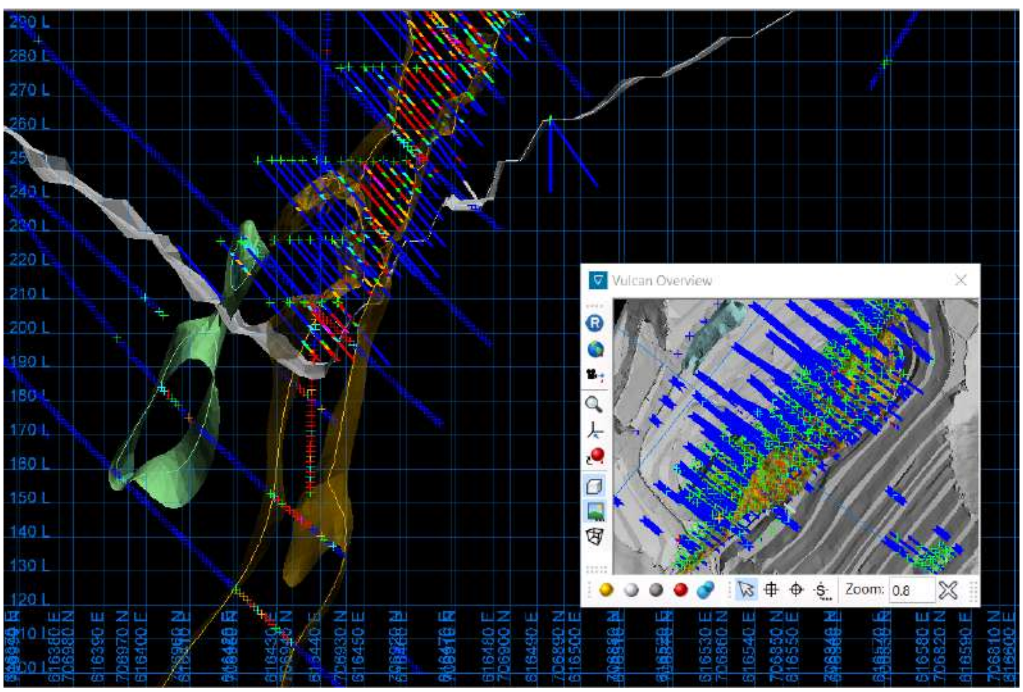


Figure 14-79 Dynamite Hill Exploration and GC Drill Holes

Note: Exploration hole samples shown as crosses and GC holes as solid lines)

All drilling methods, sample collection methods and data quality processes and results are described in the relevant sections of this report.

14.5.1.1 Verification of Exploration Data

Eric Chen, P.Geo., is the QP for the Dynamite Hill Mineral Resource estimate and has conducted data verification to assure the accuracy, completeness, and suitability of the exploration and grade control data for Mineral Resource estimation.

Extracted drillhole data were received from Asanko site in comma-delimited csv format. The QP worked closely with the site database and exploration team to conduct further data verification to ensure that data entries in all the drillhole tables were free of error and consistent before the data was accepted for resource estimation. The verification process is completed with assistance of various built-in tools in 3D geological modelling software programs or generic data processing program (such as Excel), and has included, but not limited to, checking and correcting duplicate records, drillhole interval overlap, drillhole depth mis-match, abnormal collar location, downhole surveys, erroneous assay values, etc. Verification of Grade Control data was conducted in the same manner as exploration data.

14.5.2 Geological Models

The geological model was interpreted and modelled by Asanko exploration team with incorporation of 2017-2019 grade control drilling and new 2021 exploration drilling. The geological model was constructed using Leapfrog Geo software and includes:

1. Lithology model (LITHO)
2. Oxidation model (OX)
3. Mineralization model (DOMAIN)

14.5.2.1 Lithology and Oxidation Models

The Dynamite Hill area is underlain by fine to medium-grained greywackes (intermittent strong alterations) intercalated with argillites (phyllites), and intrusions of altered felsic rock (feldspar quartz porphyry/granitoid), quartz veins, and stockworks. Mineralization is hosted within veins and disseminations in and around a granitic intrusive located on the Nkran shear trend.

The lithology is generalized into a granite and a sedimentary rock model. The sedimentary rock model is treated as background rock mass.

The oxidation model represents different levels of weathering and is used for material-type categorization and density modelling purposes. Simple weathering surfaces are constructed for the base of complete oxidation (BOCO) and the top of fresh rock (TOFR). The two surfaces divided weathering into Oxide (strongly to moderately oxidized), Transitional (weakly oxidized) and Fresh (fresh rock) material types. Oxidation boundaries are based on drill core logging; Away from the drilling the thickness of weathering was maintained parallel to topography. The lithology and oxidation models are shown in Figure 14-80.

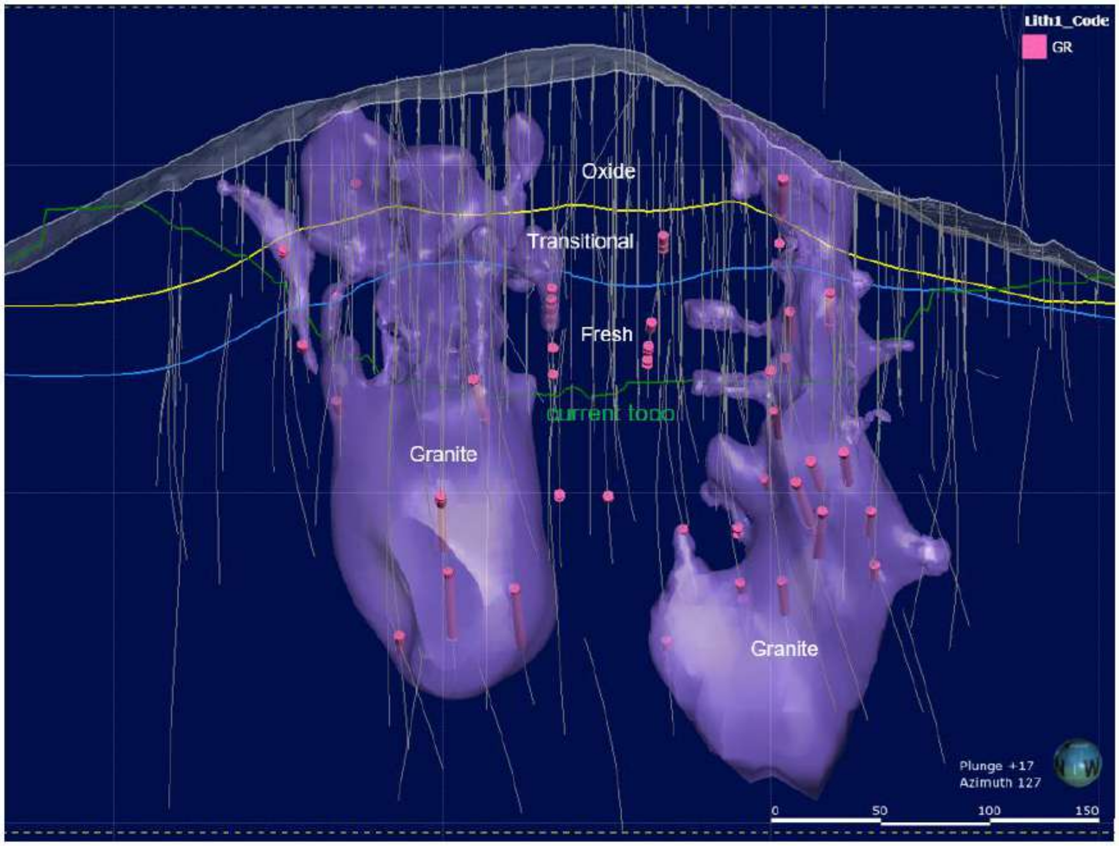


Figure 14-80 Dynamite Hill Lithology and Oxidation Model (Inclined Long Sectional View of Granite Model)

14.5.2.2 Mineralization Model

Gold Mineralization is mostly associated with quartz stockwork hosted within the northwest steeply dipping orebody of strongly altered (chloritic, sericitic, and silicified) wackes, and at the contact between felsic intrusive (granite) and foliated meta-sedimentary rocks.

Modelled 3D granite, logged drillhole lithology, grade control and exploration assays are used to guide the interpretation of three gold mineralization zones at approximate 0.2~0.3 g/t.

The main zone is a single solid body hosted within and around the granite intrusive and contains most of the gold in the Dynamite Hill deposit. Two smaller zones are in the hanging wall above the main zone, and all of them are sub-parallel to the main regional northeast trending northwest steeply dipping structure. The gold mineralized zones are shown in Figure 14-81 and Figure 14-82.

All lithology, oxidation, and mineralization models are summarized in Table 14-44.

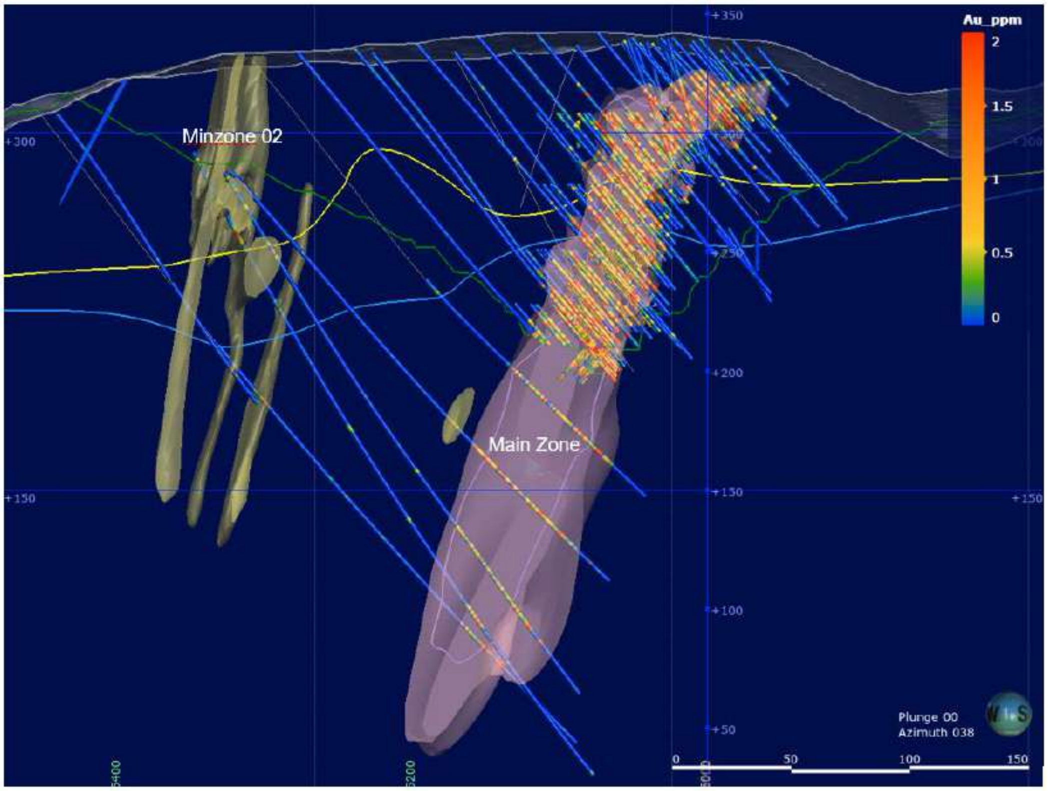


Figure 14-81 Sectional View of Dynamite Hill Mineralization Model

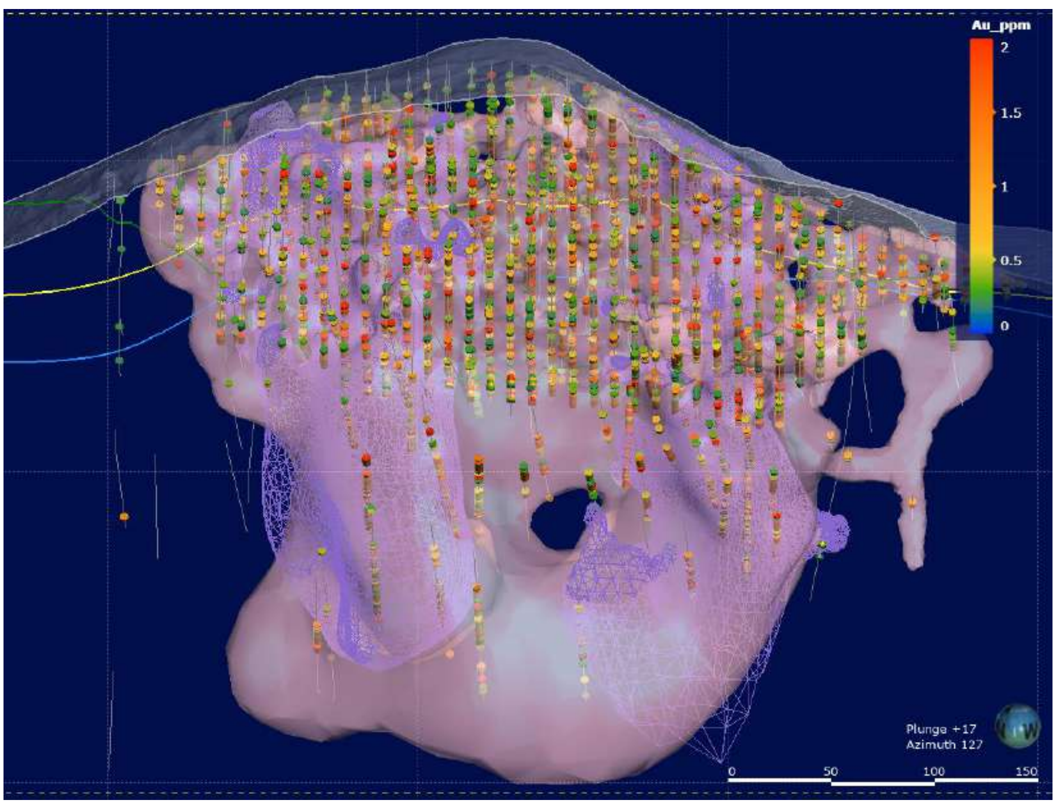


Figure 14-82 Long Sectional View of Dynamite Hill Main Mineralization Model

*Note: * Main Zone shown as solid in light red colour*

Table 14-44 List of Dynamite Hill Geological Models and Codes

Model Type	Model Name	Code	Original File Name	Effective Date
Mineralization	Main Zone	10	Minzone_1_v041121.00t	2021-11-04
Mineralization	Minzone01	11	Minzone_2_v041121.00t	2021-11-04
Mineralization	Minzone02	12	Minzone_3_v041121.00t	2021-11-04
Mineralization	Background Zone	9	BackgroundZone.00t	2021-11-04
Lithology	Granite	1	gran1_v281021.00t	2021-10-28
Lithology	Granite	1	gran2_v281021.00t	2021-10-28
Lithology	Granite	1	gran3_v281021.00t	2021-10-28
Lithology	Sediments	0	BackgroundZone.00t	2021-11-04
Oxidation	Oxide	1	OX Contacts_v041121.00t (ox-tr contact)	2021-11-04
Oxidation	Transitional	2	OX Contacts_v041121.00t (ox-tr contact)	2021-11-04
Oxidation	Fresh	3	FR Contacts_v041121.00t (tr-fr contact)	2021-11-04

14.5.3 Exploration Data Analysis

Drillhole samples are coded by lithology, oxidation, and mineralization models for statistical analysis. Exploratory data analysis was carried out for both individual and combined geological features.

The probability plots shown in Figure 14-83 show the mineralization model provides the best domain to distinguish different grade populations of the deposit. Different lithologies or oxidation within the same mineralization domain do not show significant statistical differences.

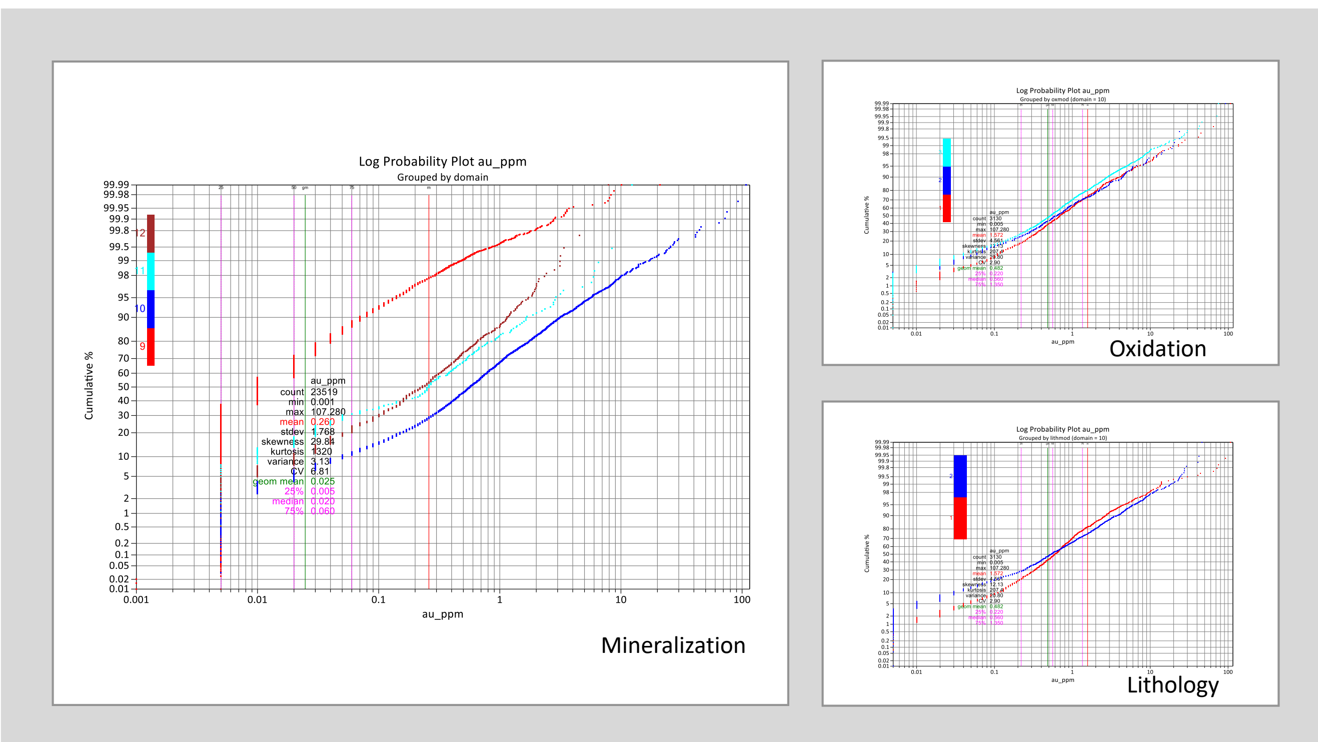


Figure 14-83 Log Probability Plot of Dynamite Hill Exploration Drill Hole Assays Au Grade by Mineralization, Oxidation, and Lithology Model

*Note: (*in lithmod figure, code 1 is granite and code 2 is sediments)*

14.5.3.1 Gold Grade Capping/Outlier Restrictions

Anomalous high grade Au assays are present in the drillhole samples, with maximum grade of 107.28 g/t Au in exploration drillholes and 632 g/t Au in grade control drillholes.

Top-cutting threshold grades are assessed by mineralization domains with histogram and log probability (disintegration) graphs of the drillhole assays (Figure 14-84), with consideration of reasonable metal loss and the general grade behaviour at the nearby mined deposits. Assays higher than the threshold grades are capped to the respective threshold grades for each domain. The comparison of sample statistics before and after top-cutting is presented in Table 14-45 for exploration assays and Table 14-46 for GC assays.

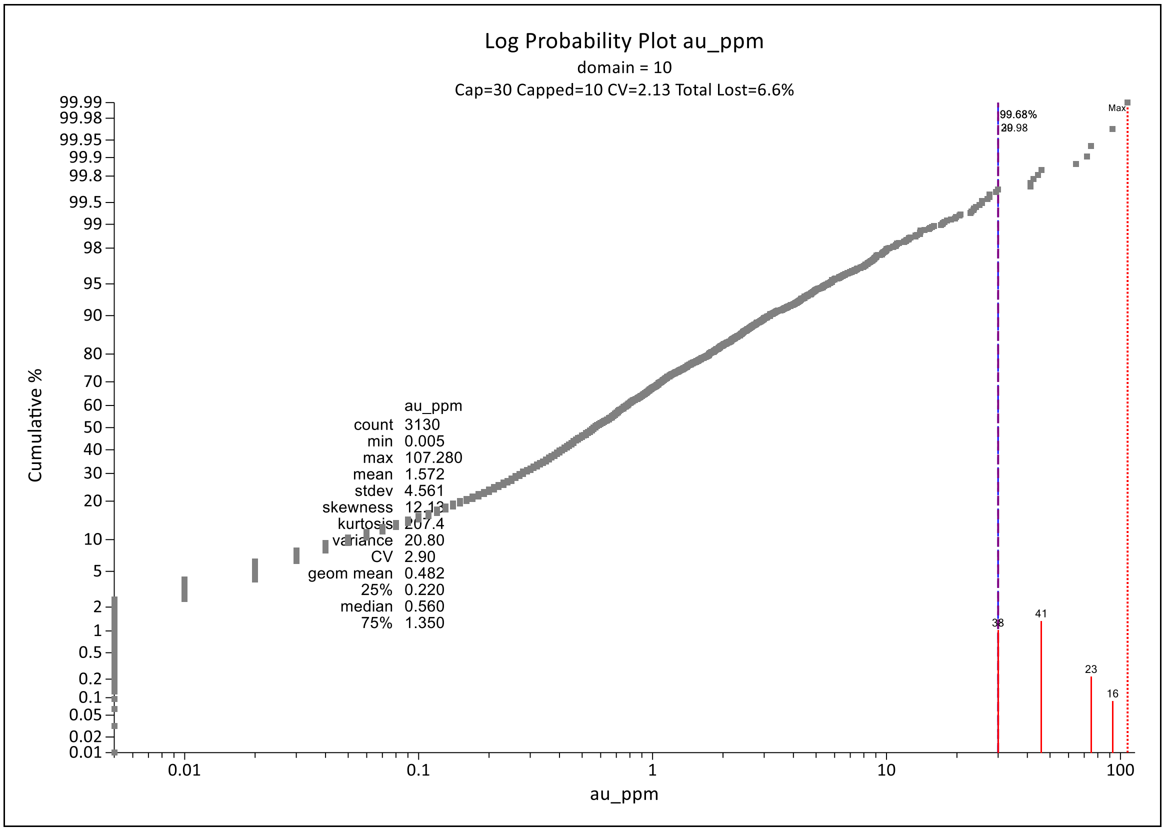


Figure 14-84 Dynamite Hill Top-cut Analysis of Exploration Drill Holes Au Assays

Table 14-45 Summary Statistics of Dynamite Hill Mineralization Domain Raw and Top-Cut Assays of Exploration Drill Holes

		Sample Assays AU Grade (g/t)					Top-cut Assays AUCUT (g/t)			
Domain	**Count**	**Mean**	**CV**	**Maximum**	**Top-cut (g/t) Au**	**# Samples Cut**	**Mean**	**CV**	**Maximum**	**Metal loss**
9	19,821	0.04	6.13	21.04	3	18	0.04	3.71	3	7%
10	3,130	1.57	2.9	107.28	30	10	1.47	2.13	30	7%
11	185	0.74	2.04	12.37	4	7	0.62	1.54	4	16%
12	383	0.46	1.54	7.89	3	6	0.44	1.32	3	4%

Table 14-46 Summary Statistics of Dynamite Hill Mineralization Domain Raw and Top-Cut Assays of Grade Control Drill Holes

		Sample Assays AU Grade (g/t)					Top-cut Assays AUCUT (g/t)			
Domain	Count	Mean	CV	Maximum	Top-cut (g/t) Au	# Samples Cut	Mean	CV	Maximum	Metal loss
9	10,293	0.07	3.98	11.08	3	14	0.07	3.16	3	4%
10	8,368	1.72	4.79	632	30	17	1.57	1.86	30	8%
11	94	0.67	1.69	9.4	4	2	0.61	1.24	4	9%
12	0	-	-	-	-	-	-	-	-	-

14.5.3.2 Composites

The dominant sample length is 1.0 metre for exploration drill hole samples and 1.5 meters for GC drill hole samples. There is no obvious trend of grade distribution by the length of the samples.

The exploration drillhole samples are composited from collar to toe at 1.5 metre equal length intervals, to maintain the uniform support as the grade control drillhole sample length (1.5m). Residual of less than half of the composite length are added to the last full composite. The residuals are mostly present at the end of drillholes. Drillhole traces without samples or missing assays are ignored. The composites are coded by the mineralized domain wireframes (majority rule) and the statistics. Assays are top cut prior to compositing. The comparison of composite statistics before (AU_PPM) and after top cutting (AUCUT) is presented in Table 14-47.

Table 14-47 Composite Au Statistics of Dynamite Hill Exploration Drillholes

	Composite_1.5m AU_PPM				Composite_1.5m AUCUT			
Domain	Count	Mean	CV	Max	Count	Mean	CV	Max
9	14,399	0.04	4.62	10.97	14,399	0.04	3.39	8.05
10	2,105	1.57	2.27	62.06	2,105	1.46	1.74	28.5
11	123	0.73	1.57	6.29	123	0.6	1.22	3.34
12	258	0.46	1.27	5.56	258	0.44	1.08	2.3

Note: Composite AUCUT maximum grade may be different from assays AUCUT due to independent domain coding process

14.5.3.3 Boundary Analysis

The boundary condition between the mineralization, oxidation, and lithology was assessed through visual inspections. The grades show sharp contact between the mineralization domain and the non-mineralized background. Within the mineralized domain, the grades do not show distinct change across the lithology boundaries or oxidation boundaries.

14.5.3.4 Declustering

Conditional simulation (Sequential Gaussian Simulation, or SGS) is used to model the main mineralized domain. Normal Score transformation of the Au grade is required for SGS process, which requires the de-clustered distribution of the composite Au grade for the domain to map the normal score transformation. Cell de-clustered method is used. Several de-clustering cell sizes were tested on GC samples and exploration composites separately. The final cell size of 6 x 15 x 15 metre for GC samples, and 8 x 20 x 20 metre for exploration composites was selected and applied, primarily based on the respective data spacing and review of mean vs. cell size graph (Figure 14-85). The de-clustered statistics are compared to raw composites and presented in Table 14-48.

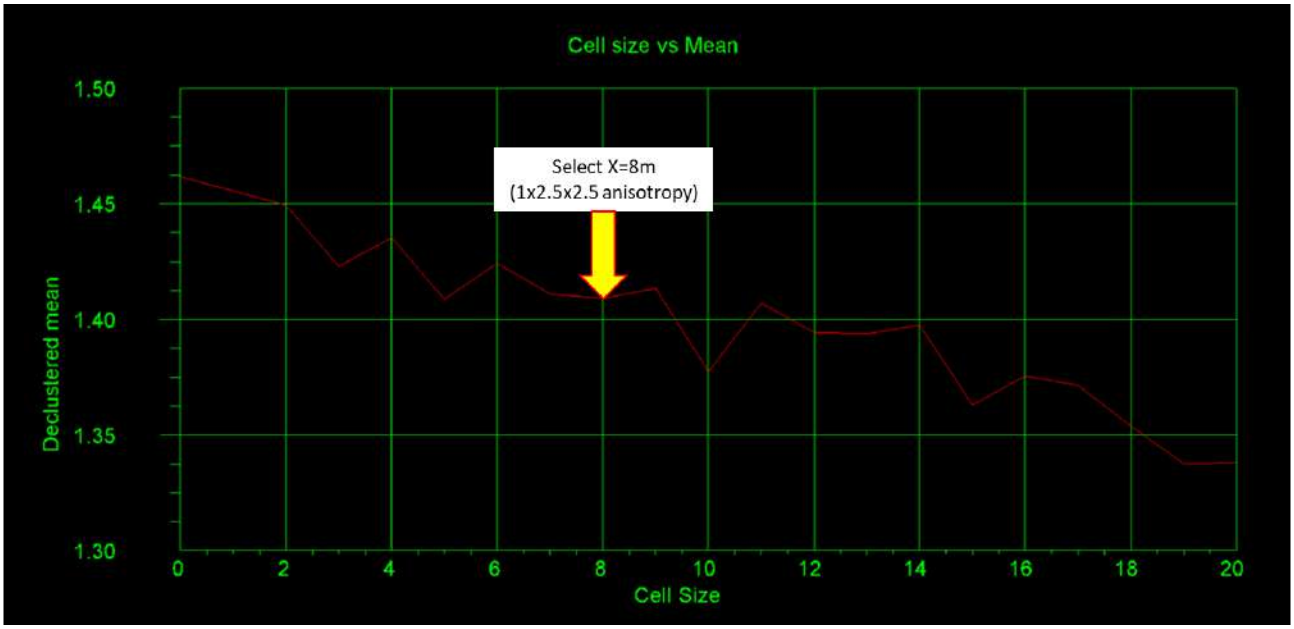


Figure 14-85 Cell De-clustered Dynamite Hill Exploration Drillhole Composites Au Mean vs. Cell Size (Main Zone)

Table 14-48 De-clustered and Raw Dynamite Hill Exploration Drillhole Composite Au Statistics Comparison (Main Zone)

	Comp AU_PPM					Comp AUCUT (decl.)					
Domain	**Count**	**Min**	**Max**	**Mean**	**CV**	**Count**	**Min**	**Max**	**Mean**	**CV**	**Metal loss**
Comp AU_PPM	2,105	0.005	62.06	1.57	2.27	2,105	0.005	28.53	1.41	1.75	-10%
Comp AUCUT	2,105	0.005	28.53	1.46	1.74	2,105	0.005	28.53	1.41	1.75	-3%

14.5.3.5 Variography

Closely spaced GC drill holes depict well the characteristics of short-range continuity of gold grade therefore GC data is merged with exploration composites for variography analysis. As smaller domains (11, 12) do not contain sufficient samples for reliable variography, only the main mineralized domain (10) is modelled.

The variogram is modelled in Gaussian space with the normal scores transformed from the sample grades in real space. Correlograms are calculated and modelled with a two-structure exponential model using SAGE™ 2000 software. A robust variogram (correlogram) model is obtained for Domain 10 that matches well with the observed geology and trends of mineralization (Figure 14-86 and Figure 14-87, Table 14-49).

Dynamite Hill GC_EXP 1.5cmp au_ns correlogram

Medsystem and Vulcan Rotation Conventions

Nugget ==> 0.222
C1 ==> 0.598
C2 ==> 0.180

First Structure -- Exponential with Practical Range

LH Rotation about the Z axis ==> 18
RH Rotation about the X' axis ==> -4
LH Rotation about the Y' axis ==> 64
Range along the Z' axis ==> 6.9 Azimuth ==> 290 Dip ==> 26
Range along the Y' axis ==> 18.4 Azimuth ==> 18 Dip ==> -4
Range along the X' axis ==> 12.1 Azimuth ==> 100 Dip ==> 63

Second Structure -- Exponential with Practical Range

LH Rotation about the Z axis ==> 27
RH Rotation about the X' axis ==> -4
LH Rotation about the Y' axis ==> -21
Range along the Z axis ==> 40.2 Azimuth ==> 106 Dip ==> 69
Range along the X' axis ==> 17.0 Azimuth ==> 119 Dip ==> -21
Range along the Y' axis ==> 81.8 Azimuth ==> 27 Dip ==> -4

Modeling Criteria

Minimum number pairs req'd ==> 500
Sample variogram points weighted by # pairs

Figure 14-86 Dynamite Hill Domain 10 Composite Au Normal Score Variogram (Correlogram) Parameters

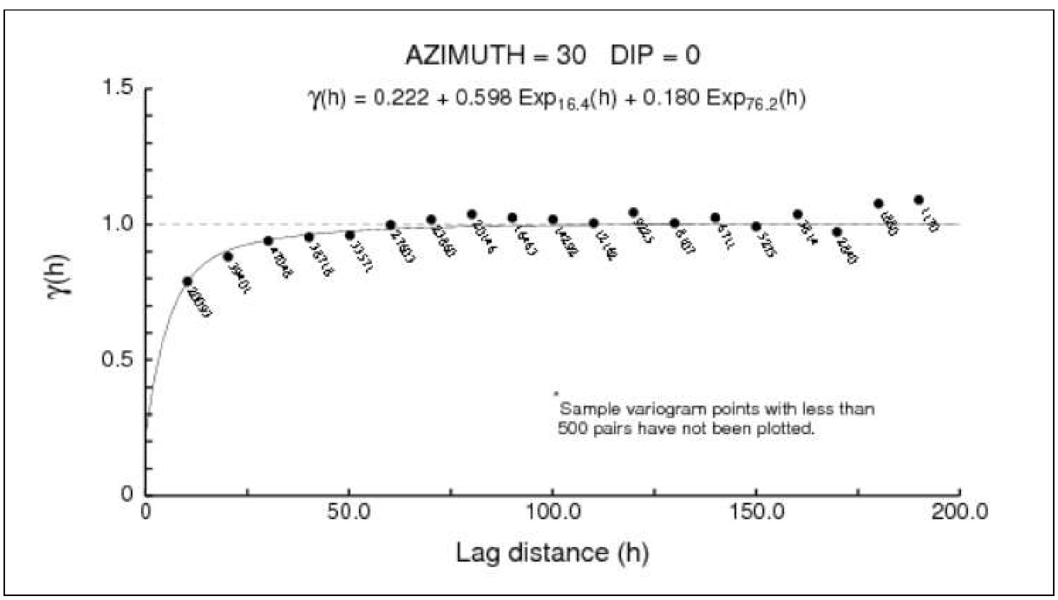


Figure 14-87 Example of Domain 10 GC Sample and Exploration Composite Au Normal Score Variogram (Correlogram)

Table 14-49 Dynamite Hill Domain 10 Composite Au Normal Score Variogram (Correlogram) Parameters

Domain	Type	Sill	Rotation Angles (Vulcan)			Ranges (m)		
			Azimuth	Plunge	Dip	Major	Semi	Minor
100	Nugget	0.222	-	-	-	-	-	-
	Exponential	0.598	18	-4	64	18.4	12.1	6.9
	Spherical	0.18	27	-4	-21	81.8	17	40.2

14.5.4 Estimation/Interpolation Methods

14.5.4.1 Block Model Setup

A block model was developed within Vulcan software. The model covers the full extent of updated geology and mineralization models and provides adequate extent to allow potential pit expansion. The block size, at 5 x 5 x 3 metres, is considered the SMU, smallest unit that a mining decision is based on.

A large-scale panel (25 x 25 x 15 metre) is also set up for post-processing of the Domain 10 simulation to localize the simulated grades to the SMU blocks, each panel size being a multiple of the smaller SMU block size.

The block model setup dimensions are presented in Table 14-50 and Table 14-51.

Table 14-50 Dynamite Hill 2021 Resource Model Setup

	Origin	Minimum	Maximum	Extent (m)	Block Size (m)	# Blocks
Easting	616020	616020	616930	910	5	182
Northing	706520	706520	707430	910	5	182
Elevation	17	17	380	363	3	121

Table 14-51 Dynamite Hill Domain 10 Simulation Model Setup

	Origin	Minimum	Maximum	Extent (m)	Block Size (m)	# Blocks
Easting	616310	616310	616615	305	1	305
Northing	706760	706760	707110	350	1	350
Elevation	17	17	344	327	1.5	218

The block model was coded according to the geological model wireframes by majority rule as shown in Figure 14-88.

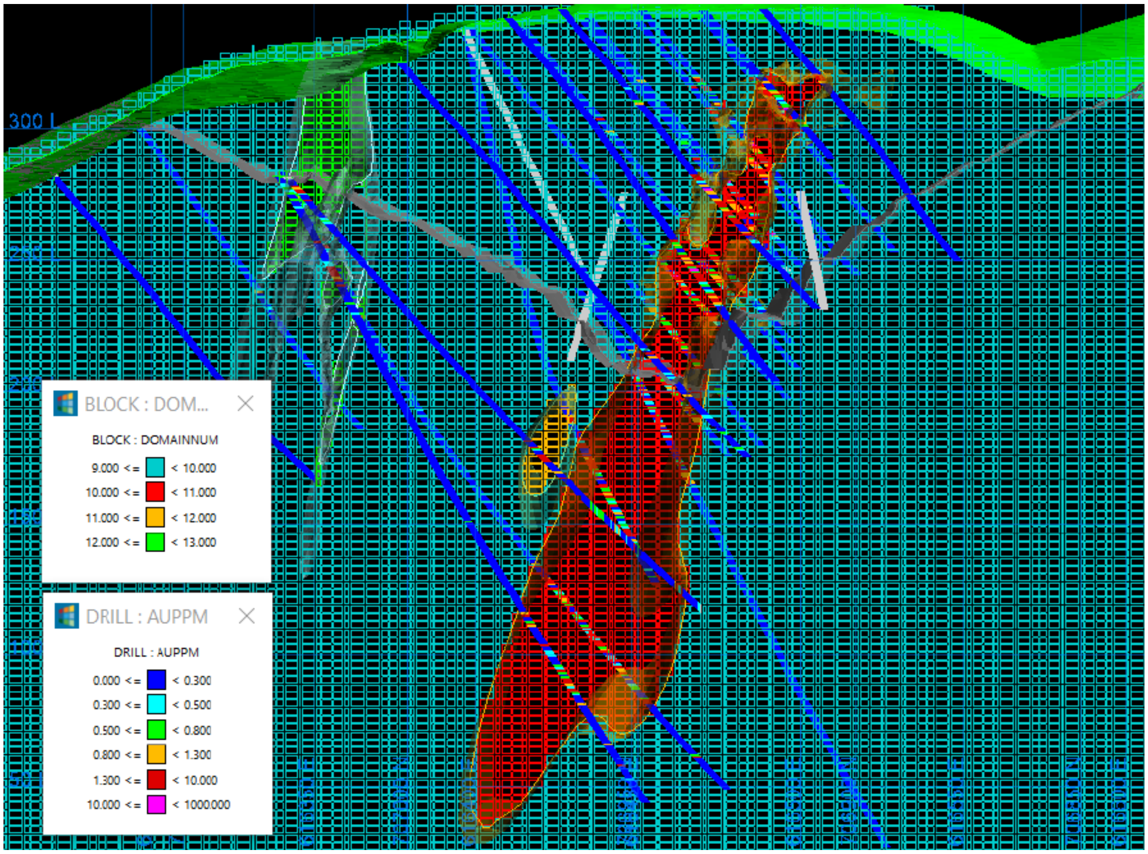


Figure 14-88 Vertical Sectional View of Dynamite Hill Resource Block Model of Mineralization Domain

14.5.4.2 Estimation

Grade estimation for Dynamite Hill used a combination of localized selective mining unit (LSMU) and Inverse Distance methods. The main domain (10) used LSMU, and all other domains used Inverse Distance to power 3 (ID3). Only exploration drillhole composites were used.

LSMU Estimation

The grade estimation for Domain 10 is a localized, recoverable resource model with grades estimated at a SMU scale of 5 x 5 x 6 metres. The local metal distribution for the recoverable resource was estimated using conditional simulation. The basic workflow used for LSMU model is as follows:

1. Point scale conditional simulation at 1 x 1 x 1.5 metre scale (Sequential Gaussian Simulation)
2. Re-block each realization to selective mining unit (SMU) scale (5 x 5 x 3 metre)
3. Divide the domain into panels (25 x 25 x 15 metre)
4. Calculate the local metal distribution within each panel from SMUs for all realizations at a sequence of cut-off grades
5. Index the SMU blocks by e-type estimates within each panel to represent a local grade distribution
6. Assign grades from the local distribution in increasing sequence to SMUs ranked by the indexed values (e-type estimates).

The localization is the same approach used for localized uniform conditioning (LUC) which estimates localized SMU grades conforming to the proper grade–tonnage curves as well as maintaining the relative spatial grade distribution pattern indicated by the e-type estimates. The applied estimation differs from LUC by obtaining the local distribution through conditional simulation rather than UC. This maintains the advantages of having a probabilistic conditional simulation model (multiple realization models) while providing a deterministic summary model (one grade per block) to be used for the reporting and optimisation processes.

A total of 50 simulation realizations and the e-type were produced at 1 x 1 x 1.5 metre point scale support, and then each realization and e-type are regularized to 5 x 5 x 3 metre SMU block size. The SGS search parameters are shown in Table 14-52. The SMU blocks are coded with the panel ID (each 25 x 25 x 15 metre panel was assigned a unique ID code) before being exported to csv block model file for post-processing.

The indexing and localization of block grades are completed in Microsoft™ Excel, PowerQuery and processed with DAX language. The localized block model file was then re-imported to Vulcan as the final grade model for Domain 10.

Inverse Distance Estimation

The ID3 was used for grade estimation for Domain 11, 12, and 9. SGS and Inverse Distance (ID3) estimation parameters are summarized in Table 14-52.

Table 14-52 Dynamite Hill Sequential Gaussian Simulation and Inverse Distance (ID3) Estimation Parameters

			# of Composite			# of Drillhole		Octant	Search Ellipsoid					
									Radius (m)			Orientation (Vulcan)		
Modeling Method	Domain	Est. Pass	min	max	max/hole	min	max	max/oct	major	semi	minor	bearing	plunge	dip
SGS	10	one pass	4	15	4	-	-	6	80	80	15	35	0	65
ID3	10 (for ranking)	ID3 / P1	4	12	3	2	5	4	40	30	5	35	0	65
		ID3 / P2	4	12	3	2	5	4	80	60	10	35	0	65
		ID3 / P3	2	8	3	1	3	3	160	120	40	35	0	65
	11	ID3 / P1	4	6	2	2	4	2	40	30	3	35	0	65
		ID3 / P2	2	5	2	1	3	2	80	60	10	35	0	65
	12	ID3 / P1	4	6	2	2	4	2	40	30	3	35	0	78
		ID3 / P2	2	5	2	1	3	2	80	60	10	35	0	78
	9	ID3 / P1	2	6	2	1	3	2	40	30	3	35	0	65

14.5.4.3 Bulk Density

Bulk density was assigned to the block model based on a combination of lithology and oxidation. The bulk density values are calculated from a total of 66 measurements of drill cores representing the various lithology and oxidation types. The calculated average bulk density values by material types are in line with the bulk densities of adjacent deposits. Densities assigned to the block model are shown in Table 14-53.

Table 14-53 Bulk Density Values Assigned to Dynamite Hill Block Model (by Material Type)

Material Type	Bulk Density (t/m^3)
Oxide	1.79
Transitional	1.98
Fresh - Granite	2.70
Fresh - Sediments	2.77

14.5.5 Validation

Validation of the block model included the validation of the simulation model of the main mineralized domain, statistical comparison of the model and input data, visual inspection, and most importantly the reconciliation with the past production.

14.5.5.1 Validation of Simulation

The simulation was validated at point scale. The point scale realizations reasonably reproduced the statistics of input composites (Figure 14-89 and Figure 14-90). The visual inspection of select realizations in 2D and 3D also show reasonable reproduction of the orientation and ranges of input variogram (Figure 14-91).

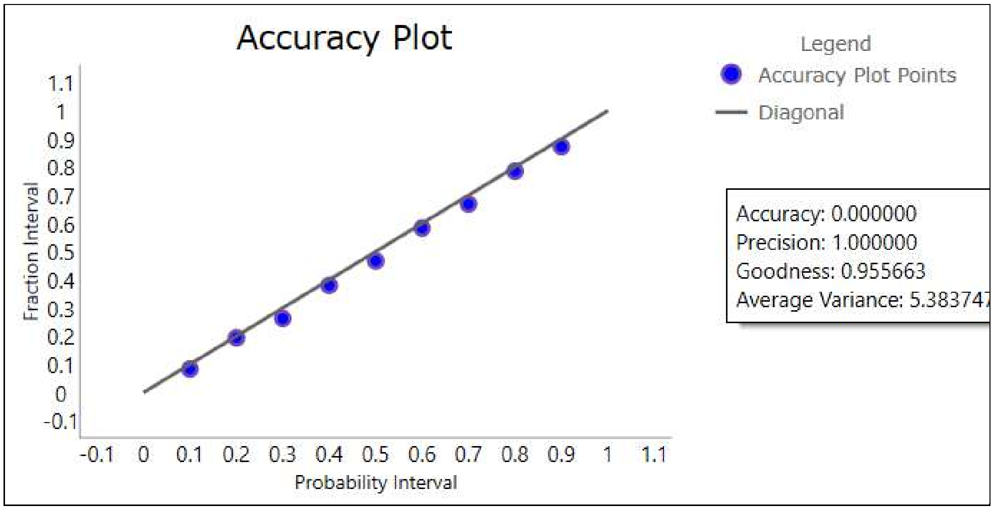


Figure 14-89 Dynamite Hill Accuracy Plot of 50 SGS Realizations

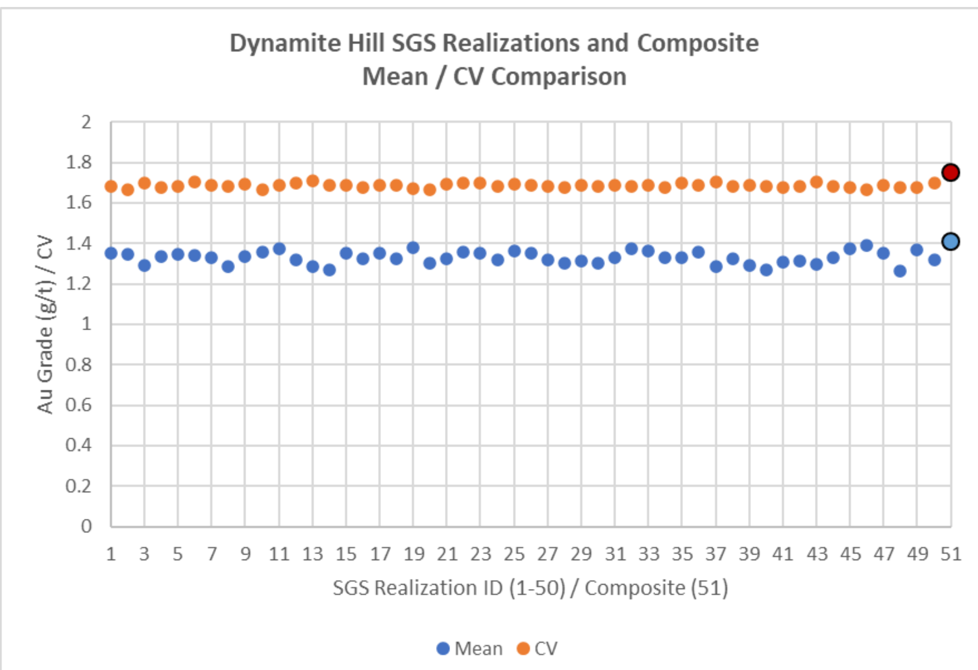


Figure 14-90 Dynamite Hill Statistical Comparison of SGS Realizations and Input Composites

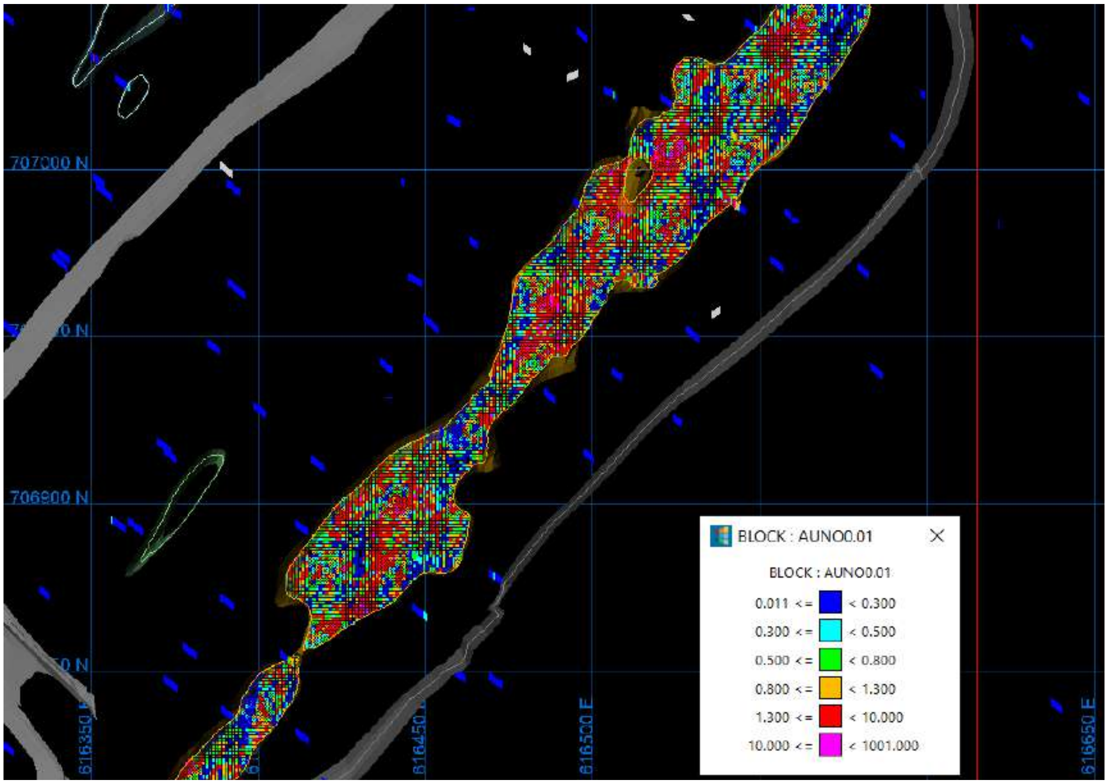


Figure 14-91 Dynamite Hill Plan View of SGS Realization ausim01 Grade

14.5.5.2 Swath Plots

Swath plots were created by comparing the model block grades and input in spatial increments in northing, easting, and elevation slices throughout the deposit (Figure 14-92).

The plots show that block grades (Indicated + Inferred) are smoother and follow the trend of input composite grades, which is the expected result of estimation, with block grades showing lower overall variance.

The global mean comparison presented in Table 14-54.

Table 14-54 Global Stats (at 0 g/t Cut-off grade) Comparison Between Indicated Blocks and Exploration Drill Hole Composites

	Block Model (Class 2)					Composite_1.5m AUCUT				
Domain	**Count**	**Mean**	**CV**	**Min**	**Max**	**Count**	**Mean**	**CV**	**Min**	**Max**
9	-	-	-	-	-	14,399	0.04	3.39	0.001	8.05
10	24,155	1.35	0.81	0.05	9.77	2,105	1.46	1.74	0.005	28.53
11	1,124	0.67	0.92	0.01	3.25	123	0.6	1.22	0.005	3.34
12	2,224	0.44	0.78	0.005	1.97	258	0.44	1.08	0.005	2.3

14.5.5.3 Visual Inspection

The block model was visually reviewed in 2D in sections and level plans, and in 3D to ensure the block estimates are supported by the surrounding composites. In general, the estimates compare well with the input data.

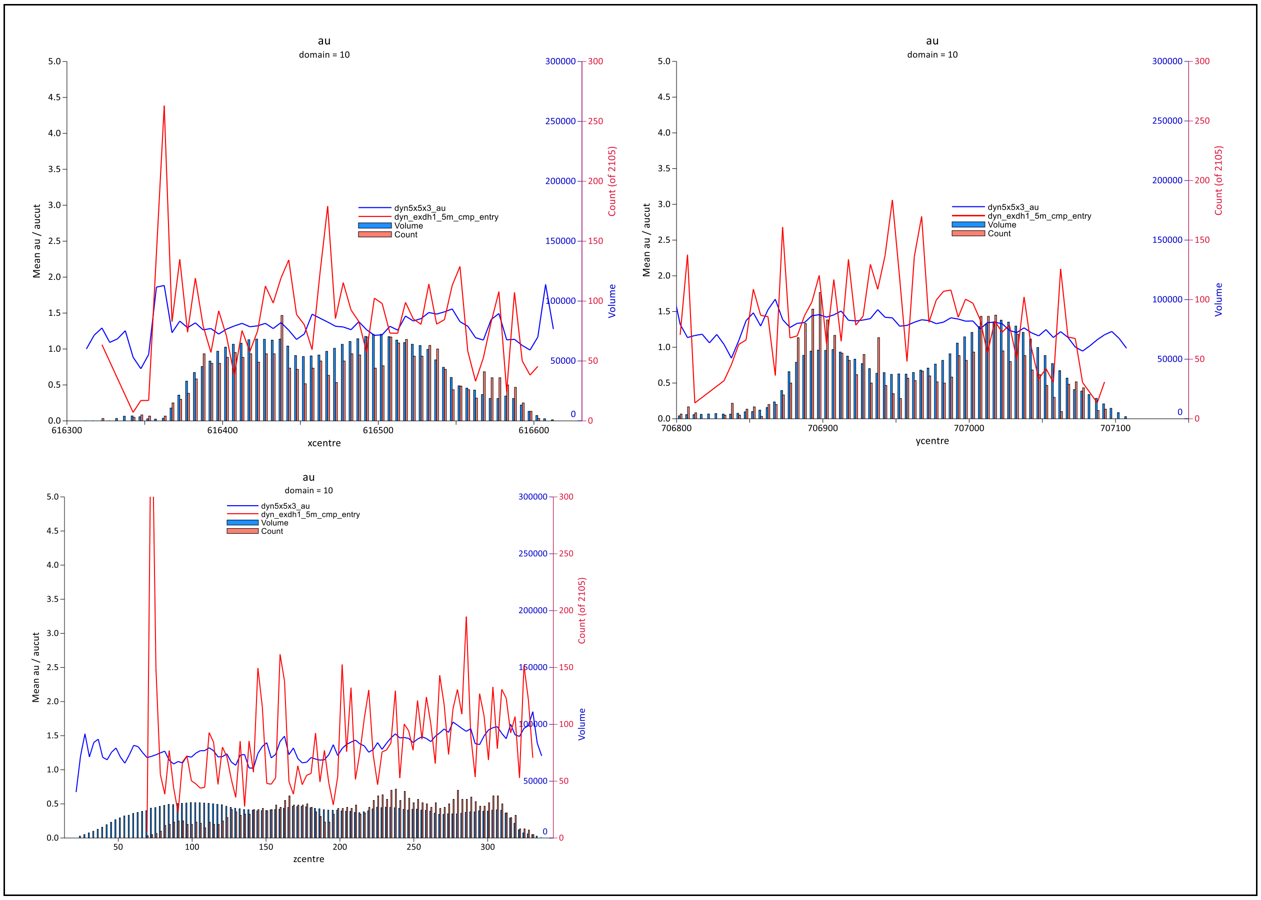


Figure 14-92: Dynamite Hill Swath Plot by Easting, Northing, and Elevation for Block and Composite Au g/t of Domain 10

14.5.5.4 Reconciliation

To evaluate the model performance against the past production, the resource model is compared to the grade control model within the mined-out pit at key cut-off grades. A separate simulation model was also produced with GC samples following similar process as the LSMU model, as an additional check of the resource model within the mined-out pit. Reconciliation results are summarized in Table 14-55.

Table 14-55 Dynamite Hill Resource Model Reconciliation Summary Within Mined-out Pit

COG = 0	Measured + Indicated			Inferred			Total		
	Tonnes	Au (g/t)	Gold (Oz)	Tonnes	Au (g/t)	Gold (Oz)	Tonnes	Au (g/t)	Gold (Oz)
2021 Resource Model	2,058,564	1.48	98,019	10,814,661	0.06	19,471	12,873,225	0.28	117,490
GC Model	1,951,983	1.58	99,436	0	0.00	0	1,951,983	1.58	99,436
GC Sim Model	2,051,851	1.56	102,911	10,755,382	0.05	16,944	12,807,233	0.29	119,855
COG = 0.5	Measured + Indicated			Inferred			Total		
	Tonnes	Au (g/t)	Gold (Oz)	Tonnes	Au (g/t)	Gold (Oz)	Tonnes	Au (g/t)	Gold (Oz)
2021 Resource Model	1,757,790	1.68	94,661	157,176	1.00	5,038	1,914,966	1.62	99,699
GC Model	1,800,110	1.69	97,982	0	0.00	0	1,800,110	1.69	97,982
GC Sim Model	1,683,437	1.84	99,317	123,340	1.04	4,124	1,806,777	1.78	103,441
COG = 0.8	Measured + Indicated			Inferred			Total		
	Tonnes	Au (g/t)	Gold (Oz)	Tonnes	Au (g/t)	Gold (Oz)	Tonnes	Au (g/t)	Gold (Oz)
2021 Resource Model	1,395,255	1.94	87,070	79,641	1.38	3,521	1,474,896	1.91	90,591
GC Model	1,533,186	1.87	92,326	0	0.00	0	1,533,186	1.87	92,326
GC Sim Model	1,340,241	2.14	92,169	62,682	1.44	2,900	1,402,923	2.11	95,069

14.5.6 Classification of Mineral Resources

Dynamite Hill deposit shares the common geological features as other well studied deposits on the Nkran structural trend. The control of mineralization is well understood from the previous modelling and mining.

Drill spacing is the primary factor to define resource classification and only Indicated and Inferred resources are defined at Dynamite Hill. The spacing criteria to separate the resource classes are based on the variogram ranges, experiences of mining at Dynamite Hill and other deposits in similar geological settings.

Nominal drill spacing is determined with a widely accepted mathematic approximation based on calculated average distance of the closest three drillholes to the block. The classification criteria are summarized in Table 14-56. *See "Cautionary Note about Mineral Resources".*

Table 14-56 Dynamite Hill Resource Classification Criteria

Classification Category	Drill Spacing (m)	3-Hole Average Distance (m)
Measured	No Measured classification defined	-
Indicated	40 x 40 drilling (Domain 10)	<= 28.29
	35 x 35 drilling (Domain 9, 11, 12)	<= 24.75
Inferred	80 x 80 metre drilling, or nearest DH < 60 metre distance	<= 56.58

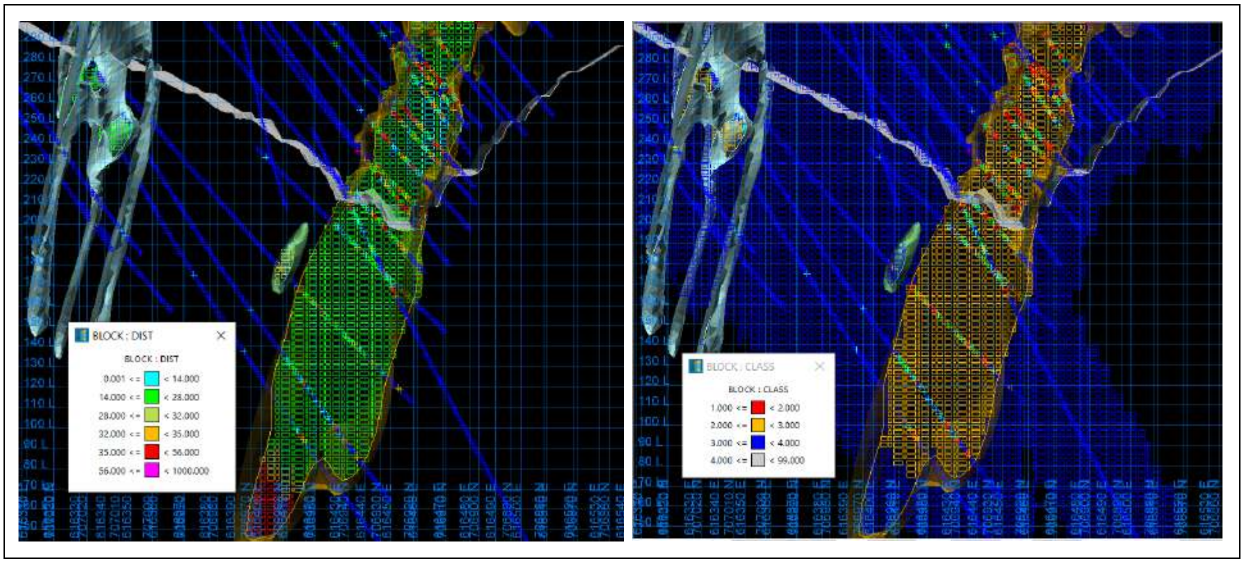


Figure 14-93 Dynamite Hill Block Model 3 - Hole Average Distances and Resource Classification

14.5.7 Reasonable Prospect of Eventual Economic Extraction

The Dynamite Hill mineralization is assumed amenable to open pit mining and milling and recovery through CIL gold processing. The reasonable prospect for eventual economic extraction of the Mineral Resources was tested by constraining the Mineral Resources within a conceptual pit shell optimized in NPV Scheduler™ software at US$1600/oz gold price with all the materials of Indicated and Inferred classes and with a reporting cut-off grade of 0.5 g/t Au. The conceptual pit parameters are listed in Table 14-57.

Table 14-57 Dynamite Hill Conceptual Constraining Pit Parameters

Parameter	Value
Gold Price (US$/ounce)	1,600
Mining Cost (US$/tonne)	1.025 - 1.647
Mining Cost Incremental (US$/Vertical 6m)	0.0087 – 0.0353
Mill Feed Transport (US$/tonne)	2.35
Process Cost (US$/tonne)	8.79 – 11.32
Gold Recovery (%)	94%
General and Administration (US$/tonne)	6.55

14.5.8 Mineral Resource Statement

The Dynamite Hill Mineral Resource estimate is reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.

The Qualified Person is Eric Chen, P.Geo. who is Galiano Gold's former Vice President of Technical Services. The effective date is February 28, 2022. The Mineral Resource estimate is reported assuming open pit mining and milling and CIL gold processing methods using a cut-off grade of 0.5 g/t Au, is constrained within a conceptual open pit prepared using NPV Scheduler™ software. The Mineral Resource estimates are summarized in Table 14-58. The estimated grades and tonnages for multiple cut-offs are shown in Figure 14-94.

Table 14-58 Dynamite Hill Mineral Resource Estimate at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

Category	Cutoff Grade (g/t Au)	Tonnes (kt)	Au (g/t)	Au Metal Contained (koz)
Measured	na	na	na	na
Indicated	0.5	1,900	1.39	85
Measured & Indicated	0.5	1,900	1.39	85
Inferred	0.5	340	1.26	14

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion as of February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software using several technical parameters including:*
    a. *$1,600/oz Au price*
    b. *$1.025/t to $1.647/t mining costs*
    c. *$2.35/t mill feed transport costs*
    d. *$8.79/t to $11.32/t processing costs*
    e. *94% Au recovery for all material*
    f. *$6.55/t G&A*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

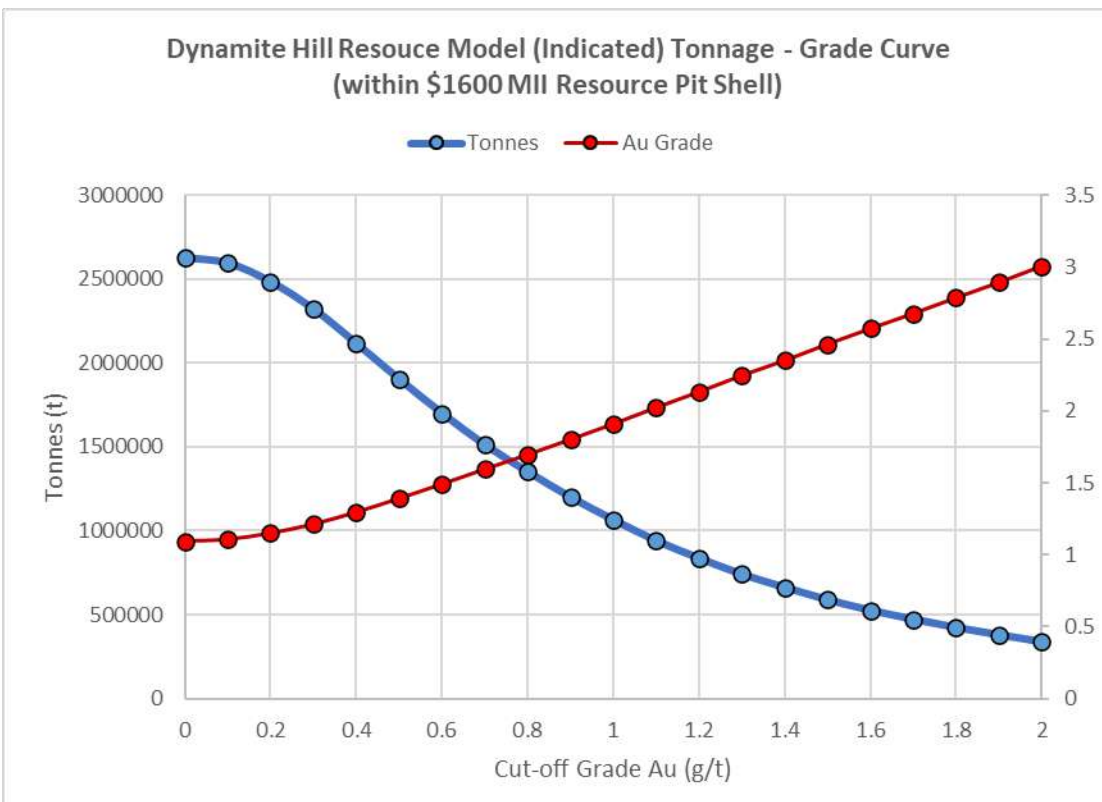


Figure 14-94 Dynamite Hill Tonnage - Grade Curve for Indicated Mineral Resources

14.5.9 Factors That May Affect the Mineral Resource Estimate

Other than as discussed in other sections of this report there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the Mineral Resource estimates. Other relevant factors that may materially affect the Mineral Resources, including mining, metallurgical recovery, and infrastructure are reasonably well understood according to the assumptions presented in this Report.

14.6 Miradani North Mineral Resource Estimate

The Miradani North deposit was mined between 1996 and 2016 by Ukrainians and Russians. The pit is 250 metres long by about 120 metres with a depth of about 60 metres. Most of the oxide mineralization is depleted but the fresh rock remains untouched. No historical data or production record is available from this period. Exploration drilling by Asanko started in 2019, followed by two drilling campaigns in 2020 and 2021. The 2021 drilling was successful in defining the geometry of the mineralization with adequate data density to define the Mineral Resource at Miradani North.

14.6.1 Database

The current drillhole database used to support the resource estimate now consists of 83 exploration holes totalling 19,609 metres (Table 14-59). The cut-off date of drilling data is May 13, 2021.

Table 14-59 Miradani North Exploration Drillholes

Exploration Holes	DDH	RC	RCD	Total
Number of holes	43	8	32	83
Metres drilled	10,453	1,010	8,146	19,609

The exploration holes were planned and drilled at nominal 40 x 40 metre grid. Due to drill rig access limitations, the near-surface portion of the deposit that is directly below the existing pit (water flooded) could not be drilled at the same grid. The current drill plan is show in Figure 14-95 and Figure 14-96.

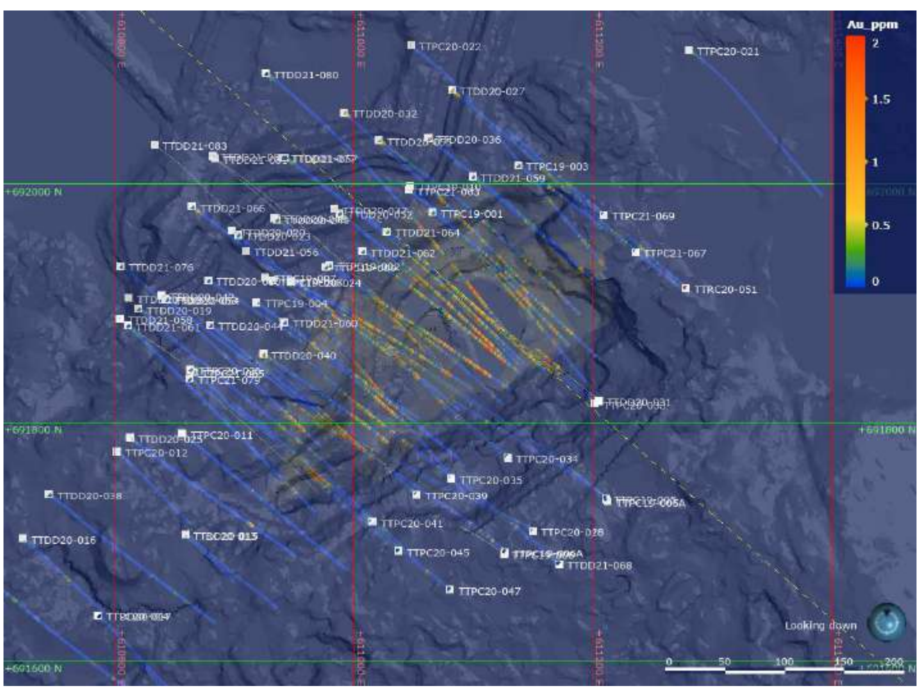


Figure 14-95 Plan View of Miradani North Exploration Drillholes

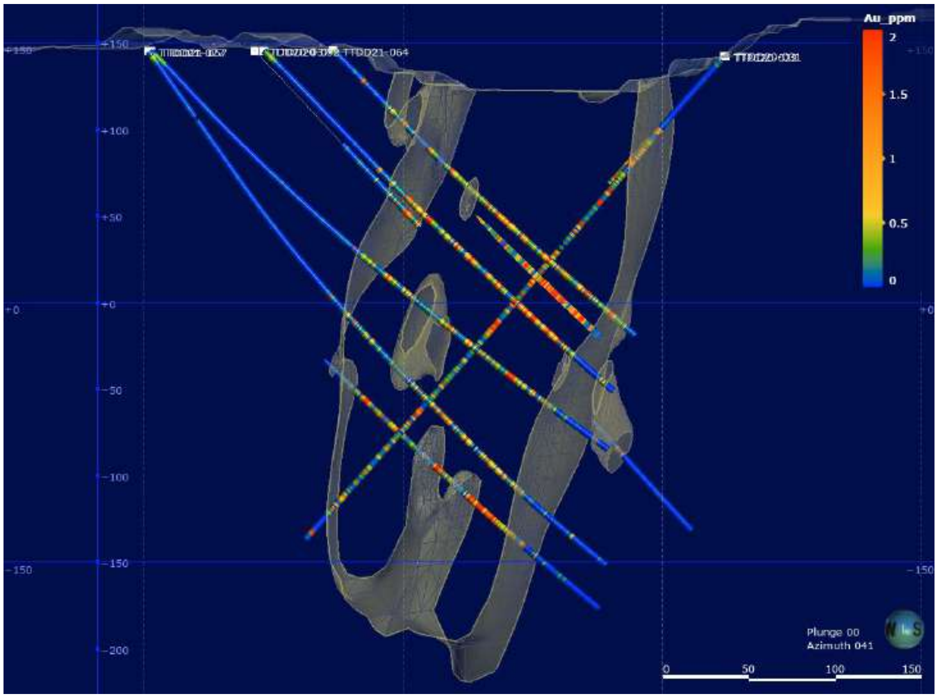


Figure 14-96 Sectional View of Miradani North Exploration Drillholes

All drilling methods, sample collection methods and data quality processes and results are described in the relevant sections of this report.

14.6.1.1 Verification of Exploration Data

Eric Chen, P.Geo., is the QP for the Miradani North Mineral Resource estimate and has conducted data verification to assure the accuracy, completeness, and suitability of the exploration data for Mineral Resource estimation.

Extracted drillhole data were received from Asanko site in comma-delimited csv format. The QP worked closely with the site database and exploration team to conduct further data verification to ensure that data entries in all the drillhole tables were free of error and consistent before the data was accepted for resource estimation. The verification process is completed with assistance of various built-in tools in 3D geological modelling software programs or generic data processing program (such as Excel), and has included, but not limited to, checking and correcting duplicate records, drillhole interval overlap, drillhole depth mis-match, abnormal collar location, downhole surveys, erroneous assay values, etc. Two drillholes, TTDD20-029 and TTDD20-050, were removed from resource database due to significant concern of the reliability of their downhole surveys.

14.6.2 Geological Models

The geological model for Miradani North was interpreted and modelled by Asanko exploration team based on the exploration drilling in 2019 - 2021. The geological model was constructed using Leapfrog Geo software and includes:

1. Lithology model
2. Oxidation model
3. Shear/Fault model
4. Mineralization model

14.6.2.1 Lithology, Oxidation and Shear/Fault Model

The geology of Miradani North deposit is akin to the Nkran deposit in several ways. It is in a dilational jog at the triple junction of NNE-SSW trending regional structures and East-west (080) structures which are underlain by cryptic basement structures.

The stratigraphy is comprised of wackes and intermittent alternating units of sandstones, siltstones, and graphitic shales which are intruded by felsic porphyry. The intrusive unit is about 200 metres long, plunges to the south and up to 100 metre wide at the middle where it was faulted and rotated by a sinistral movement causing shortening and thickening.

The lithology is generalized into a granite and a sedimentary rock model. The sedimentary rock model is treated as background rock mass. Two shear surfaces, hanging wall and footwall, were modelled and are the most significant structures that constrain the overall mineralization.

The oxidation model represents different levels of weathering and is used for material type categorization and density modelling purpose. Simple weathering surfaces are constructed for the base of complete oxidation (BOCO) and the top of fresh rock (TOFR). The two surfaces divided weathering into Oxide (strongly to moderately oxidized), Transitional (weakly oxidized) and Fresh (fresh rock) material types. Away from the drilling the thickness of weathering was maintained parallel to topography (Figure 14-97 and Figure 14-98).

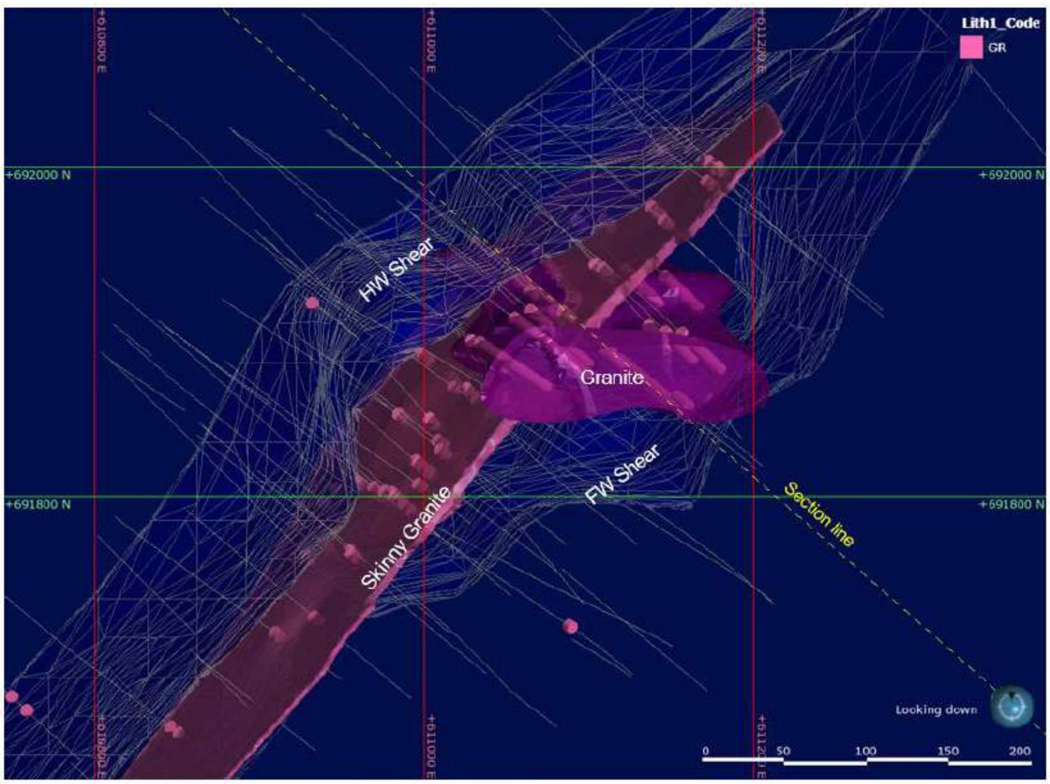


Figure 14-97 Plan View of Miradani North Lithology Model

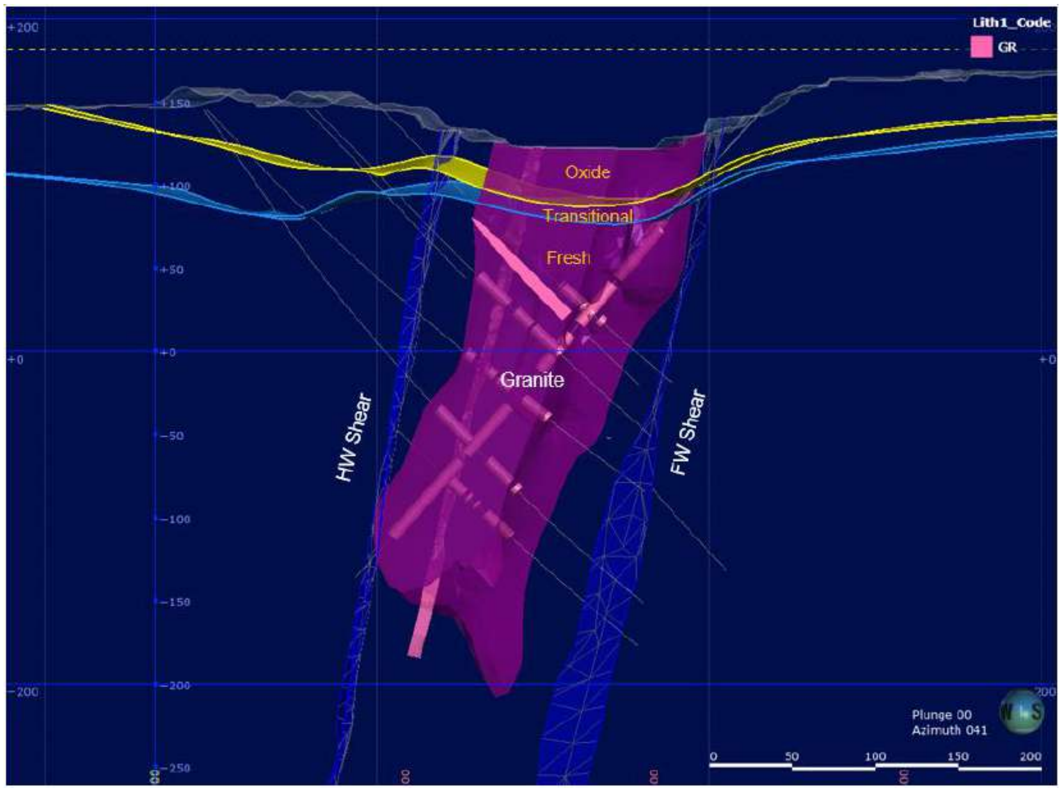


Figure 14-98 Sectional View of Miradani North Lithology Model

14.6.2.2 Mineralization Model

The gold mineralization at Miradani North occurs as free gold in veins that are at the sandstone/granitic porphyry contact or in the granite where the veins occur either as stockwork or spiderwebs of 1-3-centimetre-long veinlets. The overall mineralization is controlled by a westward dipping shoot that plunges to the north. The mineralization is controlled by the shape of the intrusive.

The 3D model of mineralization is based on a geological framework of logged and modelled granite intrusive, constraining shear/faults, and drillhole assays at nominal 0.2~0.3 g/t Au threshold. The interpretation was conducted in both 2D and 3D, and the selection of drillhole intercepts may occasionally include materials lower than target grade threshold to honour the geological trend and maintain the continuity of the 3D shapes. Structural trends were used in 3D solid generation process in Leapfrog. The model is a single solid orebody hosted within and around the main granite intrusions and is sub-parallel to the main regional northeast trending northwest steeply dipping structure (Figure 14-99 and Figure 14-100).

All lithology, oxidation, and mineralization models are summarized in Table 14-60.

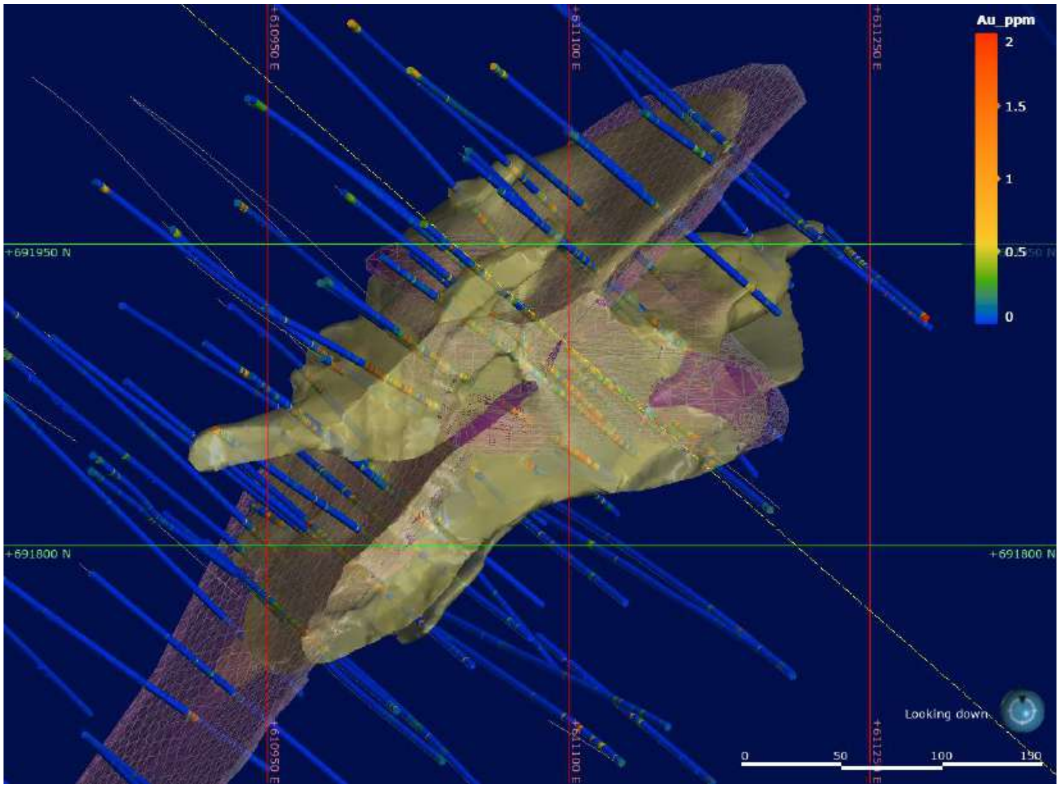


Figure 14-99 Plan View of Miradani North Lithology Model

Note: (Minzone mineralization domain shown in yellow solid. Granite shown as magenta wireframe)*

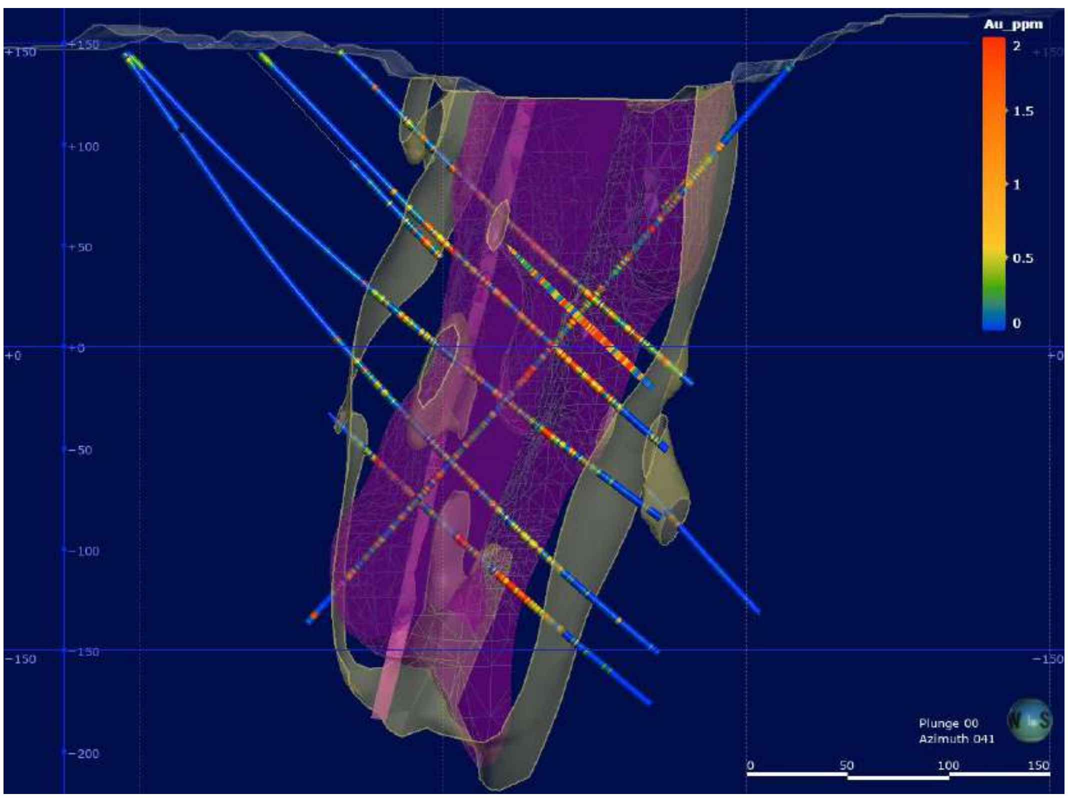


Figure 14-100 Sectional View of Miradani North Lithology Model

Note: (Minzone mineralization domain shown in yellow solid. Granite shown as magenta wireframe)*

Table 14-60 lists all the geological models and codes.

Table 14-60 List of Miradani North Geological Models and Codes

Model Type	Model Name	Code	Original File Name	Effective Date
Mineralization	Minzone	100	MinZone_v3_20210515final.dxf	2021-05-15
Mineralization	OutMinzone	900	SEDS_box.dxf	2021-05-15
Lithology	Granite	1	GR1.dxf	2021-05-04
Lithology	Skinny Granite 1	2	GR2.dxf	2021-05-04
Lithology	Skinny Granite 2	2	GR3.dxf	2021-05-04
Lithology	Sediments	9	SEDS_box.dxf	2021-05-04
Oxidation	Oxide	1	Boco_110521.dxf (ox-tr contact)	2021-05-11
Oxidation	Transitional	2	Boco_110521.dxf (ox-tr contact)	2021-05-11
Oxidation	Fresh	3	ToFr_110521.dxf (Tr-Fr contact)	2021-05-11

14.6.3 Exploration Data Analysis

Drillhole samples are coded by lithology, oxidation, and mineralization models for statistical analysis. Exploratory data analysis was carried out for both individual and combined geological features. The mineralization model provides the best domain to distinguish different grade populations of the deposit. Different lithologies or oxidation within the same mineralization domain do not show significant statistical differences (Figure 14-101 and Figure 14-102).

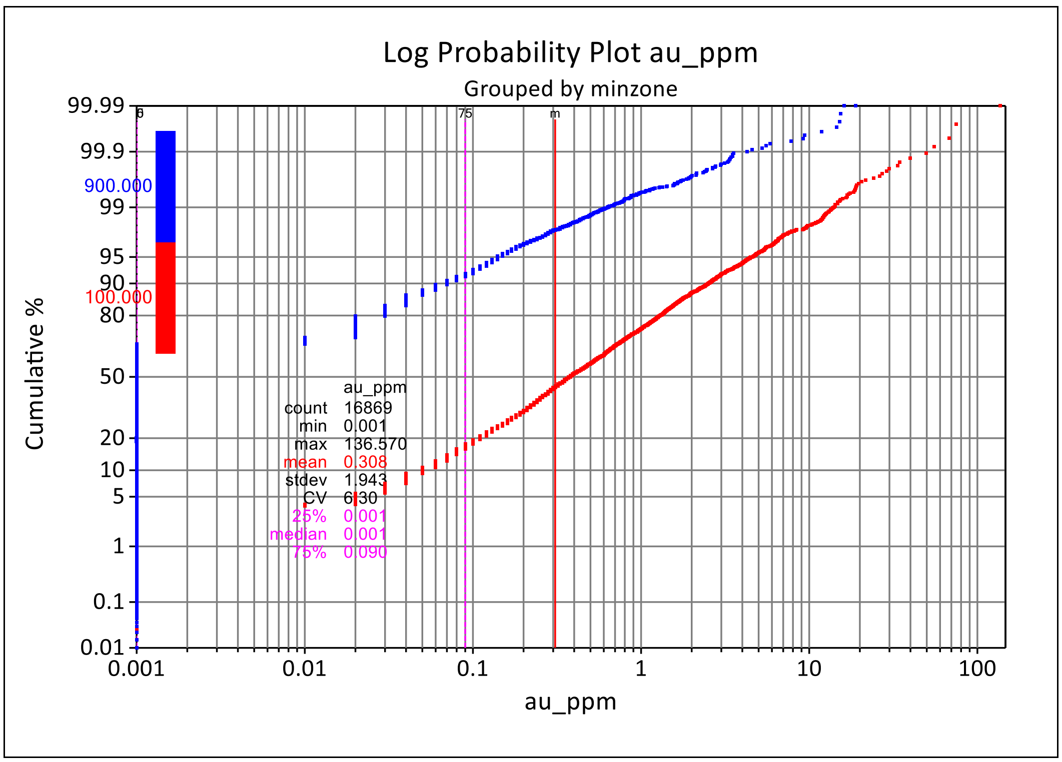


Figure 14-101 Log Probability Plot of Miradani Exploration Drillhole Assays Au Grade by Mineralization

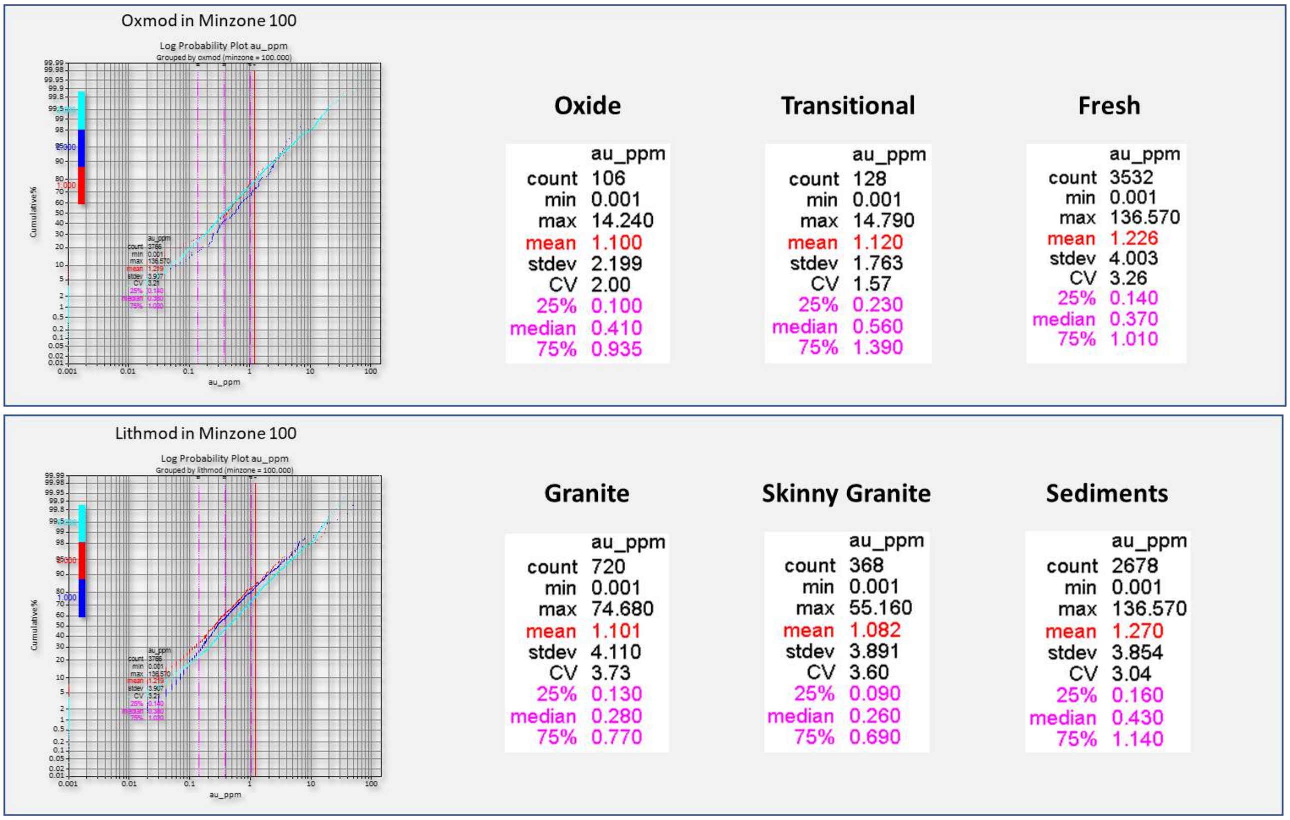


Figure 14-102 Log Probability Plot of Miradani Exploration Drillhole Assays Au Grade by Oxidation and Lithology Model Inside Minzone

14.6.3.1 Gold Grade Capping/Outlier Restrictions

Anomalous high grade Au assays are present in the drillhole samples, with maximum grade of 136.57 g/t in exploration drillholes.

The threshold grades are assessed by mineralization domains with histogram and log probability (disintegration) graphs of the drillhole assays (Figure 14-103), with consideration of reasonable metal loss and the general grade behaviour at the nearby mined deposits. Assays higher than the threshold grades are capped to the respective threshold grades for each domain. The comparison of sample statistics before and after top-cutting is presented in Table 14-61.

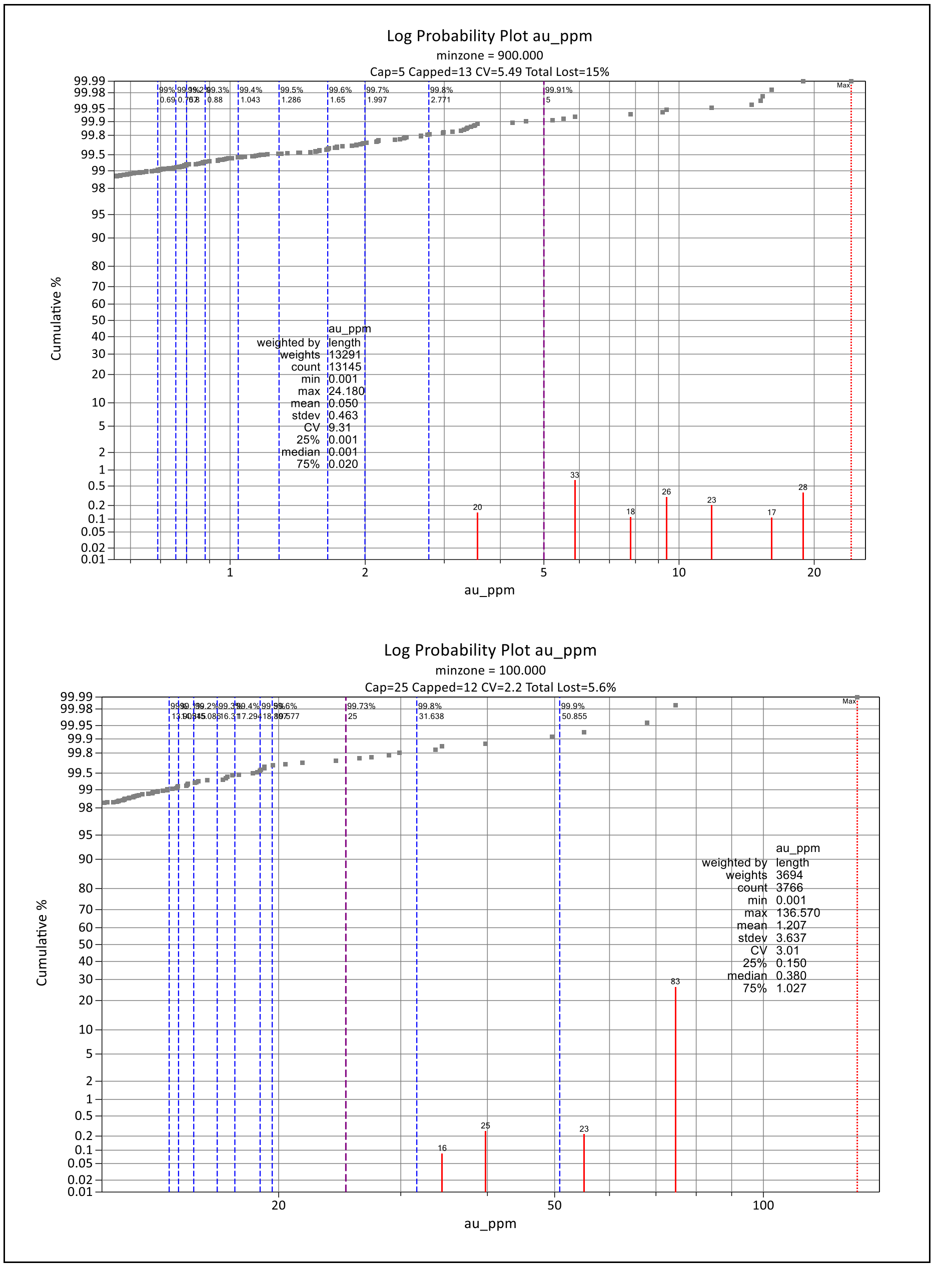


Figure 14-103 Top-cut Analysis of Miradani Exploration Drillholes Au Assays

Table 14-61 Raw and Top-Cut Assays Statistics of Miradani Exploration Drillholes

		Sample Assays Au Grade (g/t)					Top-cut Assays AUCUT (g/t)			
Domain	Count	Mean	CV	Maximum	Top-cut Au (g/t)	# Samples Cut	Mean	CV	Maximum	Metal loss
100	3,766	1.21	3.01	136.57	25	12	1.14	2.2	25	6%
900	13,145	0.05	9.31	24.18	5	13	0.04	5.49	5	16%

14.6.3.2 Composites

The dominant sample length is 1.0 metre for exploration drillhole samples. There is no obvious trend of grade distribution by the length of the samples.

The exploration drillhole samples are composited from collar to toe at 1.0 metre equal length intervals for uniform support. Residual of less than half of the composite length are added to the last full composite. The residuals are mostly present at the end of drillholes. Drillhole traces without sample or missing assays are ignored. The composites are coded by the mineralization domain wireframes (majority rule) and the statistics of drillhole composites are presented in Table 14-62 with comparison to the assay statistics. Assays are top cut prior to compositing and composite grade AUCUT was calculated from assays AUCUT.

Table 14-62 Composite Au Statistics of Miradani Exploration Drillholes

	Sample Assays Au Grade (g/t)				Composite 1.0m AUCUT (g/t)			
Domain	**Count**	**Mean**	**CV**	**Max**	**Count**	**Mean**	**CV**	**Max**
100	3,766	1.21	3.01	136.57	3,695	1.14	1.99	25
900	13,145	0.05	9.31	24.18	13,275	0.04	5.25	5

14.6.3.3 Boundary Analysis

The boundary condition between the mineralization, oxidation, and lithology was assessed through visual inspections and contact graph analysis. The grades show sharp contact between the mineralization domain and the non-mineralized background. Within the mineralization domain, the grades do not show distinct change across the lithology boundaries or oxidation boundaries (Figure 14-104).

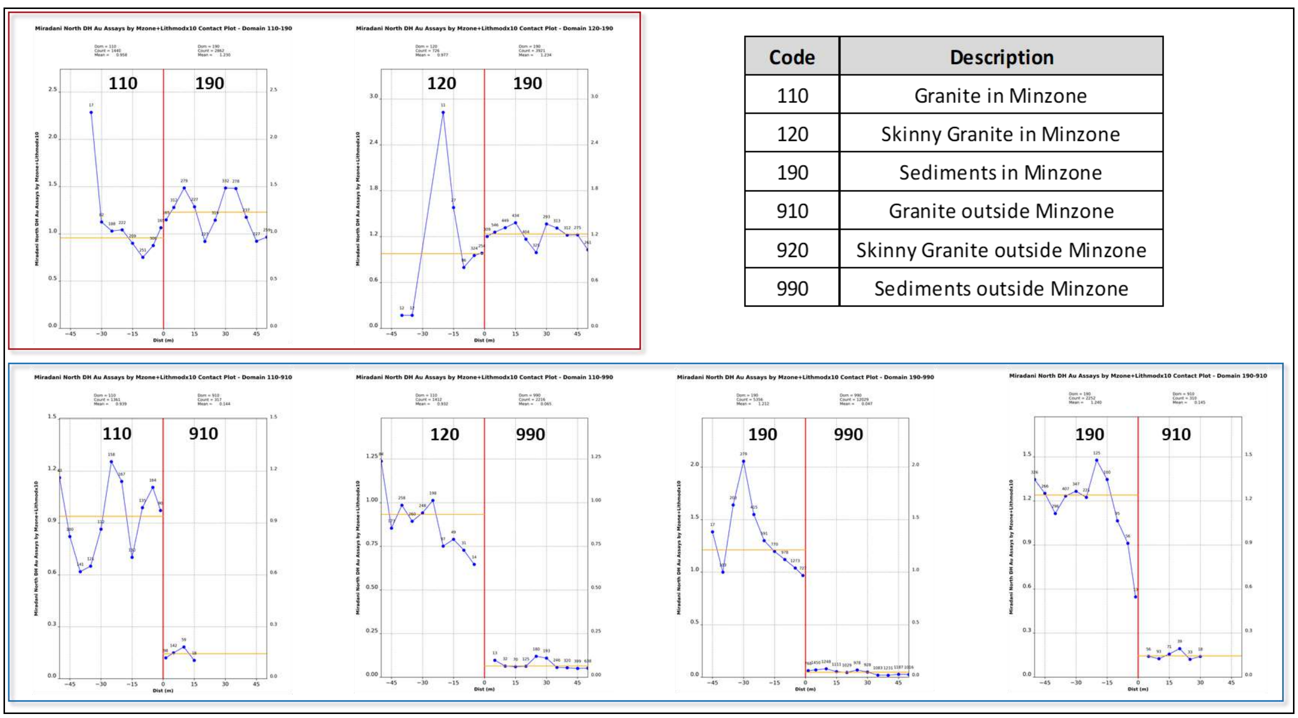


Figure 14-104 Contact Graphs of Drillhole Assays by Miradani Lithology and Mineralization Models

14.6.3.4 Declustering

Conditional simulation (Sequential Gaussian Simulation, or SGS) was used to model the main mineralization domain (100). Normal Score transformation of the Au grade is required for SGS process, which requires the de-clustered distribution of the composite Au grade for the domain in normal score transformation. Cell de-clustering method was used. Several de-clustering cell sizes are tested and the final cell size of 20x40x20 (m) are selected and applied, primarily based on the data spacing and review of mean vs. cell size graph (Figure 14-105). The de-clustered statistics are compared to raw composites and presented in Table 14-63.

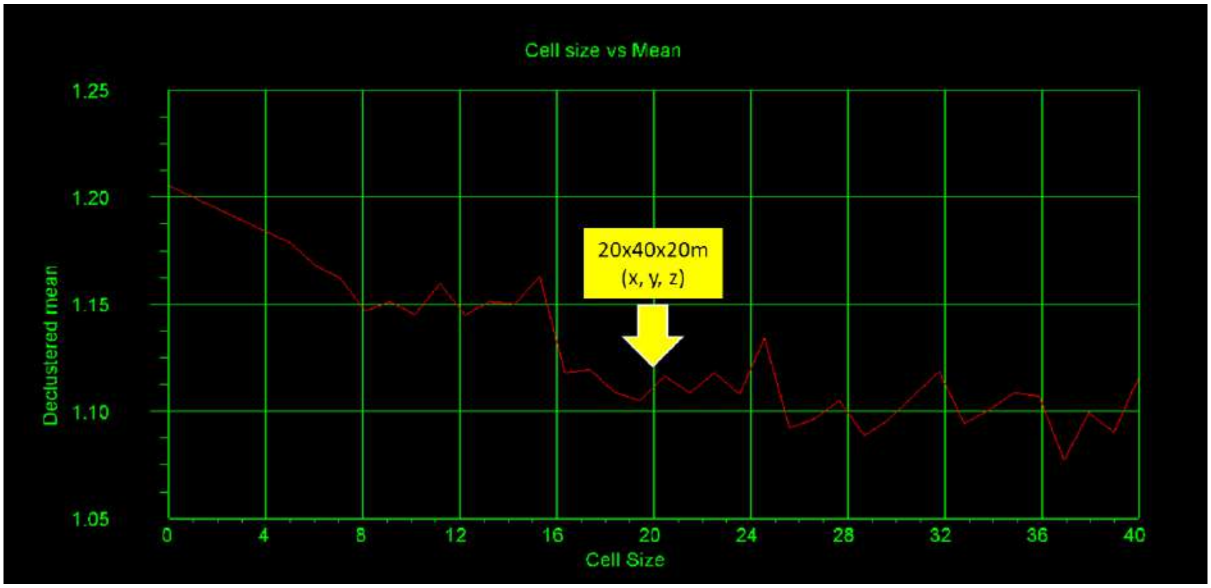


Figure 14-105 Cell De-clustered Miradani Exploration Drillhole Composites Au Mean vs. Cell Size

Table 14-63 De-clustered and Raw Miradani Exploration Drillhole Composite Au Statistics Comparison

	Composite 1.0m AUCUT					Composite 1.0m AUCUT (De-clustered)					
Domain	Count	Min	Max	Mean	CV	Count	Min	Max	Mean	CV	Metal loss
100	3,695	0.001	25	1.14	1.99	3,695	0.001	25	1.08	2	-5%

14.6.3.5 Variography

Variography was modelled for Mineralization Domain 100 only. The variogram was modelled in Gaussian space with the normal scores transformed from the de-clustered composite grades in real space. Correlograms are calculated and modelled with a two-structure exponential/spherical model using SAGE™ 2000 software. A robust variogram (correlogram) model was obtained for Domain 100 that matches well with the observed geology and trends of mineralization (Figure 14-106, Figure 14-107, and Table 14-64).

Miradani North DH 1m comp Au_NS Sample Variograms

Medsystem and Vulcan Rotation Conventions

Nugget ==> 0.200
C1 ==> 0.724
C2 ==> 0.076

First Structure -- Exponential with Practical Range

LH Rotation about the Z axis ==> 46		
RH Rotation about the X' axis ==> 19		
LH Rotation about the Y' axis ==> 129		
Range along the Z' axis ==> 3.9	Azimuth ==> 331	Dip ==> -36
Range along the Y' axis ==> 16.5	Azimuth ==> 46	Dip ==> 19
Range along the X' axis ==> 9.4	Azimuth ==> 293	Dip ==> 47

Second Structure -- Spherical

LH Rotation about the Z axis ==> 65		
RH Rotation about the X' axis ==> 80		
LH Rotation about the Y' axis ==> -28		
Range along the Z axis ==> 97.5	Azimuth ==> 216	Dip ==> 8
Range along the X' axis ==> 34.3	Azimuth ==> 127	Dip ==> -5
Range along the Y' axis ==> 43.3	Azimuth ==> 65	Dip ==> 80

Modeling Criteria

Minimum number pairs req'd ==> 300
Sample variogram points weighted by # pairs

Figure 14-106 Miradani Domain 100 Composite Au Normal Score Variogram (Correlogram) Parameters

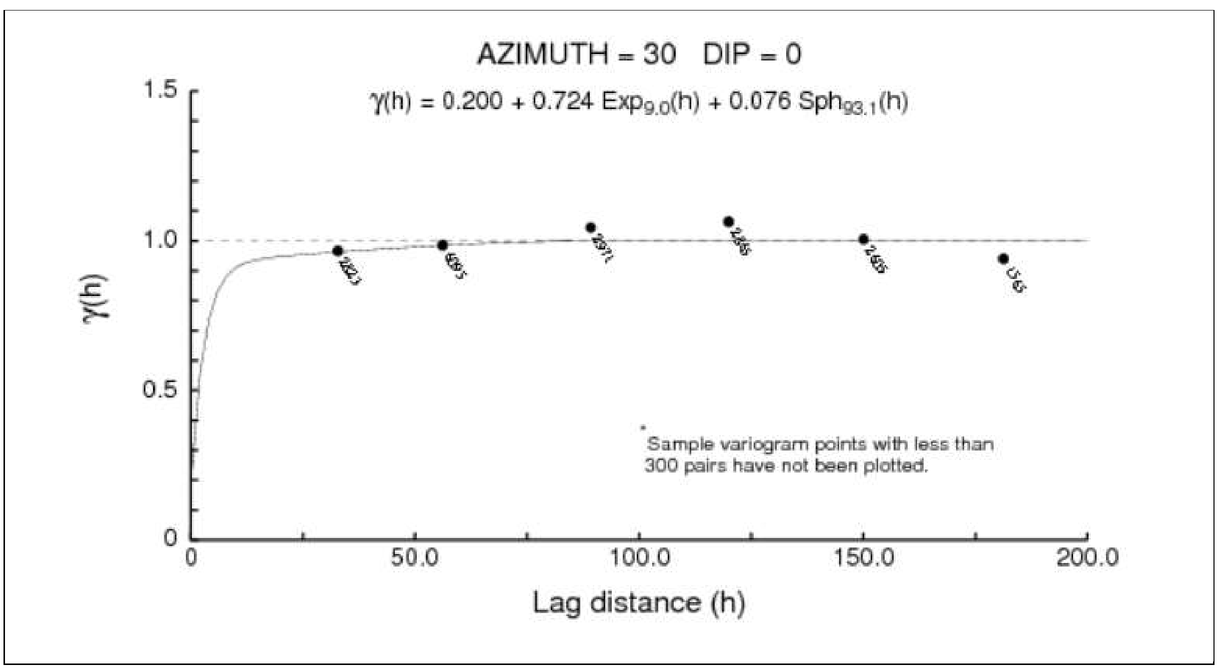


Figure 14-107 Miradani Domain 100 Drillhole Composite Au Normal Score Variogram (Correlogram)

Table 14-64 Miradani Domain 100 Composite Au Normal Score Variogram (Correlogram) Parameters

Domain	Type	Sill	Rotation Angles (Vulcan)			Ranges (m)		
			Azimuth	Plunge	Dip	Major	Semi	Minor
100	Nugget	0.2	-	-	-	-	-	-
	Exponential	0.724	46	19	129	16.5	9.4	3.9
	Spherical	0.076	65	80	-28	43.3	34.3	97.5

14.6.4 Estimation/Interpolation Methods

14.6.4.1 Block Model Setup

A block model was constructed in Vulcan software. The model covers the full extent of geology and mineralization models and provides adequate extent to allow pit optimization process. The block size, at 5 x 5 x 6 metres, is considered the SMU, smallest mining unit for Miradani North.

A large-scale panel (40 x 40 x 18 metres) was also set up for post-processing of the Domain 100 simulation to localize the simulated grades to the SMU blocks, each panel size being a multiple of the smaller SMU block size.

The block model setup dimensions are presented in Table 14-65 and Table 14-66.

Table 14-65 Miradani North 2021 Resource Model Setup

	Origin	Minimum	Maximum	Extent (m)	Block Size (m)	# Blocks
Easting	610400	610400	611700	1300	5	260
Northing	691250	691250	692500	1250	5	250
Elevation	-350	-350	202	552	6	92

Table 14-66 Miradani North Mineralization Domain 100 Simulation Model Setup

	Origin	Minimum	Maximum	Extent (m)	Block Size (m)	# Blocks
Easting	610905	610905	611230	325	1	325
Northing	691720	691720	692030	310	1	310
Elevation	-248	-248	160	408	1	408

The block model was coded with the geological model wireframes by majority rule as shown in Figure 14-108.

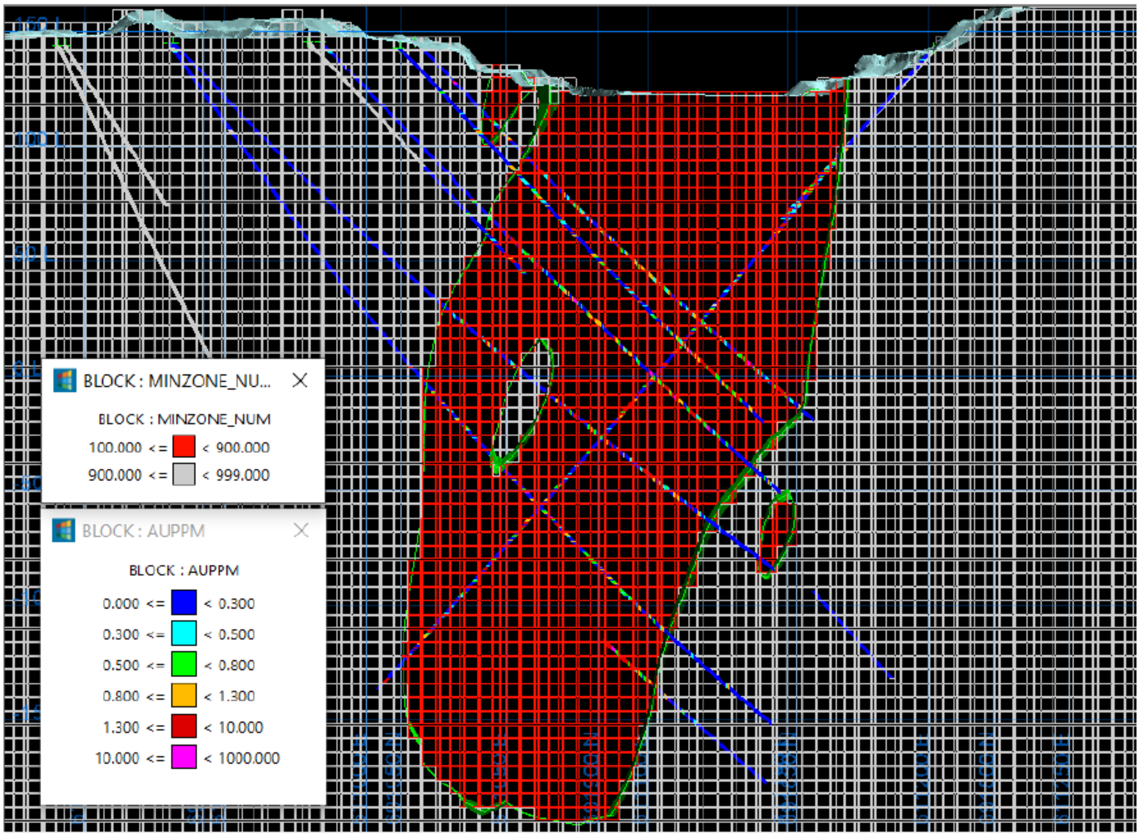


Figure 14-108 Vertical Sectional View of Miradani North Resource Block Model of Mineralization Domain

14.6.4.2 Estimation

Grade estimation for Miradani North used a combination of localized selective mining unit (LSMU) and Inverse Distance methods. The main mineralization domain (100) used LSMU, and the background domain (900) used Inverse Distance to power 3 (ID3).

LSMU Estimation

The grade estimation for Domain 100 was a localized, recoverable resource model with grades estimated at a SMU scale of 5 x 5 x 6 metres. The local metal distribution for the recoverable resource was estimated using conditional simulation. Basic workflow for LSMU model is as follows:

1. Point scale conditional simulation at 1 x1 x 1 metre scale (Sequential Gaussian Simulation)
2. Re-block each realization to SMU scale (5 x 5 x 6 metre)
3. Divide the domain into panels (40 x 40 x 18 metre)
4. Calculate the local metal distribution within each panel from SMUs for all realizations at a sequence of cut-off grades
5. Index the SMU blocks by ID3 estimates within each panel to represent a local grade distribution
6. Assign grades from the local distribution in increasing sequence to SMUs ranked by the indexed values (ID3 estimates).

The localisation is the same approach used for Localized Uniform Conditioning (LUC) which estimates localized SMU grades conforming to the proper grade–tonnage curves as well as maintaining the relative spatial grade distribution pattern indicated by the ID3 estimates. The applied estimation differs from Localized Uniform Conditioning (LUC) by obtaining the local distribution through conditional simulation rather than through uniform conditioning. This maintains the advantages of having a probabilistic conditional simulation model (multiple realization models) while providing a deterministic summary model (one grade per block) to be used for the reporting and optimisation processes.

A total of 50 simulation realizations were produced at 1 x 1 x 1 metre point scale support for Domain 100. Simulation was conducted using Simple Kriging in Gaussian space with normal score transformed composite grades and back-transformed to "real-space" grades with maximum limited to 25 g/t Au. The sample was assigned to the nearest grid nodes (block) and a maximum of 15 composites were allowed for estimation. Search parameters are listed in Table 14-67.

Table 14-67 Miradani Domain 100 SGS Search Parameters

		Search Ellipsoid					
		Radius (m)			Orientation (Vulcan)		
Modelling Method	**Domain**	**Major**	**Semi**	**Minor**	**Bearing**	**Plunge**	**Dip**
SGS	100	75	50	30	40	0	76

Each SGS realization was regularized to 5 x 5 x 6 metre SMU block size and each SMU block was also estimated a grade with ID3 method. The SMU blocks are then coded with the panel ID (each 40 x 40 x 18 metre panel was assigned a unique ID code) before being exported to csv block model file for post-processing.

The indexing and localization of block grades are completed in Microsoft™ Excel, PowerQuery and processed with DAX language. The localized block model file was then re-imported to Vulcan™ as the final grade model for Domain 100.

Inverse Distance (ID3) Estimation

The ID3 was used to produce the indexing values for Domain 100 SMU grade localization, and for grade estimation of Domain 900. Domain 100 was estimated in three-passes with the 3rd Pass using dynamic anisotropic search orientation that was estimated from two trend surfaces. Domain 900 was estimated in one pass. The ID3 search parameters are shown in Table 14-68. The ID3 search orientations are shown in Figure 14-109.

Table 14-68 Miradani Inverse Distance (ID3) Estimation Parameters

							Search Ellipsoid					
	Composite			DH		Octant	Radius (m)			Orientation (Vulcan)		
Est. Pass	**Min**	**Max**	**Max/h**	**MinDH**	**MaxDH**	**Max/Oct**	**Major**	**Semi**	**Minor**	**Bearing**	**Plunge**	**Dip**
ID3 / 100 P1	10	20	6	2	4	8	50	40	15	45	20	130
ID3 / 100 P2	10	20	6	2	4	8	100	80	30	45	20	130
ID3 / 100 P3	6	18	6	1	3	6	150	150	100	da (*)	0	da (*)
ID3 / 900	6	16	6	1	3	6	50	50	20	40	0	76

*Note: *da: dynamic anisotropic orientation calculated from two trend surfaces*

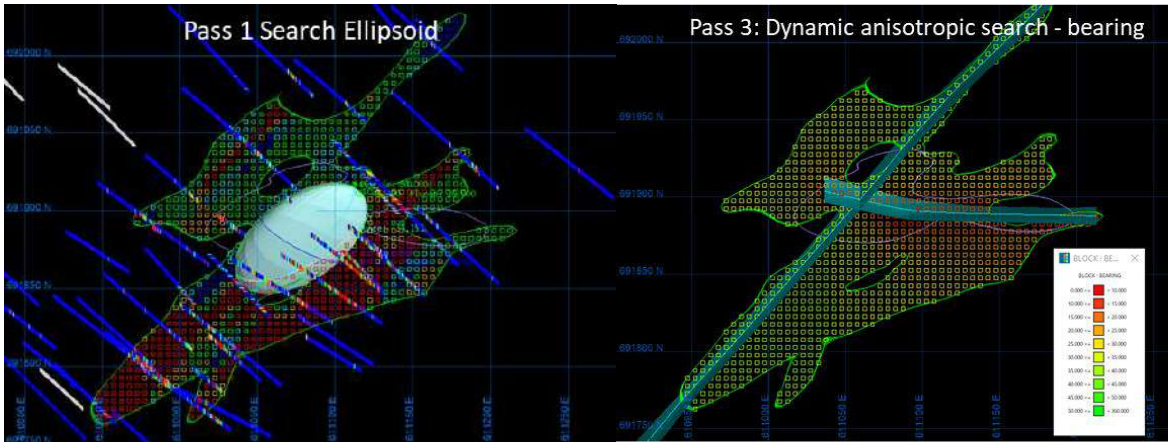


Figure 14-109 Illustration of Miradani ID3 Estimation Search Orientations

14.6.4.3 Bulk Density

Bulk density was assigned to the block model based on a combination of lithology and oxidation. The Fresh zone granite and sedimentary rock bulk density values are calculated from a total of 187 measurements of drill core samples representing the various lithology types. The calculated average bulk density values for different lithology types in fresh zone are in line with the that of adjacent deposits and are used to assign densities to block model. There was no sample taken for density measurement from oxide or transitional zones at Miradani North. After consultation with the Asanko Exploration team and review of the bulk densities of similar material types at adjacent deposits, it was considered appropriate to use the oxide and transitional densities at Nkran for Miradani North. Densities assigned to the block model are shown in Table 14-69.

Table 14-69 Miradani Bulk Density Values Assigned to Resource Block Model (by Material Type)

Material Type	Bulk Density (t/m^3)
Oxide	1.69
Transitional	2.10
Fresh - Granite	2.64
Fresh - Sediments	2.68

14.6.5 Validation

Validation of the block model included the validation of simulation model of the main mineralization domain, statistical comparison of the model and input data, visual inspection.

14.6.5.1 Validation of Simulation

The simulation was validated at point scale. The point scale realizations reasonably reproduced the statistics of input composites (Figure 14-110 and Figure 14-111). The visual inspection of select realizations in 2D and 3D also show reasonable reproduction of the orientation and ranges of input variogram (Figure 14-112).

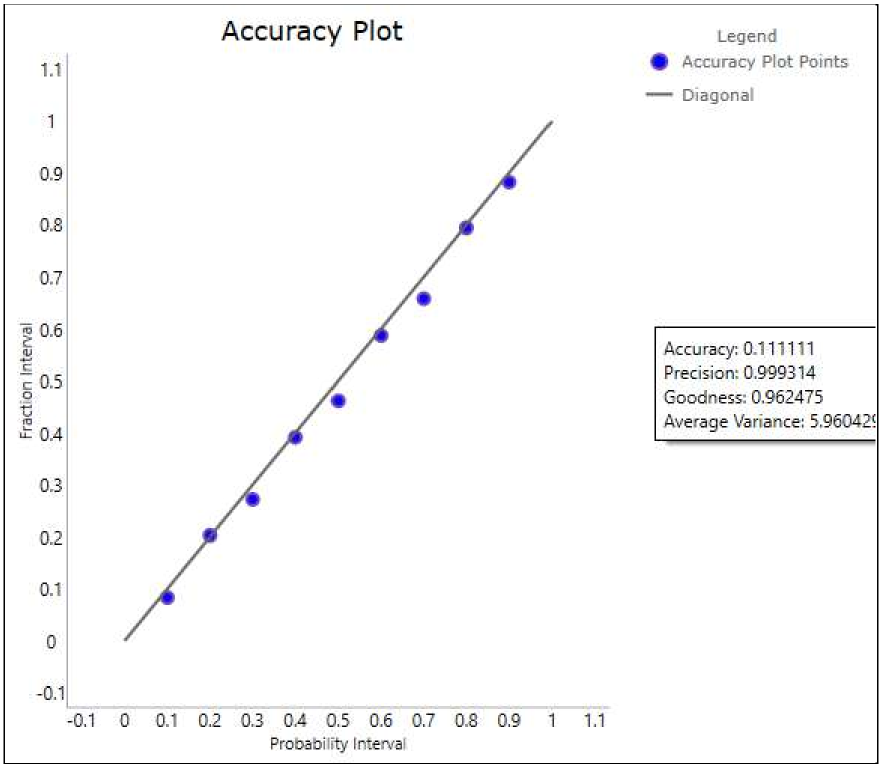


Figure 14-110 Miradani Accuracy Plot of 50 SGS Realizations

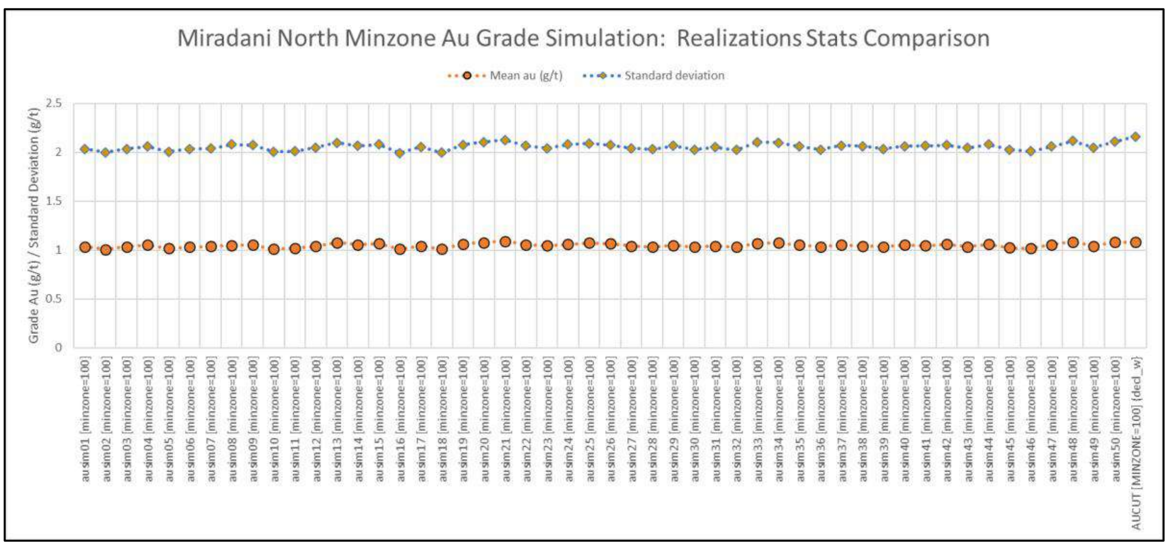
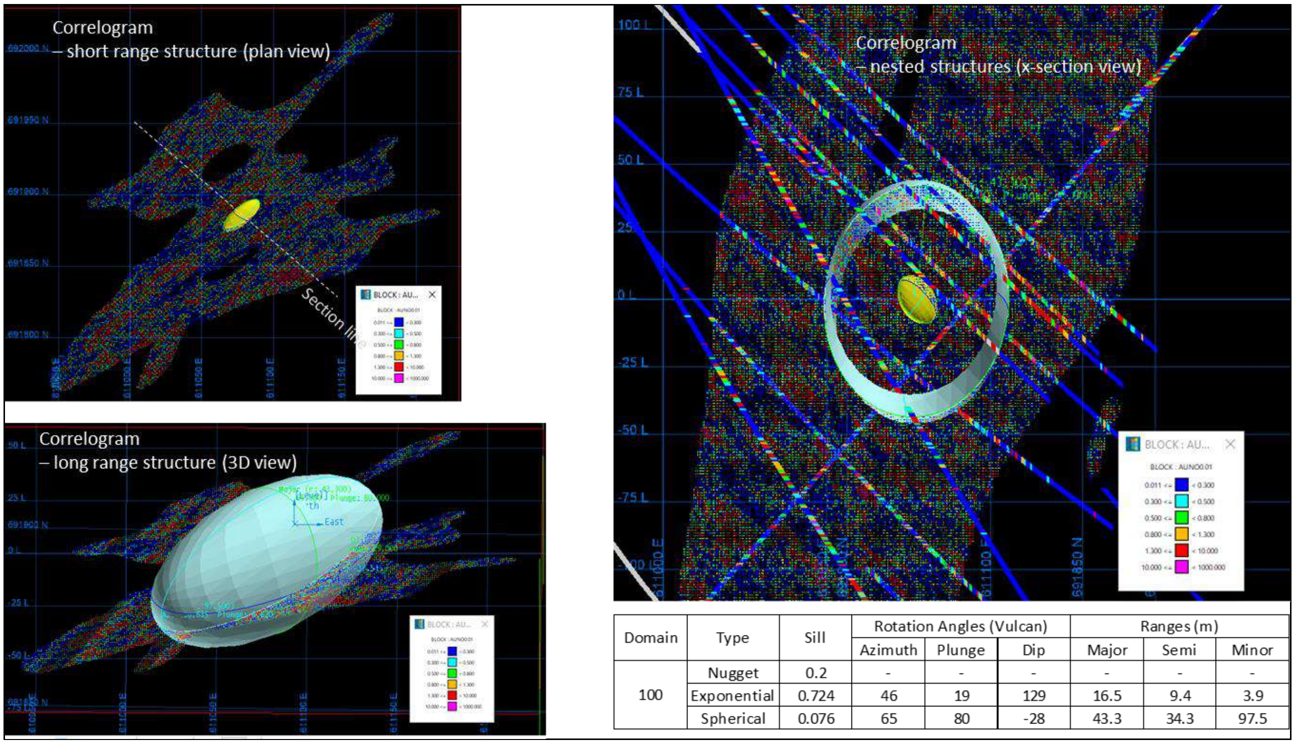


Figure 14-111 Miradani Statistical Comparison of SGS Realizations and Input Composites



Domain	Type	Sill	Rotation Angles (Vulcan)			Ranges (m)		
			Azimuth	Plunge	Dip	Major	Semi	Minor
100	Nugget	0.2	-	-	-	-	-	-
	Exponential	0.724	46	19	129	16.5	9.4	3.9
	Spherical	0.076	65	80	-28	43.3	34.3	97.5

Figure 14-112 Miradani SGS Realization ausim03 Au Grade Compared to Variogram Model

14.6.5.2 Swath Plots and Global Statistical Comparisons

Swath plots were created by comparing the model block grades and input in spatial increments in northing, easting, and elevation slices throughout the deposit (Figure 14-113). The plots show that block grades (Indicated) are smoother and follow the trend of input composite grades, which is the expected result of estimation, with block grades showing lower overall variance.

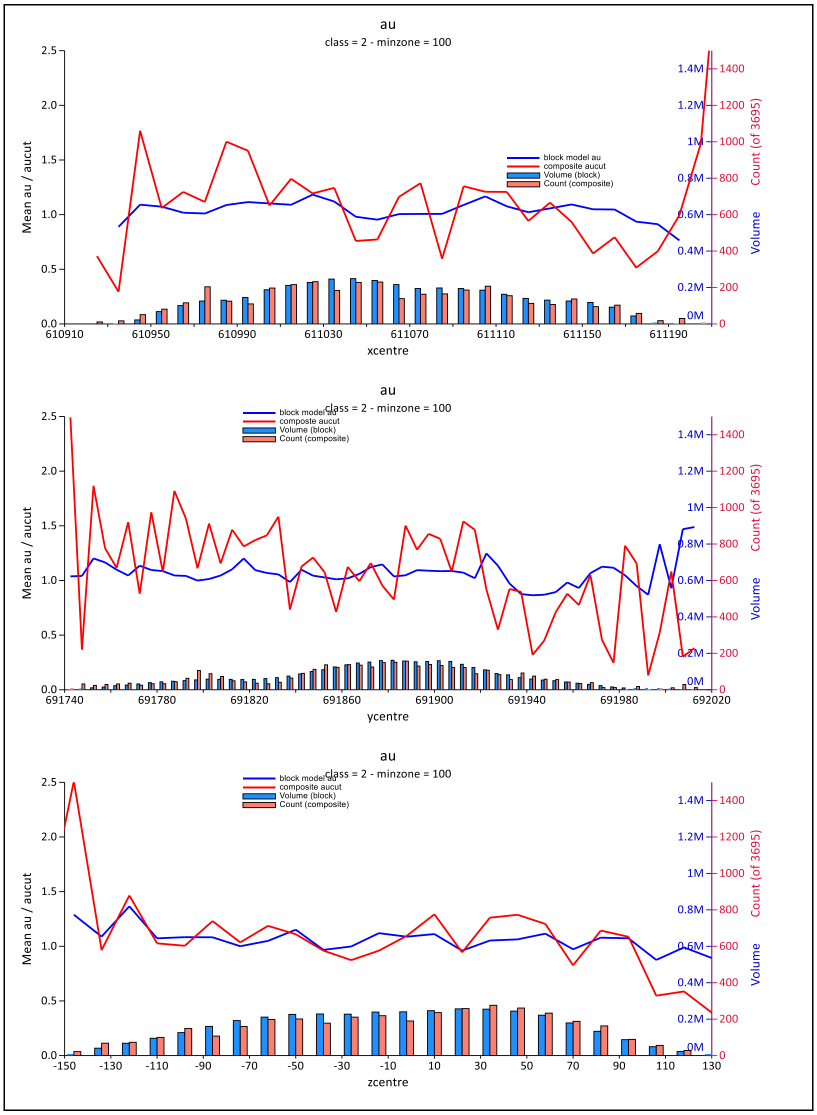


Figure 14-113 Miradani Swath Plot by Easting, Northing, and Elevation for Block and Composite Au (g/t) for Domain 100 Indicated Class

The global statistics of the model Au grade also compared well with composite Au grade and ID3 estimates, with the difference of the mean grade within 5% (Table 14-70).

Table 14-70 Global Statistics Comparison of Miradani North Resource Model, Composites, and ID3 Estimate

Domain	Variable		Count	Mean	CV	Minimum	Maximum
100	Composite	CMP_AUCUT (decl_wt)	3,695	1.08	2.00	0.001	25.00
	Resource Model	AU (Class 2)	25,103	1.06	0.76	0.091	6.21
		AU (Class 2+3)	43,179	1.04	0.75	0.091	6.21
	Model_ID3	AUID (Class 2)	25,103	1.12	0.81	0.002	11.61
		AUID (Class 2+3)	43,179	1.06	0.78	0.002	11.61
900	Composite	CMP_AUCUT	13,275	0.04	5.25	0.001	5.00
	Resource Model	AU (Class 2)	78,946	0.04	2.36	0.001	3.37
		AU (Class 2+3)	239,735	0.04	2.92	0.001	3.37

14.6.5.3 Visual Inspection

The block model was visually reviewed in 2D in sections and level plans, and in 3D to ensure the block estimates are supported by the surrounding composites. In general, the estimates compare well with the input data.

14.6.5.4 Comparison with ID3 Estimates

The LSMU estimates were compared with ID3 estimates in tonnage-grade graphs to ensure that the simulation-based LSMU estimates are supported by alternative conventional method (Figure 14-114).

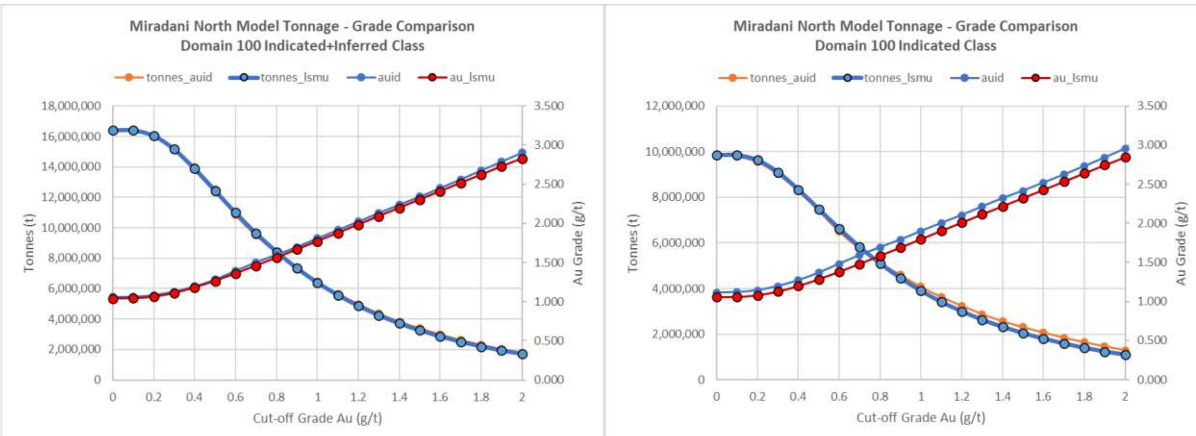


Figure 14-114 Miradani Tonnage-Grade Comparison of LSMU and ID3 Estimates in Domain 100

14.6.6 Classification of Mineral Resources

Miradani North deposit shares the common geological features as other well studied deposits on the Nkran structural trend. The control of mineralization is well understood through the three campaigns of exploration drilling by Asanko.

Drill spacing is the primary factor to define resource classification and only Indicated and Inferred resources are defined at Miradani North. The spacing criteria to separate the resource classes are based on the variogram ranges, quantitative assessment of resource uncertainty, and experiences of mining at adjacent deposits in similar geological settings.

A quantitative uncertainty assessment was conducted with the simulation model of Mineralization Domain (100) and the derived criteria for classification was used for Domain 100 and 900. The results of the assessment supported the use of 45-metre drillhole spacing to define Indicated Resource Class. The Inferred class required 80-metre spacing, which was primarily based on the maximum variogram ranges.

Nominal drill spacing is determined with a widely accepted mathematic approximation based on calculated average distance of the closest three drillholes to the block (Table 14-71). The final classification of the block model and 3-hole average distance is illustrated in Figure 14-115 and Figure 14-116.

Table 14-71 Miradani North 2021 Resource Classification Criteria

Classification Category	Drill Spacing (m)	3-Hole Average Distance (m)
Measured (1)	No Measured classification defined	-
Indicated (2)	45 x 45 (m) drill spacing (Domain 100)	<= 31.82
Inferred (3)	80 x 80 (metre) drill spacing, or nearest DH < 60 metre distance	<= 56.58

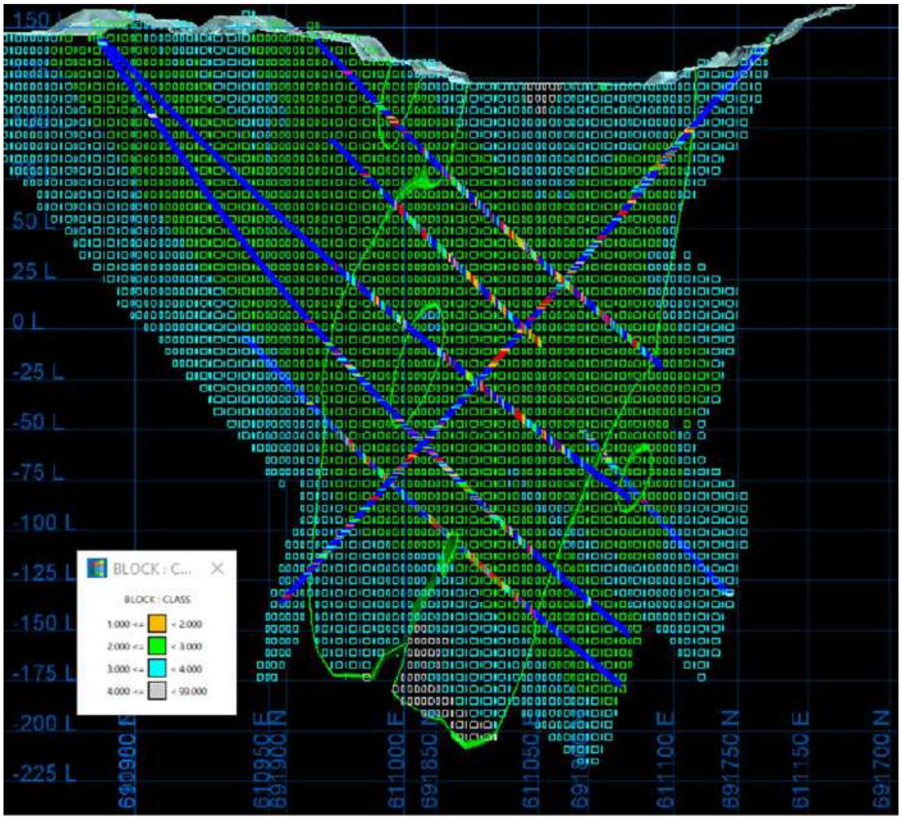


Figure 14-115 Illustration of Miradani North 2021 Resource Classification

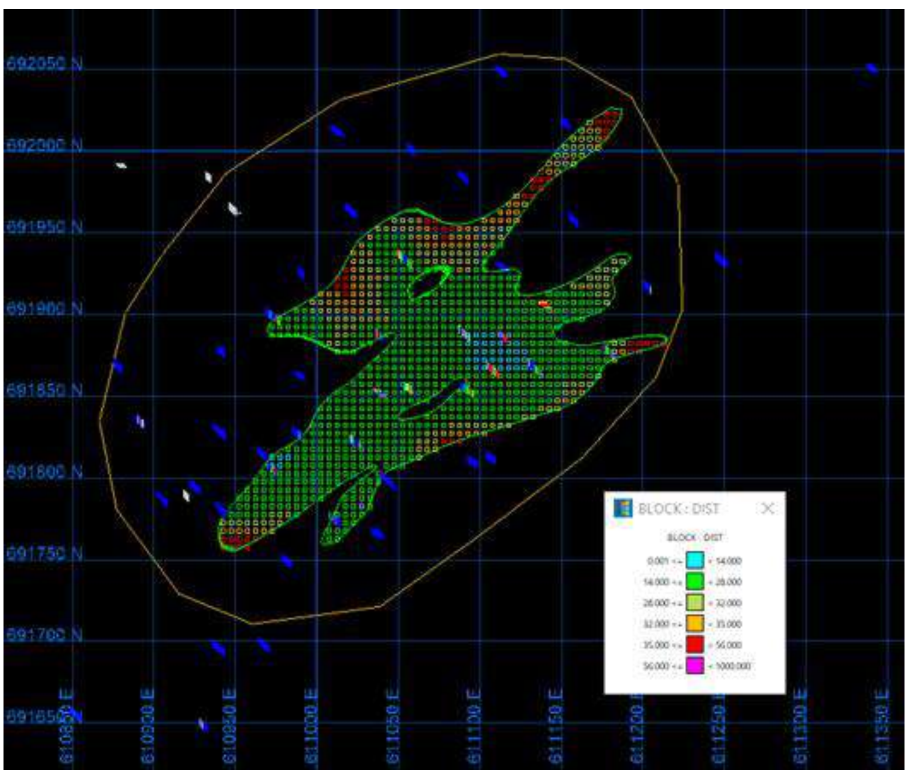


Figure 14-116 Miradani Plan View of Blocks Coloured by 3-Hole Average Distance to Block Centroids

14.6.7 Reasonable Prospect of Eventual Economic Extraction

The Miradani mineralization is assumed amenable to open pit mining and milling and recovery through CIL gold processing. The reasonable prospect for eventual economic extraction of the Mineral Resources was tested by constraining the Mineral Resources within a conceptual pit shell optimized in NPV Scheduler™ software at US$1,600/oz gold price with all the materials of Indicated and Inferred classes and with a reporting cut-off grade of 0.5 g/t Au. The conceptual constraining parameters are listed in Table 14-72. *See "Cautionary Note about Mineral Resources".*

Table 14-72 Miradani North Conceptual Pit Parameters

Parameter	Value
Gold Price (US$/ounce)	1,600
Mining Cost (US$/tonne)	1.025 - 1.647
Mining Cost Incremental (US$/Vertical 6m)	0.0087 – 0.0353
Mill Feed Transport (US$/tonne)	2.86
Process Cost (US$/tonne)	8.79 – 11.32
Gold Recovery (%)	94%
General and Administration (US$/tonne)	6.55

14.6.8 Mineral Resource Statement

The Miradani Mineral Resource estimate is reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.

The Qualified Person is Eric Chen, P.Geo. who is Galiano Gold's former Vice President of Technical Services. The effective date is February 28, 2022. The Mineral Resource estimate is reported assuming open pit mining and milling and CIL gold processing methods using a cut-off grade of 0.5 g/t Au, is constrained within a conceptual open pit prepared using NPV Scheduler™ software. The Mineral Resource estimates are summarized in Table 14-73. The estimated grades and tonnages for multiple cut-offs are shown in Figure 14-117.

Table 14-73 Miradani North Mineral Resource Estimate at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

Category	Cutoff Grade (g/t Au)	Tonnes (kt)	Au (g/t)	Au Metal Contained (koz)
Measured	na	na	na	na
Indicated	0.5	7,116	1.28	293
Measured & Indicated	0.5	7,116	1.28	293
Inferred	0.5	2,615	1.21	102

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion as of February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software using several technical parameters including:*
    a. *$1,600/oz Au price*
    b. *$1.025/t to $1.647/t mining costs*
    c. *$2.86/t mill feed transport costs*
    d. *$8.79/t to $11.32/t processing costs*
    e. *94% Au recovery for all material*
    f. *$6.55/t G&A*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

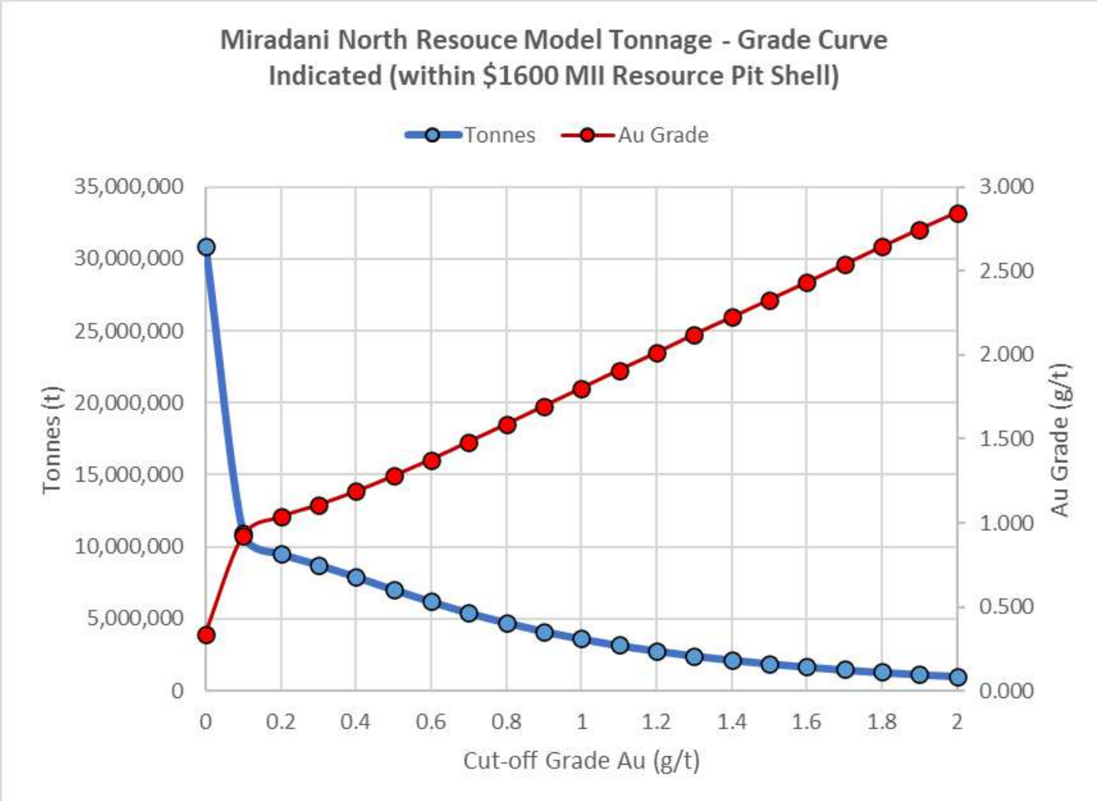


Figure 14-117 Miradani North Tonnage - Grade Curve for Indicated Mineral Resources

14.6.9 Factors That May Affect the Mineral Resource Estimate

Other than as discussed in other sections of this report there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the Mineral Resource estimates. Other relevant factors that may materially affect the Mineral Resources, including mining, metallurgical recovery, and infrastructure are reasonably well understood according to the assumptions presented in this Report.

The current Mineral Resource estimation carries small to moderate uncertainty and risk. The shallow dipping higher grade structures developed within the general mineralized envelope based on the current geological/structural interpretations were confirmed by the spatial continuity analysis of the drillhole sample grades. But some drill holes have been drilled in azimuth and dip angles not optimal to fully define those smaller structures. There is uncertainty in the actual number and extent of those structures which require some additional drilling to confirm before mining takes place.

The depth of the previous mining was based on the best estimate as it is now covered in water, which may result in small uncertainty of the amount of in-situ mineralized material still remaining near the surface.

14.7 Asuadai Mineral Resource Estimate

The Asuadai Mineral Resource was last updated by Mr. Shaun Hackett of Gold Fields and reported in 2020 NI 43-101 Technical Report. The QP has reviewed this estimate and is satisfied that the work was conducted at an acceptable level for the reporting of Mineral Resources according to CIM (2014) and the NI 43-101. No mining or additional drilling has been carried out at Asuadai since 2014.

14.7.1 Database

There are 59 diamond drill holes used for the modelling project. Four drillholes are excluded as they did not contain sufficient information in the primary tables. There are 77 reverse circulation drillholes used for the modelling project. The supplied files also included information on diamond drillholes and rotary air blast percussion holes that are excluded as it was supplied in other files and the RAB drillhole data was excluded as it is a poor-quality drilling method. Additionally, RC holes outside of the modelling area also in the supplied data are excluded.

14.7.1.1 Validation of Exploration Data

Leapfrog data validation tools were used to identify errors and warnings in the drill hole database. All errors and warnings were addresses in the primary files. For the secondary files all errors were eliminated but some warnings remain. Warnings do not affect Leapfrogs use of these drill holes.

Collar elevations were compared to the topographic surface. The majority of the drillholes are within 1 metre of the topo. All drillhole collars were subsequently pressed to the current topographic surface for modelling.

The drillhole database was compared to the Datamine Studio drillhole filed used for the 2014 estimate. Holes were checked for availability. Three RC holes were found in the 2014 Datamine file that were not available in the current drillhole database. These holes were extracted and added to the current project drillhole file in Datamine for grade modelling. These holes could not be added for the geological modelling in Leapfrog as they were only available in a desurveyed format and did not have the component collar, survey and interval data required for loading into Leapfrog.

14.7.2 Geological Models

Mineralization is hosted within an east-northeast trending shear zone which cuts through sediment packages and is also found parallel to bedding within wacke/sandstones on the southeast footwall side and wacke/siltstones on the northeast hanging wall side. Diorite dykes have intruded along the central lithological contact of the shear. Sub-parallel to this central contact are hanging wall and footwall extents of the shear zone.

A series of repeating north-south trending structures cross the shear zone, offsetting the main lithological contact and the hanging wall shear contact. Each of the diorite bodies appears to be bracketed by a pair of these north-south structures. These structures are not evident on the magnetic images due to their orientation and the low magnetic contrast in the host lithologies (Figure 14-118).

The geological model builds on the observations and concepts modelled by HMM Consultancy in 2014. The geological model was constructed using Leapfrog Geo and was built in four parts:

1. Lithology model (GROCK)
2. Structural model (Interpreted structural planes)
3. Mineralization model (MDOM)
4. Material Type model (MROCK)

14.7.2.1 Lithology, Structure, and Material Type Models

The lithology, structure, and material type models were initially interpreted from the diamond drill holes. These models, along with the mineralization model, were updated to account for the mineralization intersected in the RC drill holes. The lithology and structural models are shown fin Figure 14-118.

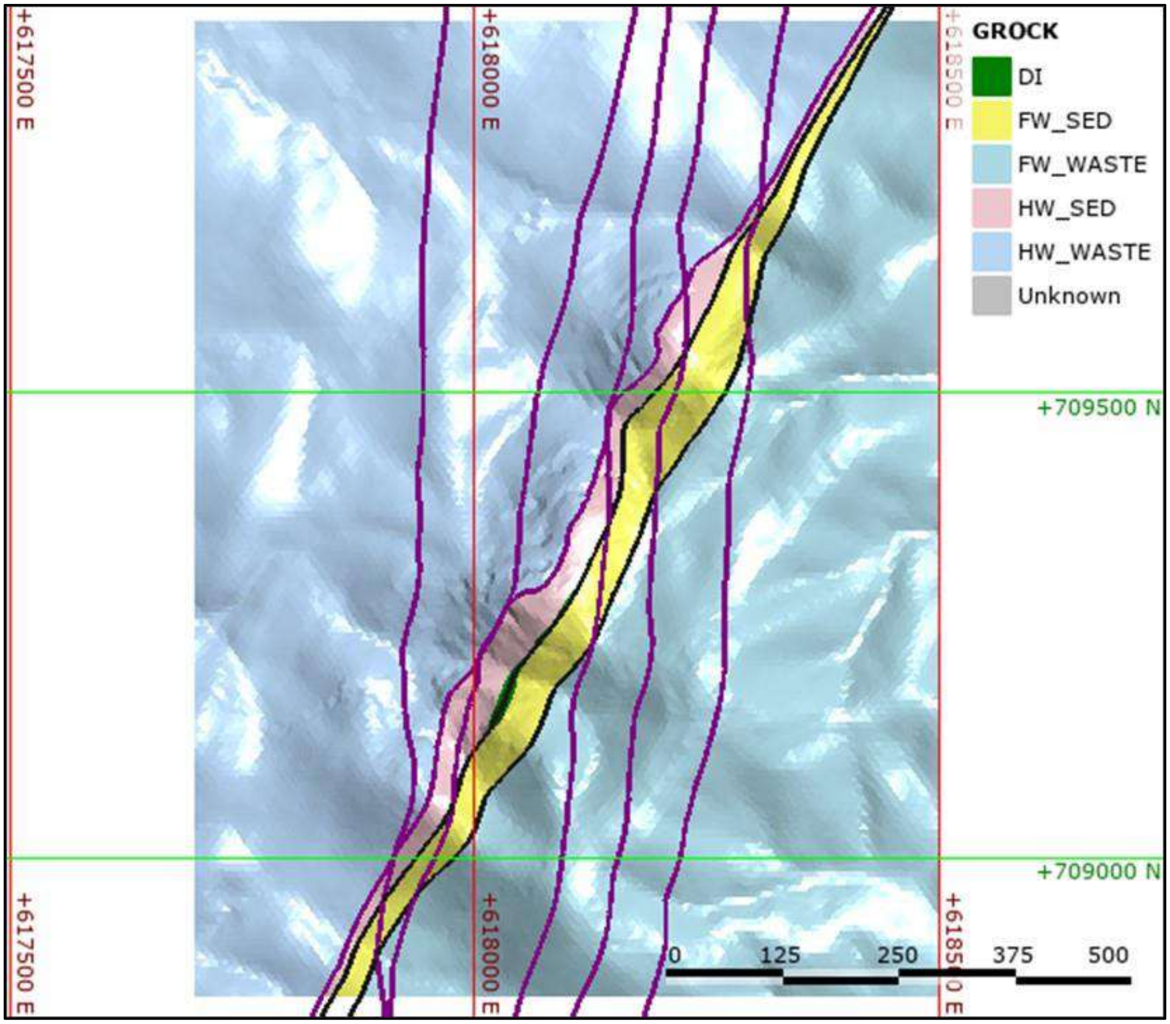


Figure 14-118 Asuadai Lithological and Structural Models

The material type represents different levels of weathering for material movement purposes. A simple weathering model was constructed from the diamond drill hole logged for the base of complete oxidation (BOCO) and the top of fresh rock (TOFR). The model divided weathering into Oxide (strongly to moderately oxidized), Transitional (weakly oxidized) and Fresh (fresh rock) material types. Away from the drilling the thickness of weathering was maintained parallel to topography. The weathering model was deemed to be suitable for assessing simple mineral process flow sheets but may not be sufficiently detailed for complicated processing assessments.

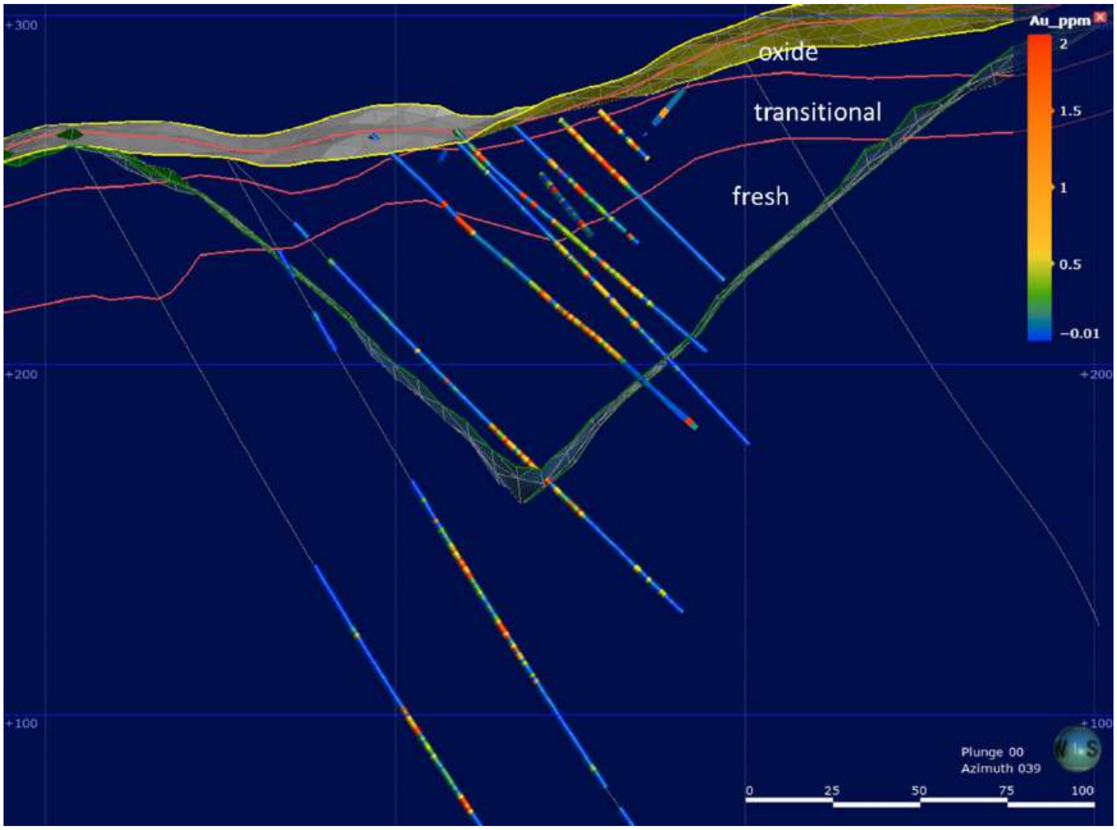
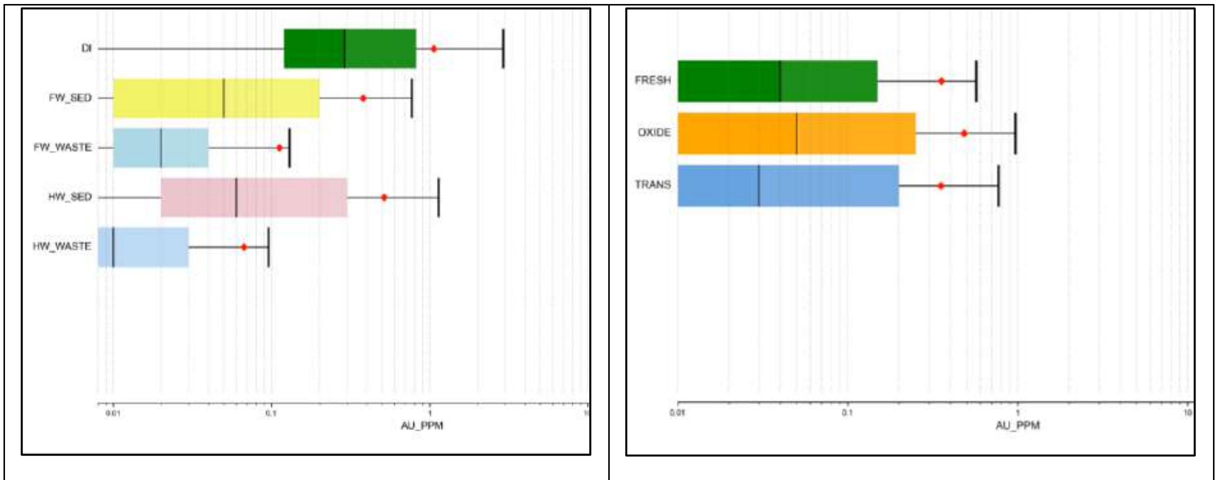


Figure 14-119 Asuadai Material Type Models

14.7.2.2 Mineralization Model

HMM Consultancy observed two generations of mineralization in 2014 (Dusci & Davies, 2014), an earlier, steep, ductile-type mineralization, parallel to bedding and foliation and a later set of shallow dipping quartz veins. They considered that the shallow set of veins represented the dominant mineralization and were best developed within the diorite bodies. They also noted an increase in sheer intensity and mineralization in the sediments adjacent to the diorite contact. This observation is consistent with Asanko Gold's Dynamite Hill deposit where increased intensity of shearing adjacent to the granite contacts is observed in the pit. They interpreted a moderate plunge to the mineralization towards the southwest at the intersection between the northeast–southwest main shear and the north-south crosscutting structures. This is different to other deposits in the area which dominantly show a northerly plunge to mineralization.

To guide the mineralization modelling a preliminary analysis was undertaken on the raw grades within the modelled lithologies and material types. This confirmed that the diorite (DI) hosts the higher-grade material and that there is only a small difference between the sediment units (FW_SED, HW_SED) within the main shear. The oxide appeared to be slightly higher-grade than the transitional and fresh material (Figure 14-120).



Grade Analysis by Lithology	Grade Analysis by Weathering

Figure 14-120 Asuadai Preliminary Grade Analysis

For the mineralization model, the main shear was split into fault blocks along strike between the north-south structures (FB1 to FB6) and a wireframe was constructed adjacent to the diorite contact capturing the higher shear intensity mineralization in the sediments close to the diorite contact (DI shear) (Figure 14-121).

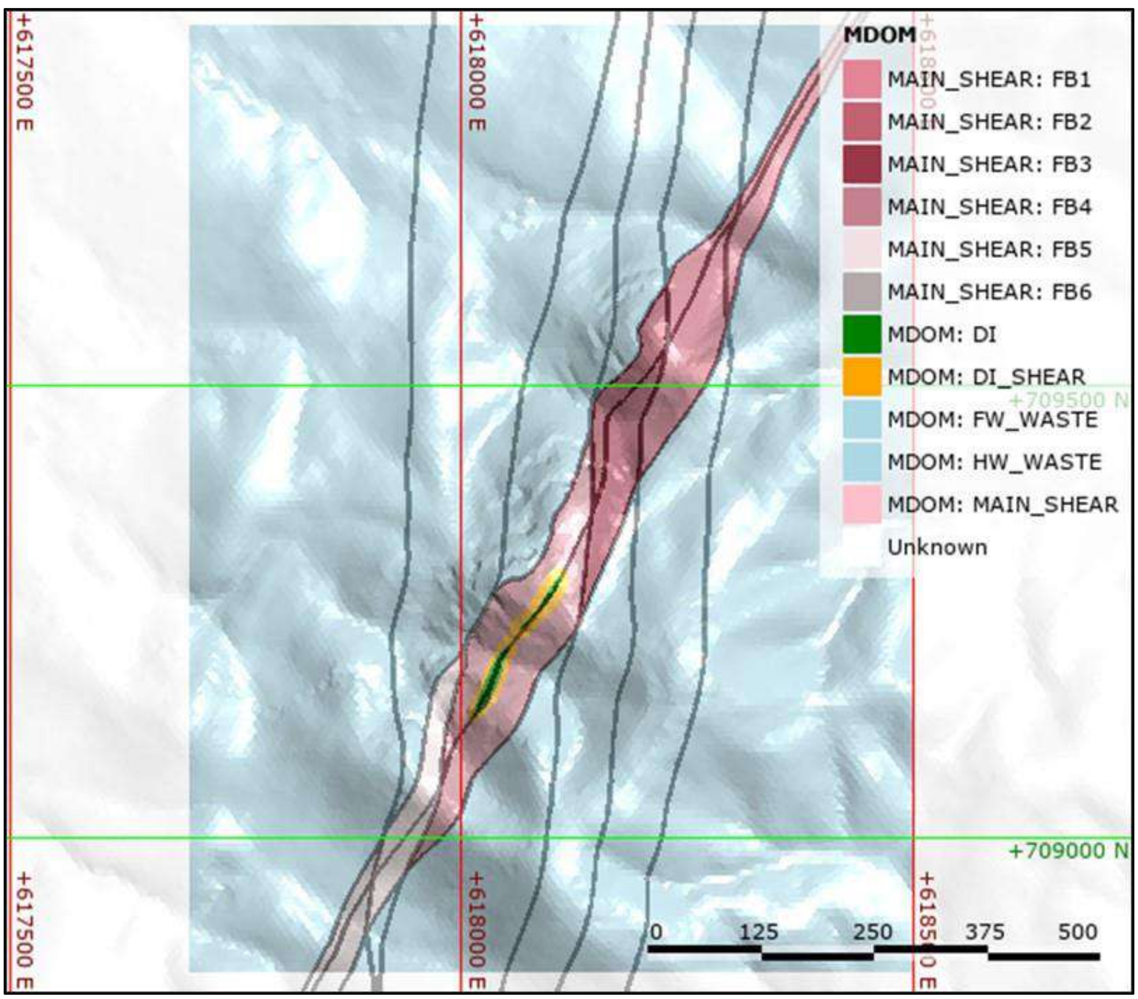


Figure 14-121 Asuadai Mineralization Model

A secondary grade analysis was undertaken to assess the impact of the mineralization domains. This showed a clear variation in grade between the different fault blocks within the main shear and confirmed the higher-grade mineralization in the sediments adjacent to the diorite contact (Figure 14-122).

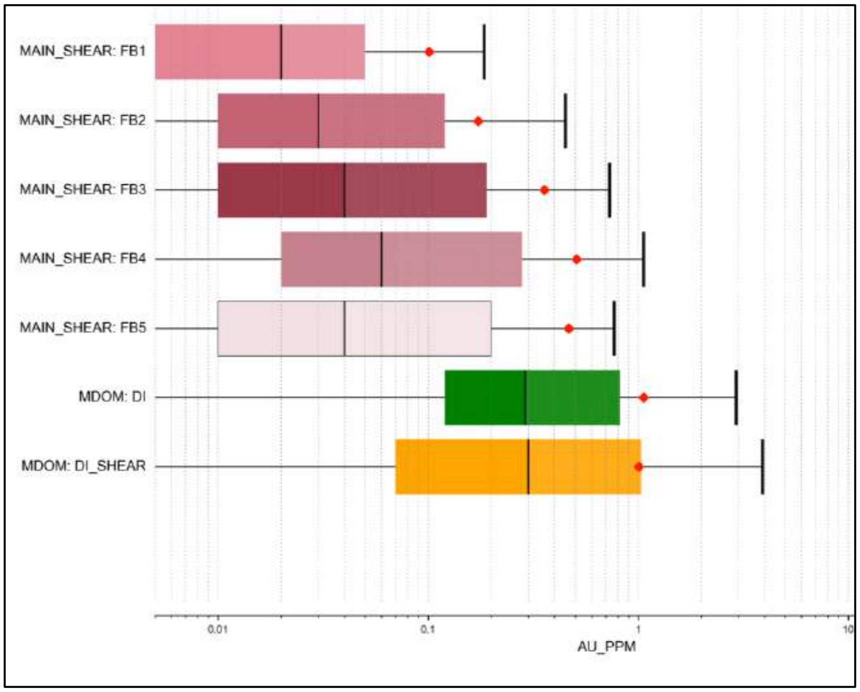


Figure 14-122 Asuadai Secondary Grade Analysis

Many of the geological concepts observed and modelled by HMM Consultancy in 2014 were supported by the relogging exercise and were incorporated into the updated model. The geological models are therefore similar. In the current model the diorites were modelled as two discreet bodies as opposed to a continuous dyke as was modelled in 2014. The relogging programme did not support the 2014 modelled phyllite/shale units and these were updated as structural contacts rather than lithological units. The footwall contact to the main shear has been introduced. The new material type model is smoother and slightly deeper for the oxides compared to 2014.

All domains are summarized in Table 14-74.

Table 14-74 Asuadai Mineralized Domains

Leapfrog Output file	Datamine Wireframe File	Datamine Mode
Topographic model		
TOPO	TOPO	1
Lithological model		
GROCK - DI	LITH	10
GROCK - HW_SED	LITH	22
GROCK - FW_SED	LITH	21
GROCK - HW_WASTE	LITH	32
GROCK - FW_WASTE	LITH	31
Structural model		
NS12	STRUC	1
NS23	STRUC	2
NS34	STRUC	3
NS45	STRUC	4
NS56	STRUC	5
STRUCTURE_FW	STRUC	6
STRUCTURE_HW	STRUC	7
MAIN_SED_CONTACT	STRUC	8
Material type model		
MROCK - OXIDE	MROCK	2
MROCK - TRANS	MROCK	3
MROCK - FRESH	MROCK	4
Mineralization model		
MDOM - MDOM_DI	DOMAIN	100
MDOM - MDOM_DI_SHEAR	DOMAIN	200
MDOM - MAIN_SHEAR_FB1	DOMAIN	301
MDOM - MAIN_SHEAR_FB2	DOMAIN	302
MDOM - MAIN_SHEAR_FB3	DOMAIN	303
MDOM - MAIN_SHEAR_FB4	DOMAIN	304
MDOM - MAIN_SHEAR_FB5	DOMAIN	305
MDOM - MAIN_SHEAR_FB6	DOMAIN	306
MDOM - MDOM_FW_WASTE	DOMAIN	901
MDOM - MDOM_HW_WASTE	DOMAIN	902
Ancillary wireframes		
Main_Shear_0.3g_Ind - Min	SUBDOM	10
DH_ALL - DH_10m	DHSPACE	10
DH_ALL - DH_20m	DHSPACE	20
DH_ALL - DH_40m	DHSPACE	40

14.7.3 Exploration Data Analysis

Statistical analysis was carried out using Snowden Supervisor version 8.8. The domains are a combination of lithology, material type and fault blocks.

In the main shear sediments, transitional and fresh material was found to have a similar grade distribution while there is a bias towards the oxide material (Figure 14-123). Oxide material is therefore being domained separately in the main shear sediments except for fault block 1 which only contains a small number of drill holes. The diorite and the contact shear sediments do not show a bias to the oxide material and therefore all material types are grouped together for estimation. Summaries of the domain codes used to distinguish the data during geostatistical analysis and estimation are shown in Table 14-75.

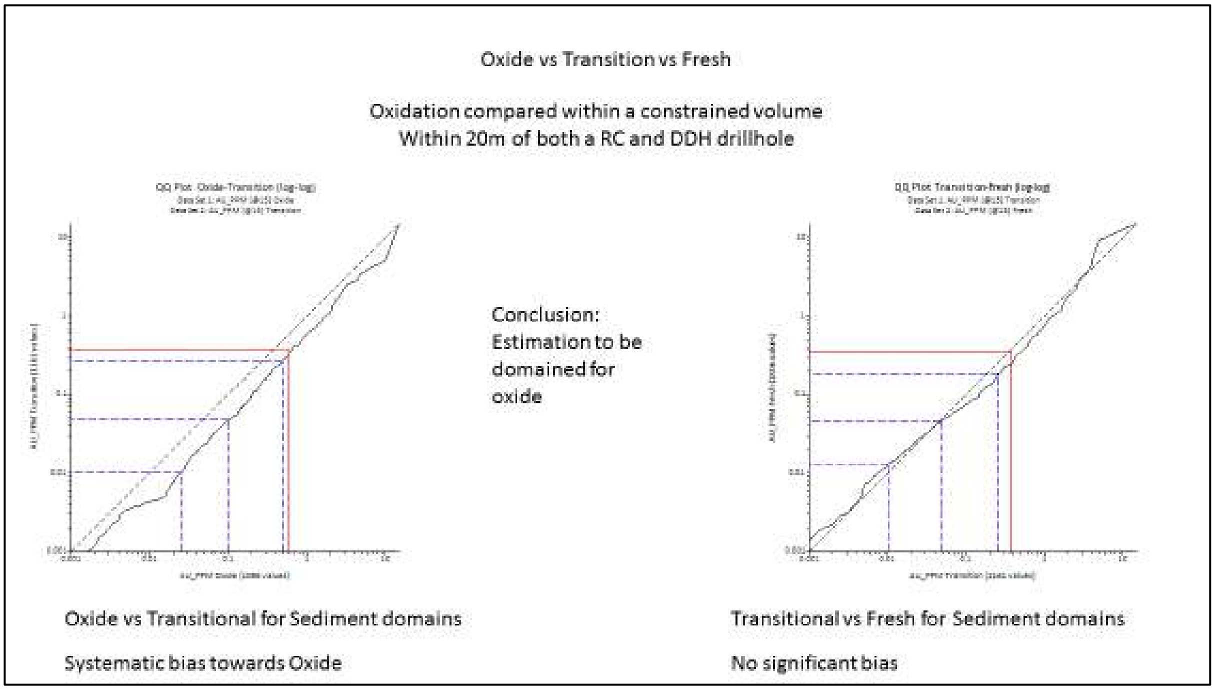


Figure 14-123 Asuadai Material Type Analysis

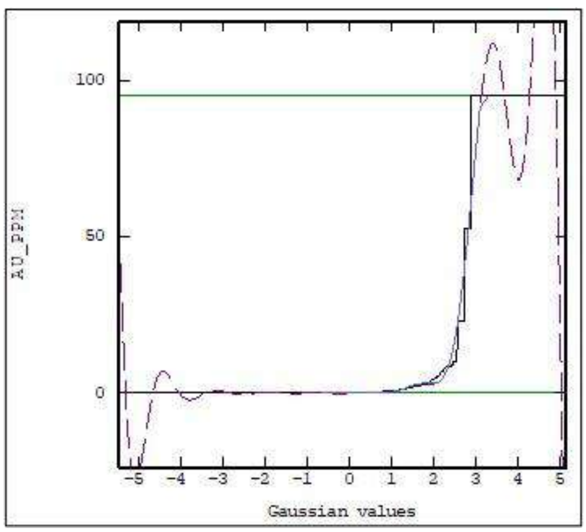
Table 14-75 Asuadai Estimation Domains

ESTIMATION DOMAIN	GROCK	MROCK	MDOM DOMAIN	FAULT BLOCK	DESCRIPTION
D1000	10	2-4	100	-	Diorite intrusive Oxide, transition and fresh
D2000	21-22	2-4	200	-	Contact Shear sediments Oxide, transition and fresh
D3220	21-22	2	302	2	Fault block 2 Main Shear sediments Oxide
D3240	21-22	3-4	302	2	Fault block 2 Main Shear sediments Transition and fresh
D3320	21-22	2	303	3	Fault block 3 Main Shear sediments Oxide
D3340	21-22	3-4	303	3	Fault block 3 Main Shear sediments Transition and fresh
D3420	21-22	2	304	4	Fault block 4 Main Shear sediments Oxide

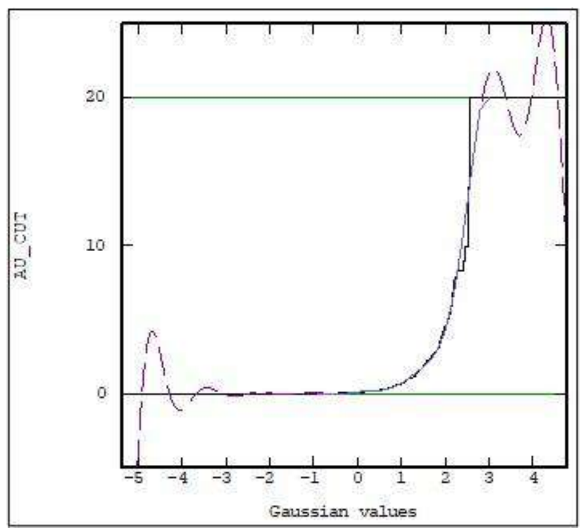
ESTIMATION DOMAIN	GROCK	MROCK	MDOM DOMAIN	FAULT BLOCK	DESCRIPTION
D3440	21-22	3-4	304	4	Fault block 4 Main Shear sediments Transition and fresh
D3520	21-22	2	305	5	Fault block 5 Main Shear sediments Oxide
D3540	21-22	3-4	305	5	Fault block 5 Main Shear sediments Transition and fresh
D3100	21-22	2-4	301	1	Fault block 1 Main Shear sediments Oxide, transition and fresh

14.7.3.1 Gold Grade Capping/Outlier Restrictions

The data was assessed for high-grade outlier samples. A top cap or truncation approach has been used where grade values above the selected top cap threshold are reduced in value to the threshold. The threshold is selected by reviewing the anamorphosis model and selecting an upper limit that results in a good fit of the anamorphosis model through the whole grade range (Figure 14-124).



Raw Anamorphosis Fit



Top-capped Anamorphosis Fit – Domain 3420

Figure 14-124 Top Cap Selection Example

The selected top cap thresholds and influence of the top cap on the calculation of the global mean for each domain can be seen in Table 14-76.

14.7.3.2 Composites

Most of the samples were originally collected at sample length of 1 metre or smaller. There are a small number of RC holes that were originally collected at 1.5 metre samples lengths. Coded drill hole sample intervals were composited to 1 metre composite lengths for each domain. Where the total drill hole intersection in a domain is not a multiple of the 1 metre.

Table 14-76 Asuadai Domain Statistics and Top Caps

ESTIMATION DOMAIN	RAW DATA					TOPCAP DATA				DE-CLUSTER	
	Count	Minimum	Maximum	Mean	Variance	Topcap	Number	Mean	Variance	Mean	Variance
D1000	658	0	53.82	1.05	10.83	20.00	3	0.95	4.52	0.93	3.85
D2000	763	0	28.15	1.00	4.94	20.00	3	0.98	4.3	1.00	5.17
D3220	275	0	4.13	0.18	0.17	2.00	3	0.17	0.12	0.14	0.11
D3240	1306	0	9.12	0.17	0.29	2.00	17	0.15	0.1	0.16	0.13
D3320	405	0	12.2	0.32	0.89	N/A	0	0.32	0.89	0.28	0.69
D3340	1200	0	15.33	0.35	1.42	N/A	0	0.35	1.42	0.32	1.3
D3420	792	0	95.00	0.87	17.19	20.00	3	0.73	3.37	0.55	3.22
D3440	2716	0	34.00	0.35	1.54	20.00	1	0.35	1.27	0.32	1.31
D3520	126	0	13.10	0.48	2.32	2.00	4	0.31	0.24	0.36	0.28
D3540	516	0	24.59	0.45	2.79	8.00	4	0.41	1.55	0.45	2.06
D3100	109	0	5.00	0.10	0.23	2.00	1	0.07	0.04	0.07	0.06

14.7.3.3 Declustering

The drilling shows a typical spatial bias, with additional drilling being carried out in higher grade areas and a higher density of drilling close to surface than at depth. To account for this in the global data analysis a moving window declustering algorithm was applied. The moving window size was selected at 70 x 70 x 20 metre which roughly equates to the broader, regular drill spacing in the project. The influence of the declustering algorithm on the calculation of the global mean for each domain can be seen in Table 14-76.

14.7.3.4 Variography

The domains were grouped for variography based on the geometry of the mineralization. The diorite and the contact shear mineralization have a steep southerly plunge and the variogram (V101) was orientated to reflect this. The mineralization in the main shear sediment domains is parallel to the shear and V301 is orientated to reflect this. The variograms are modelled on experimental gaussian variograms which are moderately to poorly structured. To reflect the uncertainty in the variogram structure, a second set of alternate variogram models were developed (V102 and V302) and in each of these models a short-range structure was introduced with a local rotation to align the variogram structure to the flat lying vein geometry reported from the drill core. Variogram parameters are summarized in Table 14-77 and modelled variograms are shown in Figure 14-125 Asuadai Relative Variogram Models

Table 14-77 Asuadai Variogram Parameters

Variogram	Structure	Sill	Range U	Range V	Range W	Rotation
V101	S1 Nugget	0.20				
	S2	0.35	14	6	2	-150,65,51
	S3	0.45	80	10	10	-150,65,51
V102	S1 Nugget	0.20				
	S2	0.45	10	10	2	180,5,0
	S3	0.1	14	12	8	-150,65,51
V301	S4	0.25	80	20	10	-150,65,51
	S1 Nugget	0.20				
	S2	0.35	30	20	10	-115,0,70
V302	S3	0.45	150	40	30	-115,0,70
	S1 Nugget	0.2				
	S2	0.35	10	10	20	180,5,0

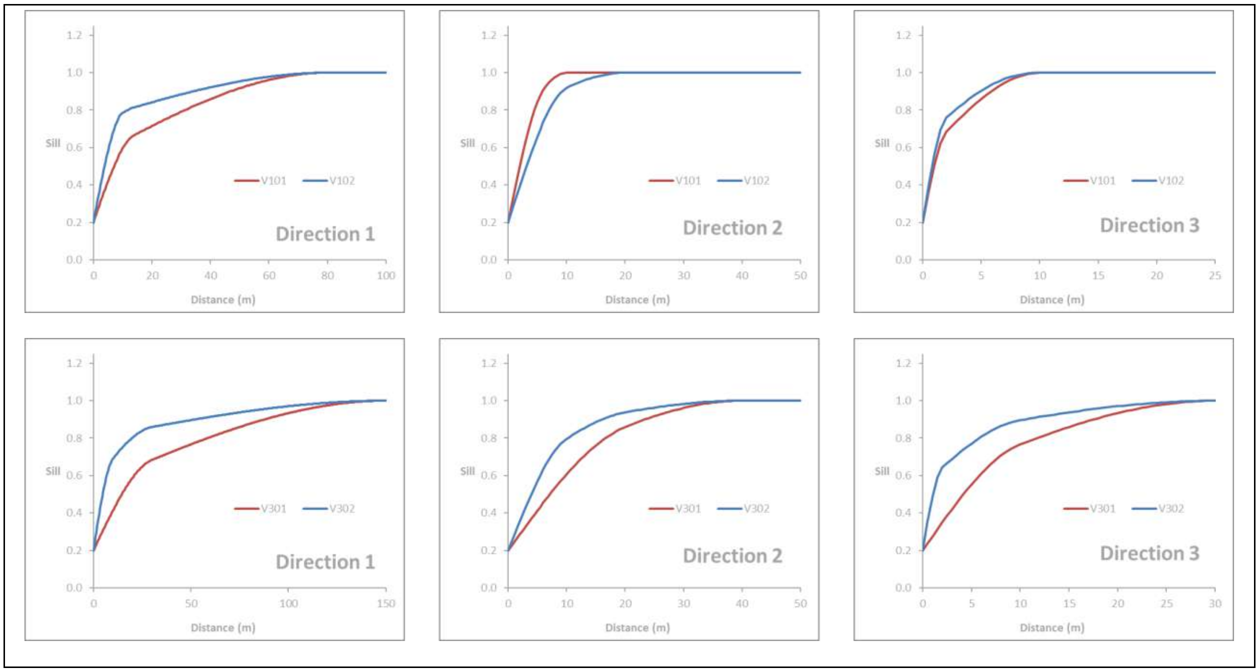


Figure 14-125 Asuadai Relative Variogram Models

14.7.4 Estimation/Interpolation Methods

14.7.4.1 Block Model Setup

The Asuadai block model was developed within Datamine StudioRM. Three block sizes were considered in the block model development, the SMU which is the smallest unit that a mining decision is based on (5 x 5 x 3 metre), a less selective waste block (10 x 10 x 6 metre) and a large-scale panel (50 x 50 x 24 metre), each block size being a multiple of the smaller block size. The primary block model setup dimensions are presented in Table 14-78.

Table 14-78 Asuadai Block Model Dimensions

Dimension	Origin	Extent	SMU Size	Number of SMUs
X	617800 mE	600 m	5	120
Y	708950 mN	850 m	5	170
Z	-50 mRL	405 m	3	135

The block model was coded according to the geological model wireframes. For volume resolution, blocks were sub-celled to a sub-cell resolution of 1 x 1 x 1 metre (Figure 14-126).

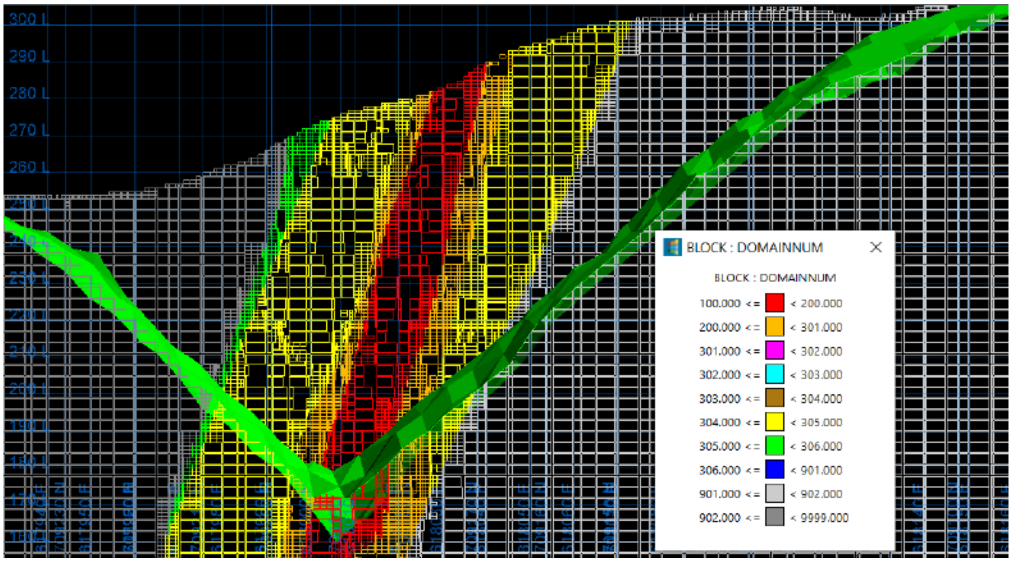


Figure 14-126 Asuadai Block Model Coded Domains

14.7.4.2 Density Assignment

The results of 109 density determination from drill core were supplied with the drilling data. Dry bulk density was assigned to the block model based on a combination of lithology and material type. Density values have changed slightly from those used in 2014 and were rounded to reflect an appropriate level of precision (Table 14-79).

Table 14-79 Asuadai Dry Bulk Density Values Assigned to the Block Model

Material	Rock Type	Density
Oxide	All	1.9
Transitional	All	2.3
Fresh	Sediments	2.7
	Diorite	2.6

14.7.4.3 Estimation

The grade model estimated for Asuadai is a localized, recoverable resource model with grades estimated at a SMU scale of 5 x 5 x 3 metre and is referred to as a localized SMU model (LSMU). The local metal distribution for the recoverable resource was estimated using conditional simulation.

Basic workflow for the LSMU model:

1. Point scale conditional simulation (sequential Gaussian simulation)
2. Re-block each realization to SMU scale (5 x 5 x 3 metre)
3. Divide the domain into panels (50 x 50 x 24 metre)
4. Calculate the local metal distribution within each panel from SMUs for all realizations at a sequence of cut-off grades
5. Index the SMU blocks within each panel to represent a local grade distribution
6. Assign grades from the local distribution in increasing sequence to SMUs ranked by the indexed values.

The localisation is the same approach used for Localized Uniform Conditioning (LUC) which estimates localized SMU grades conforming to the proper grade–tonnage curves as well as maintaining the relative spatial grade distribution pattern indicated by the directly estimated small block grades. The applied estimation differs from LUC by obtaining the local distribution through conditional simulation rather than uniform conditioning. This maintains the advantages of having a probabilistic conditional simulation model (multiple realization models) while providing a deterministic summary model (one grade per block) to be used for the reporting and optimisation processes.

14.7.5 Validation

Validation of the block model included the validation of simulation model of the main mineralization domain, statistical comparison of the model and input data, visual inspection

14.7.5.1 Validation of Simulation

The point scale gaussian values are validated for reproduction of the global mean and variance (0 and 1). The validation of the Gaussian values for Doman 1000 is shown Figure 14-127. Reproduction of the mean is good across all realizations however the variance is systematically low. The QP has commonly found this with sequential gaussian simulation within Isatis, particularly when declustering has been applied to the data. The decluster weights are considered in the anamorphosis function but are not considered during simulation. Validation of the variogram reproduction also shows the reduced variance (Figure 14-128). The influence of the two variograms applied can also be seen in the variogram validation particularly in the short range.

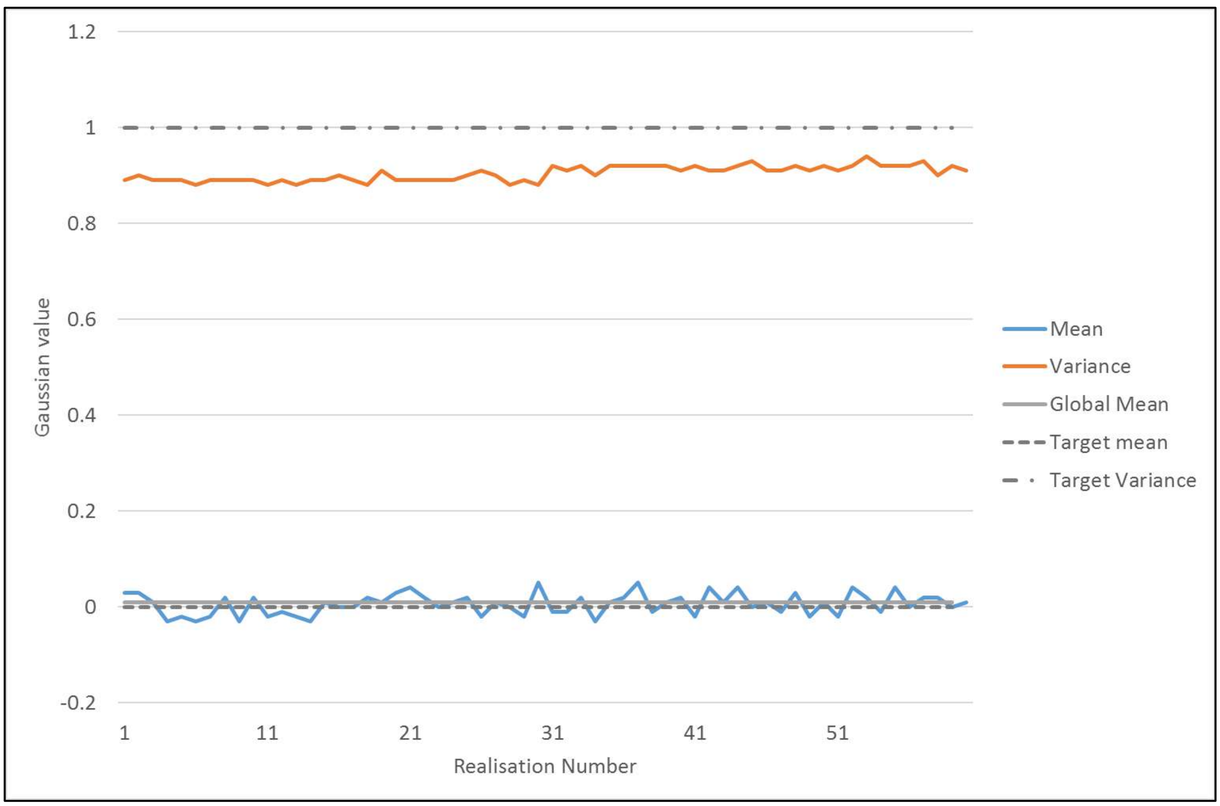


Figure 14-127 Asuadai Validation of Gaussian Values

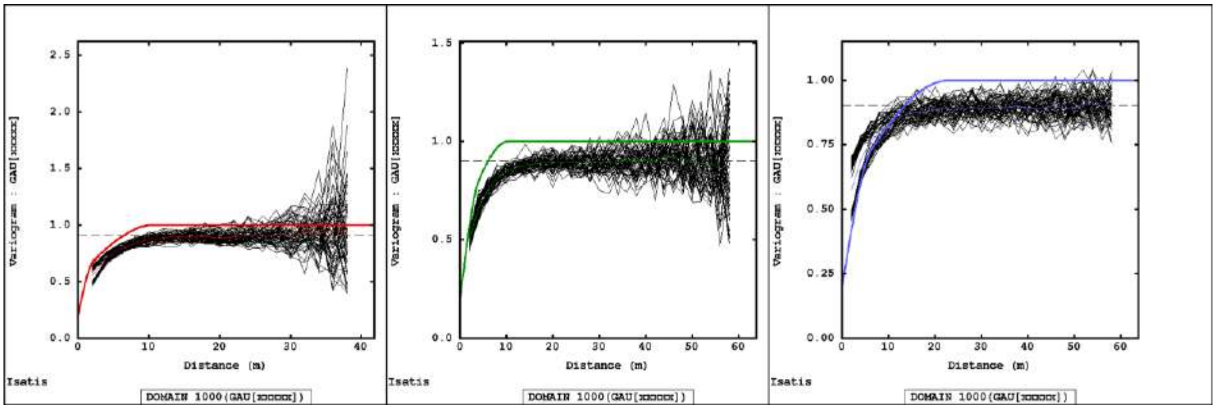


Figure 14-128 Asuadai Variogram Reproduction

Simulated gaussian values are then back transformed to real values and the reproduction of the data distribution is reviewed using grade tonnage curves to show the cumulative distribution. Figure 14-129 shows the cumulative grade tonnage curves for Domain 1000, again the influence of the reduced variance can be seen particularly on the grade curve at higher cut offs versus the input anamorphosis function.

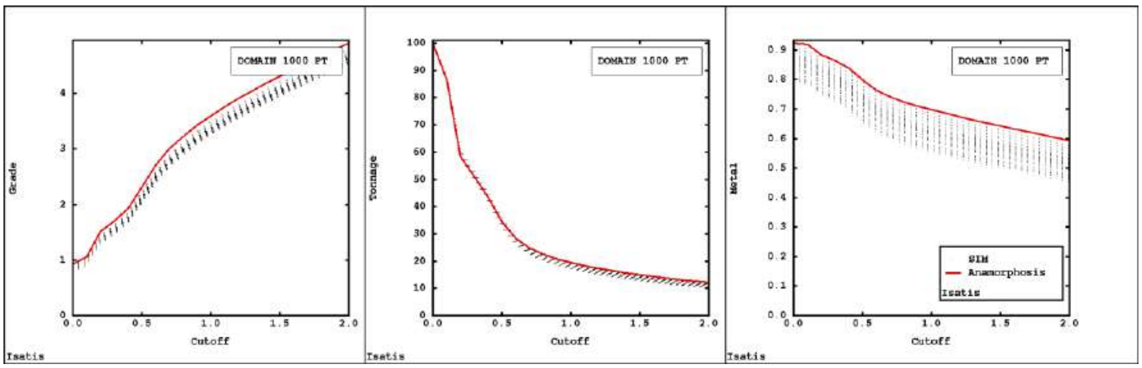


Figure 14-129 Asuadai Data Distribution Reproduction

One additional validation is applied is to ensure the LSMU model lies close to the centre of the simulation cloud of grade tonnage curves, Figure 14-130 shows the grade tonnage curves for Domain 1000.

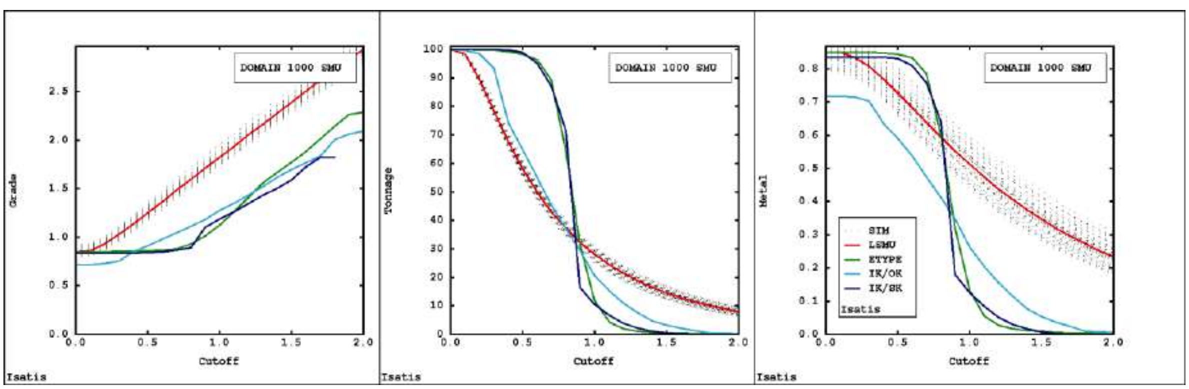
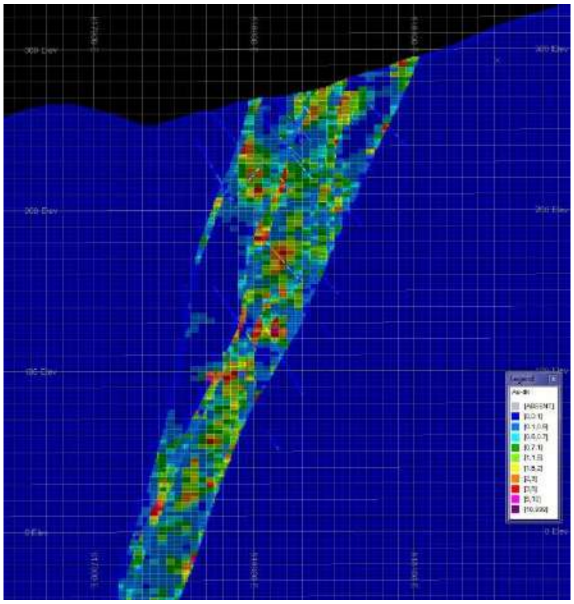
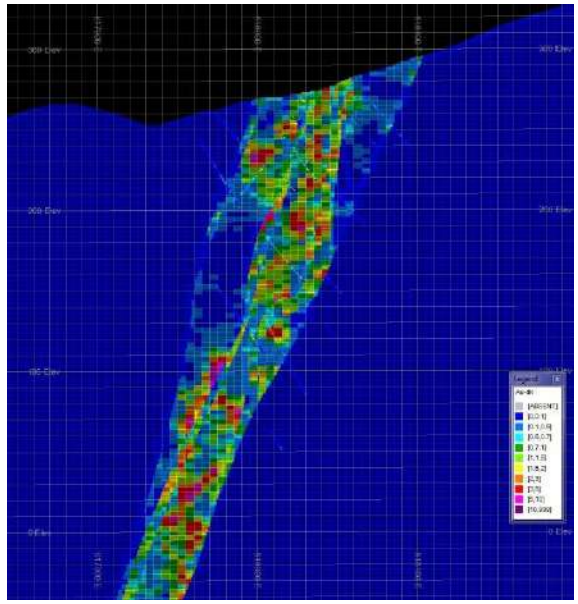


Figure 14-130 Asuadai Grade Tonnage Validation

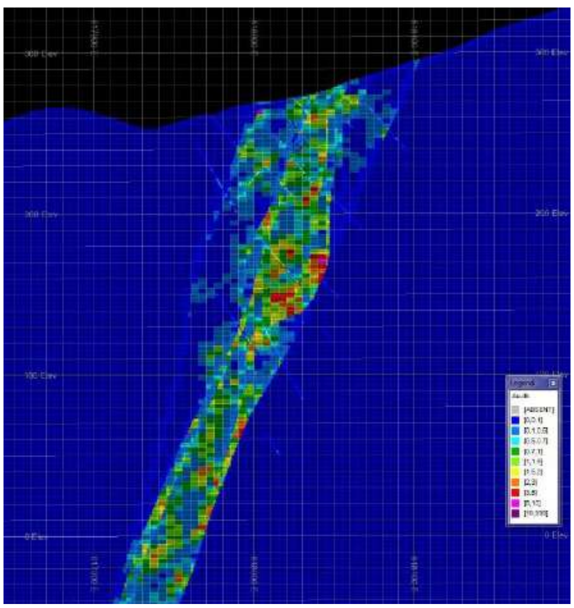
Figure 14-131 shows the LSMU model in cross section compared to three simulation realizations. All models show a similar level of grade variability.



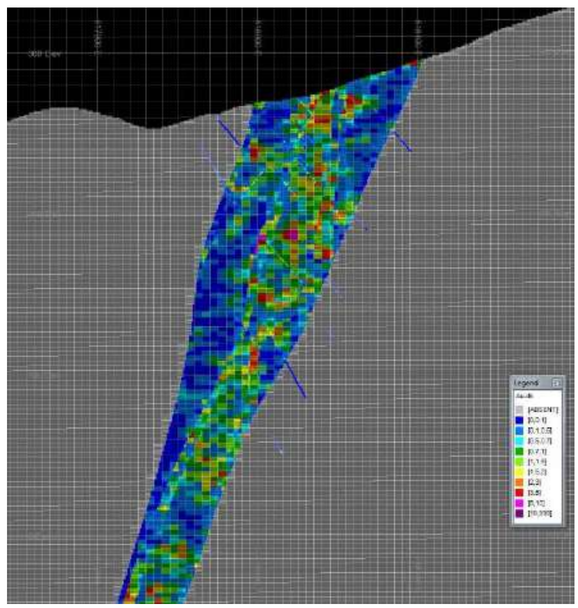
LSMU – Localized Model



Mid-case Simulation Realization



Low-case Simulation Realization



High-case Simulation Realization - Section 709200mN

Figure 14-131 Asuadai LSMU Model and Simulation Realizations

14.7.5.2 Information Effect

It is common in most recoverable resource techniques to apply an information effect. The purpose of the information effect is to make an allowance that "perfect" selectivity of SMUs will never be achieved as mining selection will be based on a short-term model from grade control spaced drilling and a degree of smoothing will be present due to this. Information effect is generally applied as a variance reduction when modelling the SMU distribution. In this case no information effect has been applied as there is already a reduced variance in the simulations.

14.7.5.3 Reconciliation

No grade control or production has been undertaken at this project, so no reconciliations can be made.

14.7.6 Classification of Mineral Resources

Drill spacing is the primary factor to define resource classification and only Indicated and Inferred resources are defined at Asuadai. The 2014 Indicated classification used a nominal drill spacing of 20 x 20 metres, with the remainder being classified as Inferred. This spacing is inconsistent with other Asanko Gold deposits where a 40 x 40 metre drill spacing had been used to classify material as Indicated. A new classification scheme was proposed and applied as shown in Table 14-80 and a comparison of the 2014 and current block classification is shown in Figure 14-132.

Table 14-80 Asuadai Classification Criteria

Classification Category	Drill Spacing (m)	Use
Measured	Measured classification not applied	
Indicated	40 x 40 drilling	Suitable for long-term mine planning
Inferred	80 x 80 drilling	Suitable for conceptual studies

Based on the amount of unknown artisanal mining, consideration should be given to downgrading all material within 15 metres of surface to Inferred in future Mineral Resource updates.

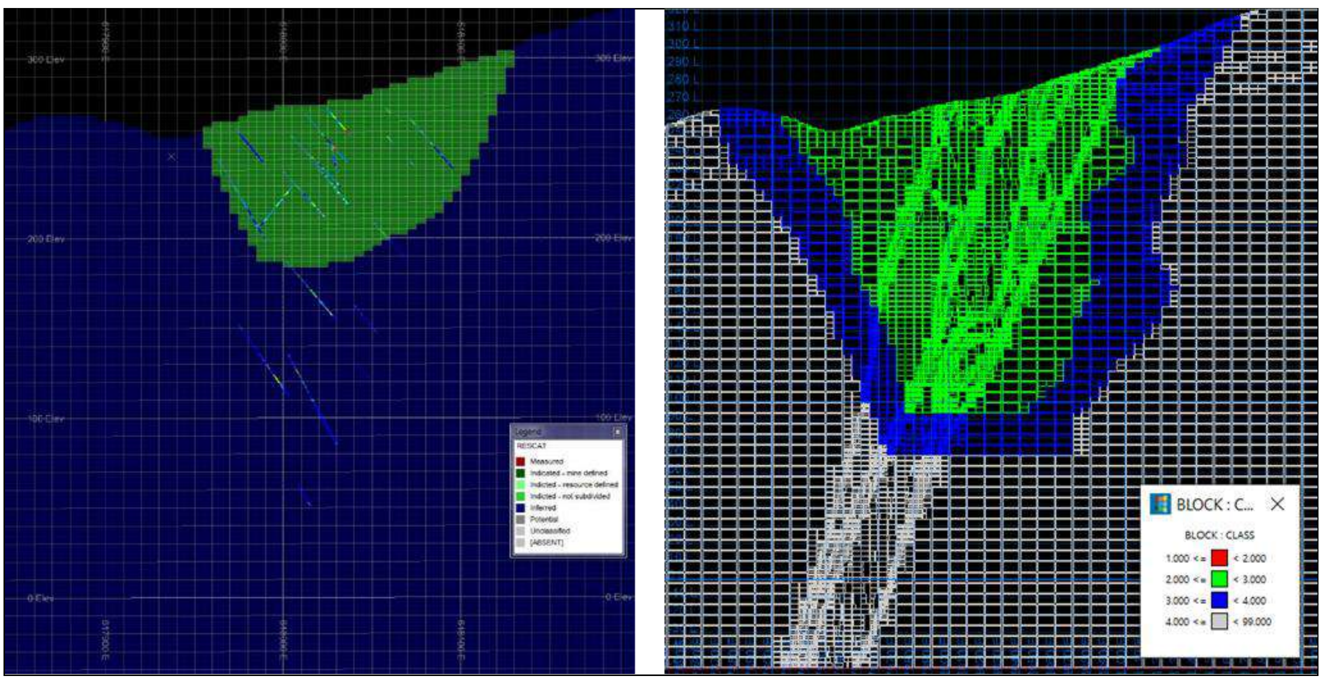


Figure 14-132: Classification Comparison on Section 709200mN

14.7.7 Reasonable Prospect of Eventual Economic Extraction

The Asuadai mineralization is assumed amenable to open pit mining, and milling and recovery through CIL gold processing, and was evaluated for reasonable prospects for eventual economic extraction by constraining the Mineral Resources within a conceptual pit shell optimized in NPV Scheduler™. The assumptions used in preparing the conceptual pit, include mining and processing costs, metallurgical recovery, metal price and general and administrative costs, and are shown in Table 14-81 and approximately correspond to the 0.50 g/t Au Mineral Resource cut-off. *See "Cautionary Note about Mineral Resources".*

Table 14-81 Asuadai Conceptual Pit Parameters

Parameter	Value
Gold Price (US$/ounce)	1,600
Mining Cost (US$/tonne)	1.025 – 1.647
Mining Cost Incremental (US$/Vertical 6m)	0.0087 – 0.0353
Mill Feed Transport (US$/tonne)	3.70
Process Cost (US$/tonne)	8.79 – 11.32
Gold Recovery (%)	94%
General and Administration (US$/tonne)	6.55

14.7.8 Mineral Resource Statement

The Asuadai Mineral Resource estimate is reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.

The Qualified Person is Eric Chen, P.Geo. who is Galiano Gold's former Vice President of Technical Services. The effective date is February 28, 2022. The Mineral Resource estimate is reported assuming open pit mining and milling and CIL gold processing methods using a cut-off grade of 0.5 g/t Au, is constrained within a conceptual open pit prepared using NPV Scheduler™ software. The Mineral Resource estimates are summarized in Table 14-82. The estimated grades and tonnages for multiple cut offs are shown in Figure 14-133.

Table 14-82 Asuadai Mineral Resource Estimate at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

Category	Cutoff Grade (g/t Au)	Tonnes (kt)	Au (g/t)	Au Metal Contained (koz)
Measured	na	na	na	na
Indicated	0.5	1,620	1.29	67
Measured & Indicated	0.5	1,620	1.29	67
Inferred	0.5	18	1.17	1

Note:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion as of February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software using several technical parameters including:*
    a. *$1,600/oz Au price*
    b. *$1.025/t to $1.647/t mining costs*
    c. *$3.70/t mill feed transport costs*
    d. *$8.79/t to $11.32/t processing costs*
    e. *94% Au recovery for all material*
    f. *$6.55/t G&A*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

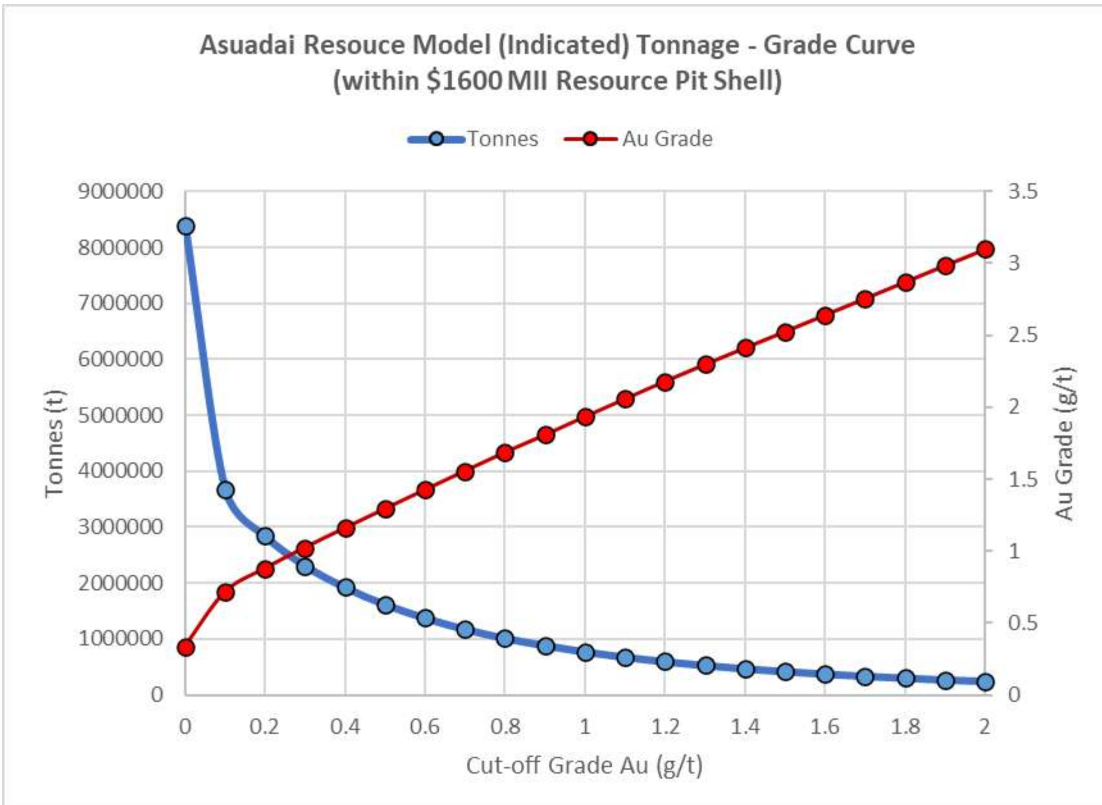


Figure 14-133 Asuadai Tonnage - Grade Curve for Indicated Mineral Resources

14.7.9 Factors That May Affect the Mineral Resource Estimate

Other than as discussed in other sections of this report there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the Mineral Resource estimates. Other relevant factors that may materially affect the Mineral Resources, including mining, metallurgical recovery, and infrastructure are reasonably well understood according to the assumptions presented in this Report.

14.8 Adubiaso Mineral Resource Estimate

The estimate relating to this Mineral Resource was conducted by Mr. Shaun Hackett of Gold Fields. The QP has reviewed this estimate and is satisfied that the work was conducted at an acceptable level for the reporting of Mineral Resources according to CIM (2014) and the NI 43-101.

14.8.1 Database

Fifty-four diamond drill holes, including holes with RC pre-collars, 281 reverse circulation drillholes, and 4,985 grade control drillholes are used for the modelling project. Thirty-five RC holes drilled in 2016 are used in this Mineral Resource estimate. Five RCD holes drilled in 2020 totalling 1,312 metres are not used in this Mineral Resource estimate.

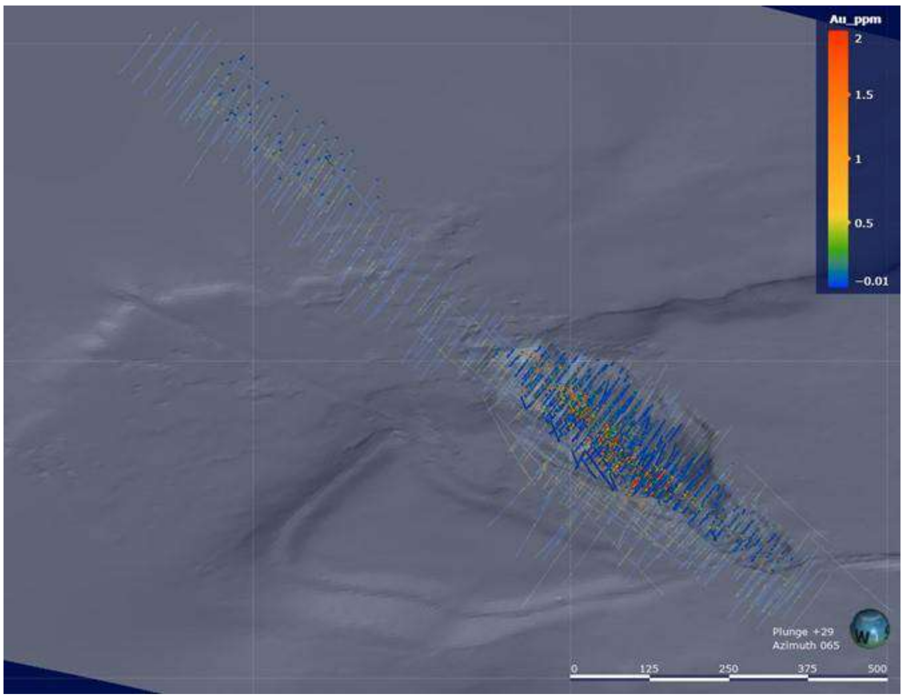


Figure 14-134 Plan View of Adubiaso Exploration Drillholes

14.8.1.1 Verification of Exploration Data

In addition to data verification discussed in Section 11 and 12 of this report, all drilling data was validated on import into Datamine. No major errors reported.

Assay intervals with no recorded gold grades were assumed to be low grade values.

14.8.2 Geological Models

This geological model was completely reinterpreted by M. Crawford (Crawford, 2019). The following descriptions are based on file notes collected during the modelling process.

The geology model has been built in four parts:

1. Lithology model (GROCK)
2. Structural model (Interpreted structural planes)
3. Mineralization model (MDOM)
4. Material type model (MROCK)

14.8.2.1 Lithology, Structure, and Material Type Models

The Lithology model was developed from the diamond and RC drillholes only, as these have the most reliable logging information. The mineralization model uses the grade control drilling within the mined-out portion of the pit and then the same trends are imposed on the diamond and RC drilling at depth. Reference was made to available processed images from the airborne geophysics. The modelling in Leapfrog uses manually selected intervals and geological model algorithms to generate the resulting wireframe models. Lithology wireframe models are shown in Figure 14-135 and Figure 14-136.

The material type represents different levels of weathering and is suitable for assessing material movement and simple mineral processing flow sheets but may not be detailed enough for more complicated processing assessments.

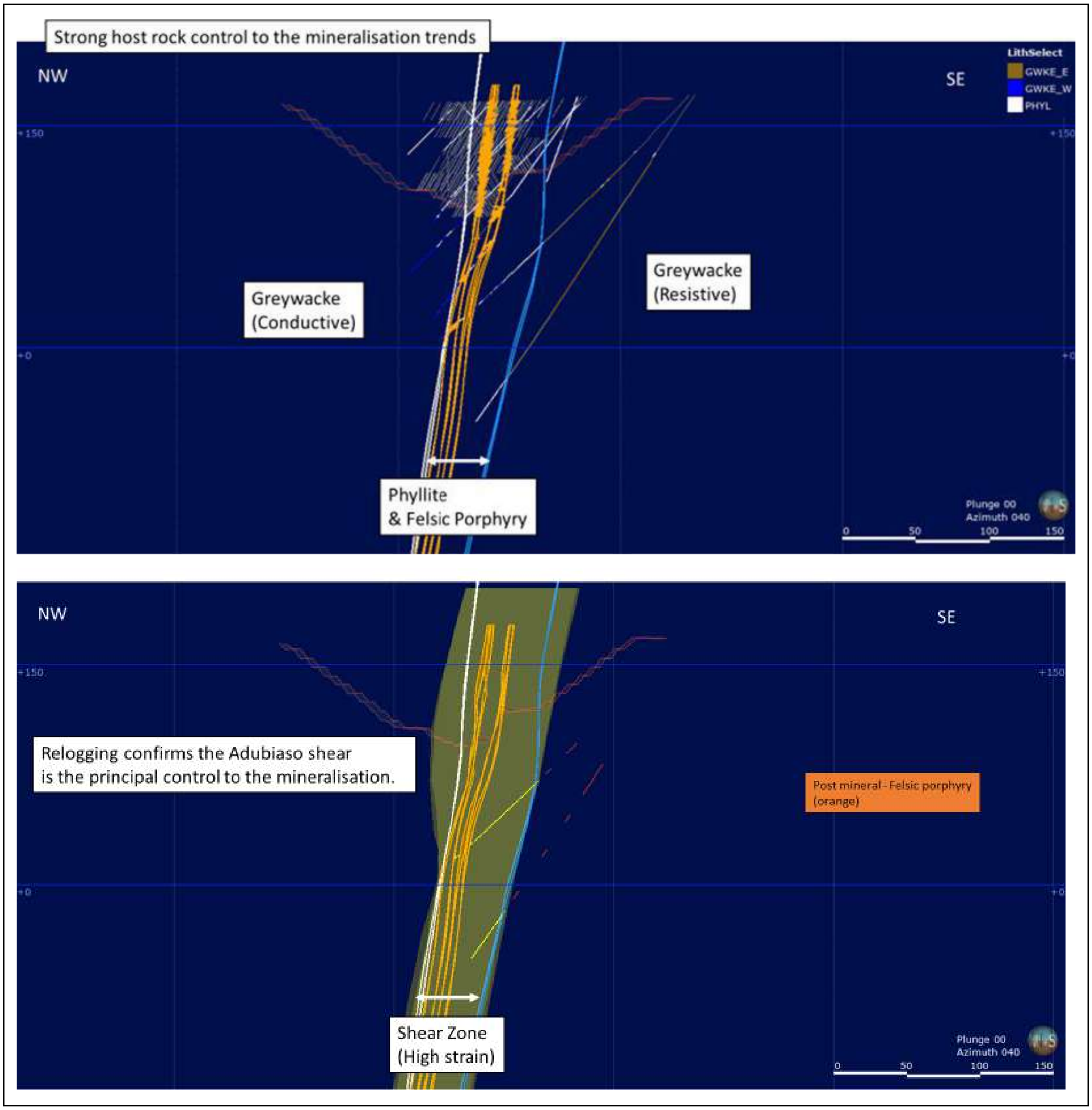


Figure 14-135 Adubiaso Lithological and Structural Models (Section View)

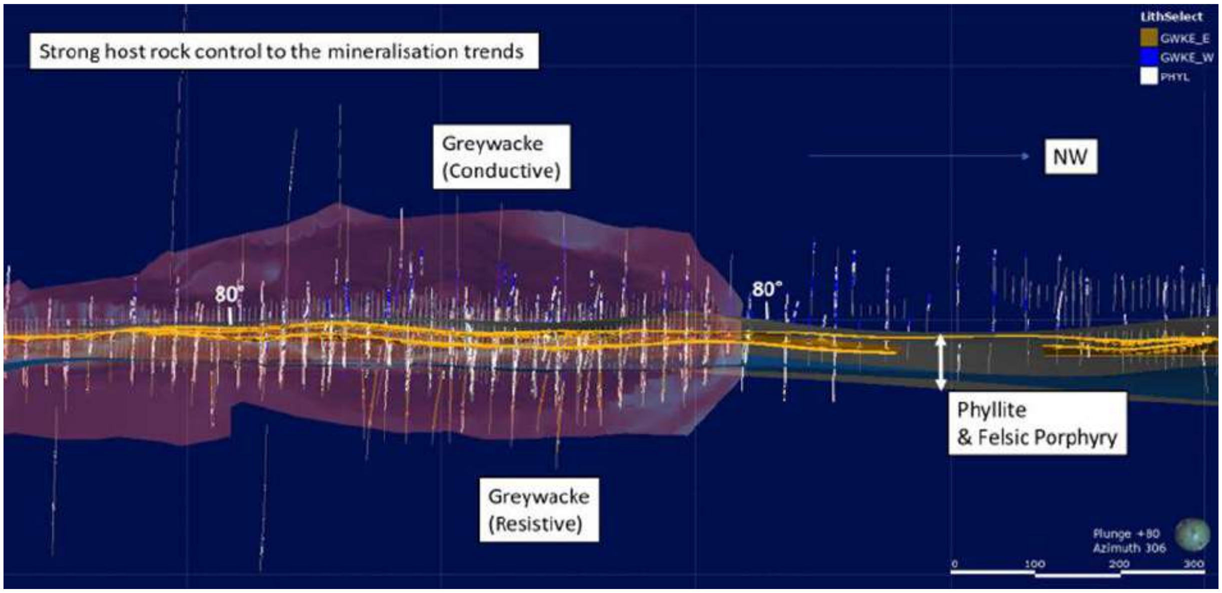


Figure 14-136 Adubiaso Lithological and Structural Models (Plan View)

14.8.2.2 Mineralization Model

The principal control on the mineralization is the Adubiaso shear. Within the shear the mineralization is then best developed along the hanging wall side of the felsic porphyry units. The mineralization appears to be a composite of moderately dipping structures hosting the higher gold grades (Figure 14-137 and Figure 14-138) within an overall steeper dipping envelope subparallel to the trend of the porphyries. Local thickening of the mineralization envelope also corresponds to higher intensity in the gold mineralization this appears to be controlled in part by the interpreted northwest/southeast crosscutting structure, resulting in a moderate northeast plunge to the mineralization.

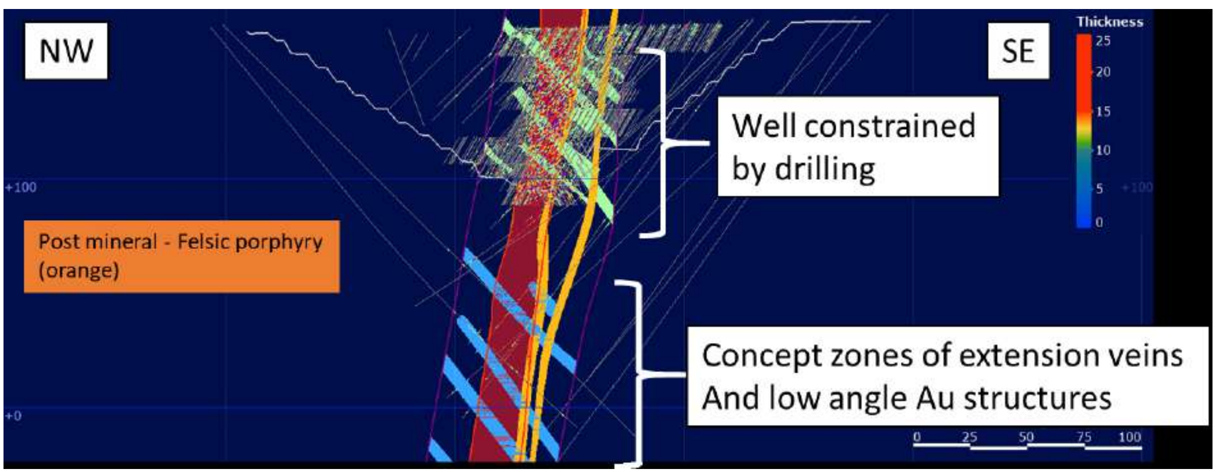


Figure 14-137 Adubiaso Mineralization Model (Cross-section View)

Note: Blue stripes are conceptual illustrations of extension veins/structures and green stripes are modelled from drilling.

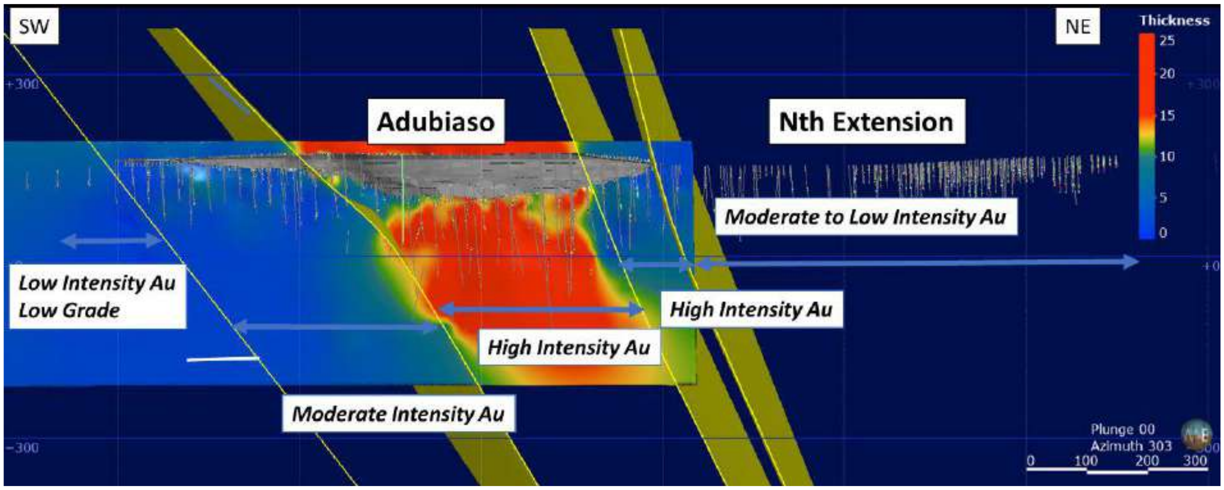


Figure 14-138 Adubiaso Mineralization Model (Long-section View)

14.8.3 Exploration Data Analysis

Data analysis was undertaken to determine estimation domains and to derive parameters for estimation. Figure 14-139 shows the domain numbering convention based on progressive mineralization controls for the main domains. First order is the along strike variation within the shear numbered by fault block from SW to NE with values in the 1000 to 5000 range. Second order is variation across the shear with values in the 100-300. Third order is a sub domain based on the interpreted low angle structures or outside of the low angle structures using 10 for within the structures. Some minor domains were re-coded to incorporate them into larger adjacent domains where a domain numbering combination resulted in a small number of samples. The northern splay structure is assigned domain numbers in the 6000 series. Sub domain wireframes within the northern splay are individually number to subdomains (111-121). The felsic porphyries postdate mineralization and are coded to a domain series of their own (9000) except for the grade control samples. No lithological information is available for the grade control and the interpreted positions of the felsic porphyries are not sufficiently detailed enough at the grade control spacing.

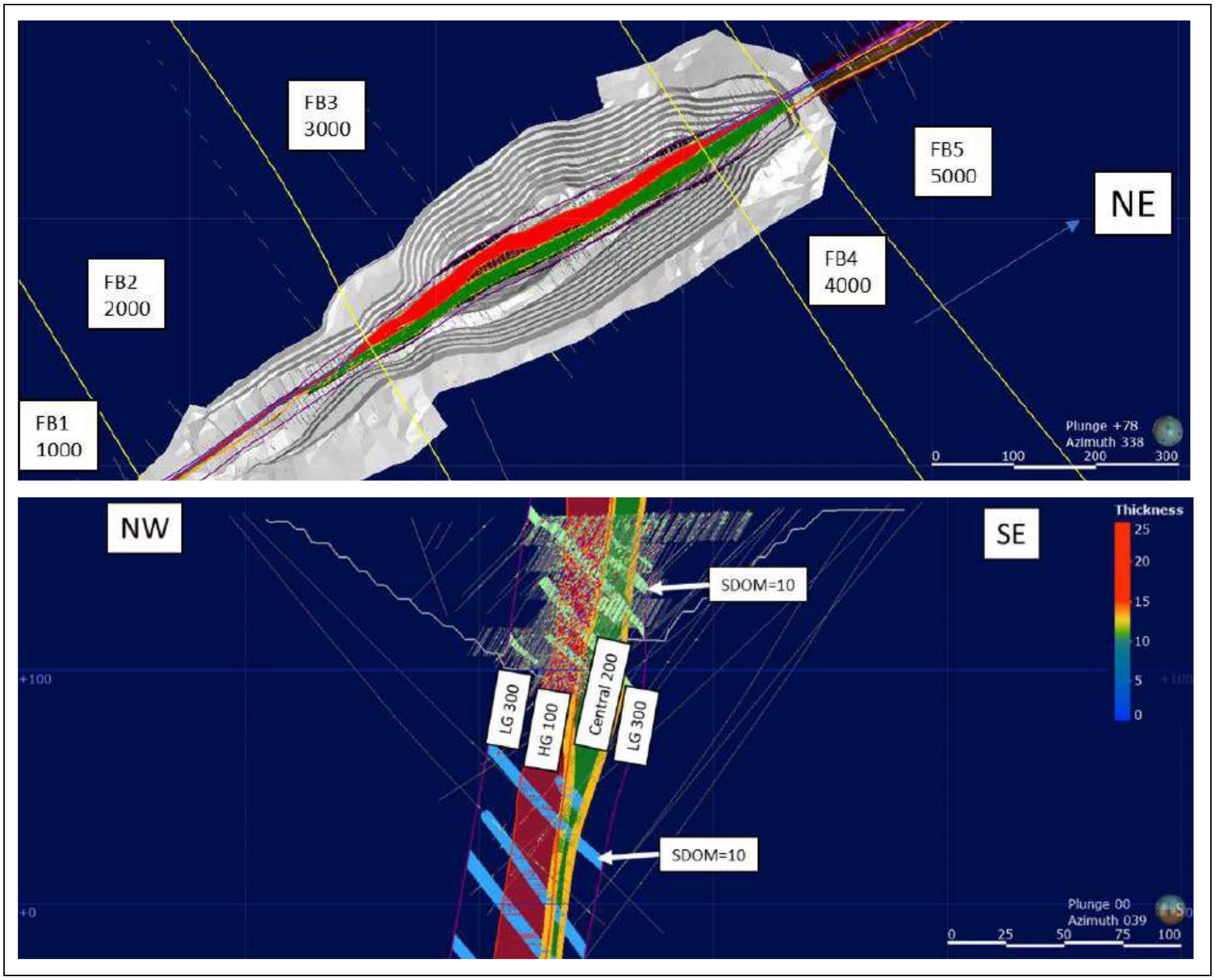


Figure 14-139 Adubiaso Domain Numbering Convention

Domain coding is summarized in Table 14-83.

Table 14-83 Adubiaso Wireframe files

Leapfrog Output File	Datamine Wireframe File	Datamine Code
Topographic model		
TOPO_CURRENT	TOPO	1
PREMINE_TOPO	TOPO_PM	1
Lithological model		
L - FP3	LITH	13
L - FP4	LITH	14
L - FP6	LITH	16
L - FP_2	LITH	12
L - FP_8	LITH	18
L - FP_Main_West	LITH	11
L - GWK_FW	LITH	31
L - GWK_HW	LITH	33
L - PHYLLITE	LITH	32

Leapfrog Output File	Datamine Wireframe File	Datamine Code
Structural model		
B_INT_LG_STH_BLOCK	STRUC	1
B_INT_NTH_BLOCK_BOUNDARY	STRUC	3
B_INT_NTH_BLOCK	STRUC	4
B_INT_STH_INFLECTION_BLOCK	STRUC	2
Material type model		
MROCK - OXIDE	MROCK	2
MROCK - TRANS	MROCK	3
MROCK - FRESH	MROCK	4
Mineralization model		
MIN - MIN FAULT BLOCK (1-4) – HG	MDOM_ENV	1100-4100
MIN - MIN FAULT BLOCK 5 - HG	MDOM_ENV	5300
MIN - MIN FB 1 - CENTRAL	MDOM_ENV	1300
MIN - MIN FB (2-4) - CENTRAL	MDOM_ENV	2200-2400
MIN - MIN FB 5 - CENTRAL	MDOM_ENV	5300
MIN - MIN FB 5 - CENTRAL_NTH	MDOM_ENV	6200
MIN - MIN FAULT BLOCK (1-5) - LG	MDOM_ENV	1300-5300
V_NTH_BLOCK_WEST	MDOM_ENV	6300
Mineralized structures interpretations		
GM_EXTENSIONVEINS – EV*	MDOM_EV	Nov-43
GM_EXTENSIONVEINS – AA*	MDOM_EV	51-62
F*	MDOM_EV	71-92
D_NTH_ZONE	MDOM_EV	111
D_ZONE_NTH_WEST*	MDOM_EV	112-121
Ancillary wireframes		
ADUBIASO_PIT	PIT	20
DH_SPACE - 10	DHSPACE	10
DH_SPACE - 20	DHSPACE	20
DH_SPACE - 30	DHSPACE	30
DH_SPACE - 40	DHSPACE	40

A check for influence of weathering on the grade distribution indicates weathering does not appear to alter the grade distribution to any significant degree (Figure 14-140).

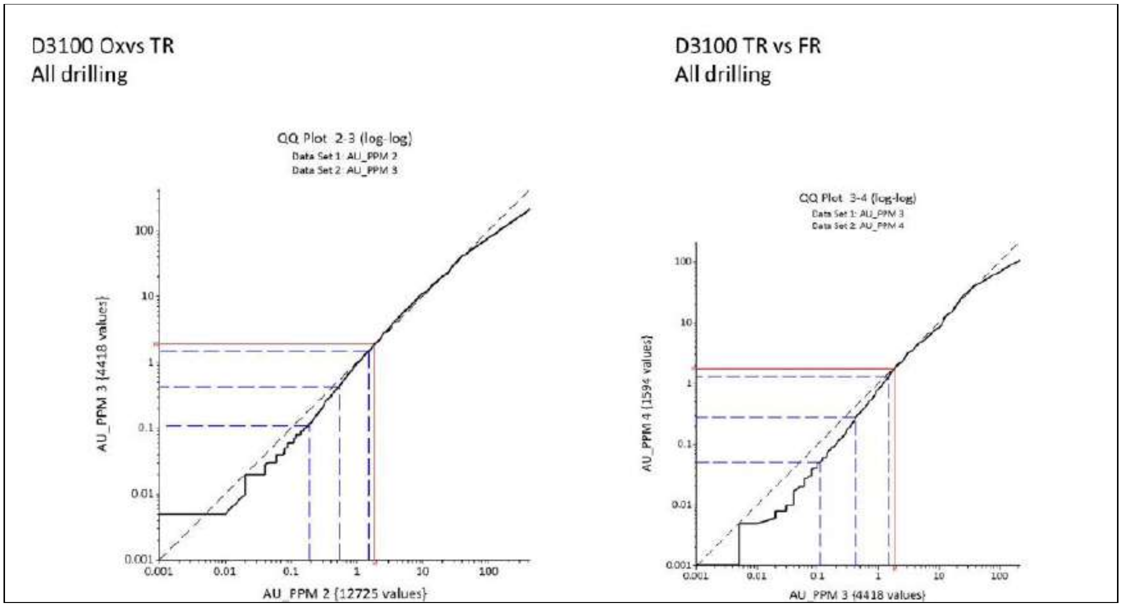


Figure 14-140 Adubiaso Material Type Analysis

A comparison of GC, RC and DDH assays indicates there is an apparent low bias in the GC and RC sampling compared to the diamond drilling for samples collected in the upper portion of the main domain (Figure 14-141). This bias is considered a function of the drill density, related to the short scale mineralization structures. As the project advances this bias should be further investigated to confirm the underlying cause. For this model no action has been take on the bias.

The drillhole data used for resource estimation were predominately RC, hence the estimates would more heavily weighted towards RC samples. The low bias in RC samples would likely produce a more conservative grade estimation on the global sense.

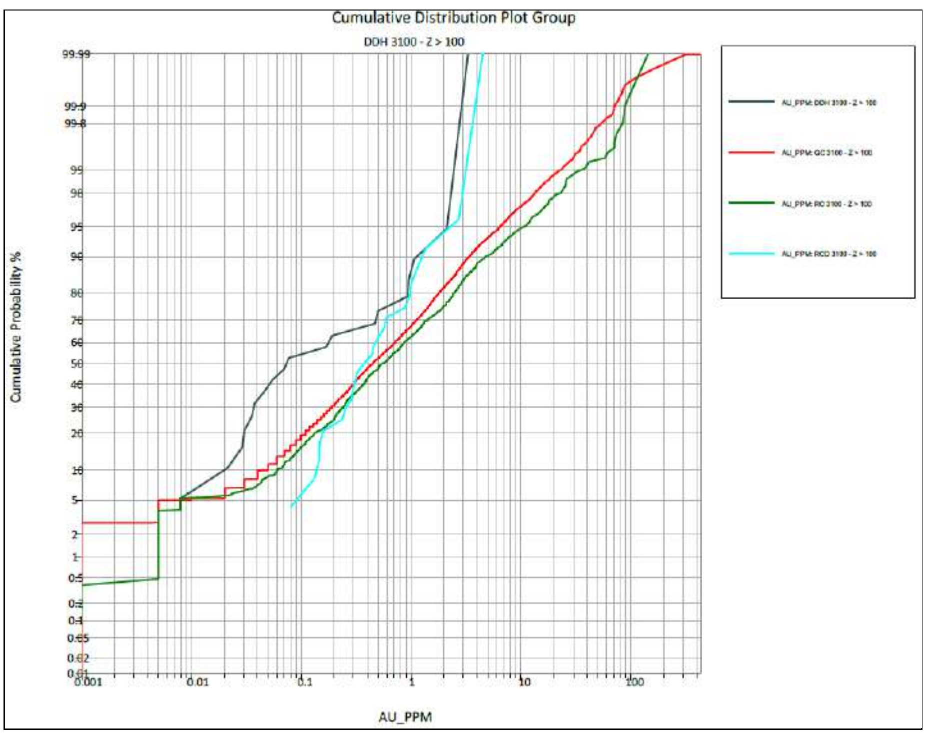
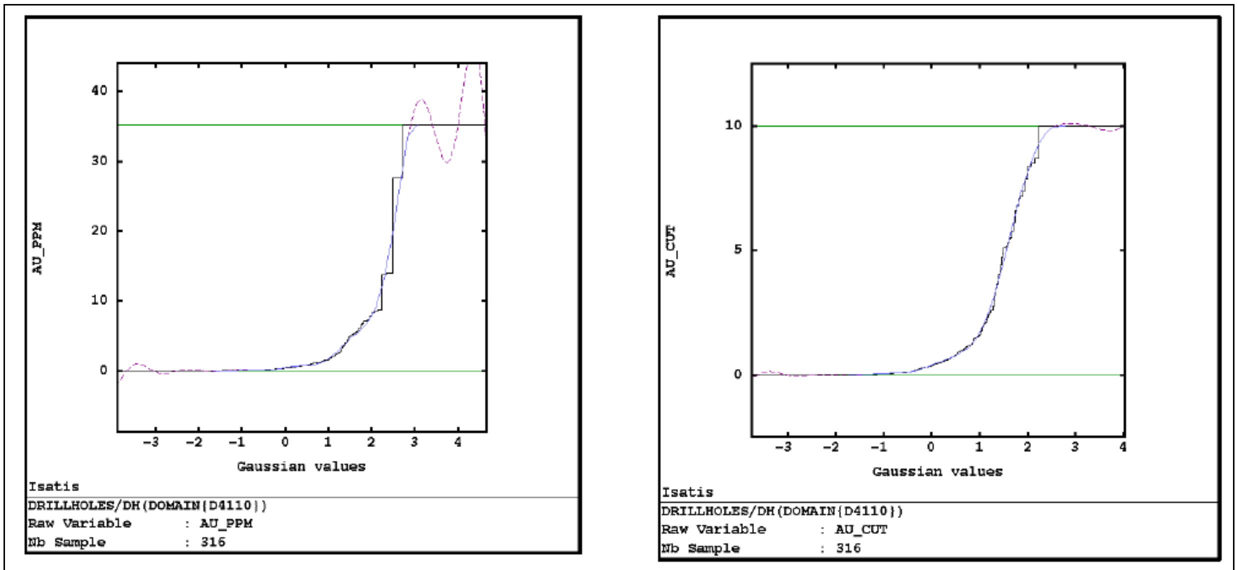


Figure 14-141 Adubiaso Cumulative Grade Frequency by Drill Hole Type

14.8.3.1 Gold Grade Capping/Outlier Restrictions

The data has been assessed for high-grade outlier samples. A top-capping or truncation approach has been used where grade values above the selected top-cap threshold are reduced in value to the threshold. The threshold is selected by reviewing the anamorphosis model and selecting an upper limit that results in a good fit of the anamorphosis model through the whole grade range (Figure 14-142). Generally, top-cap thresholds in this methodology only affect a small number of samples and are typically higher than those that would be selected for kriging. The selected top-cap thresholds and influence of the top-cap on the calculation of the global mean for each domain can be seen Table 14-84.



Raw Anamorphosis fit *Top-capped Anamorphosis fit – Domain 4110*

Figure 14-142 Adubiaso Topcap Selection Example

14.8.3.2 Composites

Coded drillhole sample intervals were composited to 1 metre composite lengths for each domain. Where the total drillhole intersection in a domain is not a regular multiple of 1metre the composite length is adjusted slightly to reflect an even composite length close to 1 metre. Most of the samples were originally collected at sample length of 1 metre or smaller. Pre and post capping composite statistics are shown in Table 14-84.

Table 14-84 Adubiaso Domain Pre and Post Top Cut Statistics

DOMAIN	Count	Min (Au g/t)	Max (Au g/t)	Mean (Au g/t)	Var	Cap (Au g/t)	# of Comp. Capped	Mean (Au g/t)	Var
D2110	397	0.01	104.5	2.27	61.68			2.27	61.68
D3110	3748	0.01	108.55	1.94	24.15	100	1	1.94	23.68
D4110	316	0.01	35.2	1.23	9.51	10	4	1.07	3.6
D2210	299	0.01	25.33	0.87	7.88	20	2	0.84	6.83
D3210	2564	0.01	58.93	1.2	14.8			1.2	14.8
D4210	650	0.01	133.33	1.9	43.77			1.9	43.77
D2310	1110	0.01	105.27	0.76	24.92			0.76	24.92
D3310	3197	0.01	105	0.93	14.38			0.93	14.38
D4310	304	0.01	132.8	1.09	61.93	20	2	0.7	
D5310	18	0.03	15.93	1.28	12.84	5	1	0.67	1.32

DOMAIN	Count	Min (Au g/t)	Max (Au g/t)	Mean (Au g/t)	Var	Cap (Au g/t)	# of Comp. Capped	Mean (Au g/t)	Var
D6111	58	0.01	6.02	0.67	1.13			0.67	1.13
D6112	259	0.01	3.2	0.53	0.34			0.53	0.34
D6113	81	0.01	18.5	1.28	9.82	10	3	1.07	4.22
D6114	37	0.01	7.66	0.77	2.13			0.77	2.13
D6115	119	0.01	22.3	0.68	4.88			0.68	4.88
D6116	389	0.01	9.16	0.14	0.32			0.14	0.32
D6117	182	0.01	7.26	0.31	0.83			0.31	0.83
D6118	45	0.01	3.28	0.54	0.52			0.54	0.52
D6119	771	0.01	122	1.69	58.38			1.69	58.38
D6120	93	0.01	7.25	0.37	0.71			0.37	0.71
D6121	187	0.01	12.9	1.03	3.35			1.03	3.35
D2100	1081	0.01	305.67	1.14	101	20	5	0.76	4.43
D3100	14949	0.01	430.75	1.84	54.91	200	3	1.81	39.12
D4100	662	0.01	29.9	0.52	3.08			0.52	3.08
D2200	1151	0.01	30.2	0.22	1.27			0.22	1.27
D3200	11950	0.01	76.25	0.27	3.02			0.27	3.02
D4200	1755	0.01	56.47	0.51	5.84			0.51	5.84
D2300	4006	0.01	117.24	0.23	5.97			0.23	5.97
D3300	16842	0.01	114.53	0.2	2.86			0.2	2.86
D4300	2132	0.01	13.9	0.14	0.41			0.14	0.41
D5300	2002	0.01	74.21	0.13	3.62	5	6	0.07	0.11
D1100	50	0.01	0.06	0.02	0.01			0.02	0.01
D1300	172	0.01	1.51	0.07	0.03			0.07	0.03
D6200	1857	0.01	327.47	0.94	125.5	20	12	0.49	3.96
D6300	11816	0.01	358	0.15	14.45	20	5	0.1	0.41
D9000	2760	0.01	48.9	0.18	2.78	3	15	0.11	0.09

14.8.3.3 Variography

Two variogram orientations were applied to this model; the first aligned parallel to the low angle structures and the second aligned parallel to the shear (Table 14-85). Half of the simulation realizations were run with the first variogram and then the remaining simulation realizations were run with the second variogram.

Table 14-85 Adubiaso Applied Variogram Parameters

Variogram	Structure	Sill	Range U	Range V	Range W	Rotation
V3100	S1 Nugget	0.2				
	S2	0.5	5	5	2	210,130, -160
	S3	0.2	20	15	5	210,130, -160
	S4	0.1	110	75	15	210,130, -160
V3300	S1 Nugget	0.2				
	S2	0.3	8	3	3	210,75,180
	S3	0.2	19	7	7	210,75,180
	S4	0.4	100	30	30	210,75,180

Note: All rotations use Isatis geologist plane convention

14.8.4 Estimation/Interpolation Methods

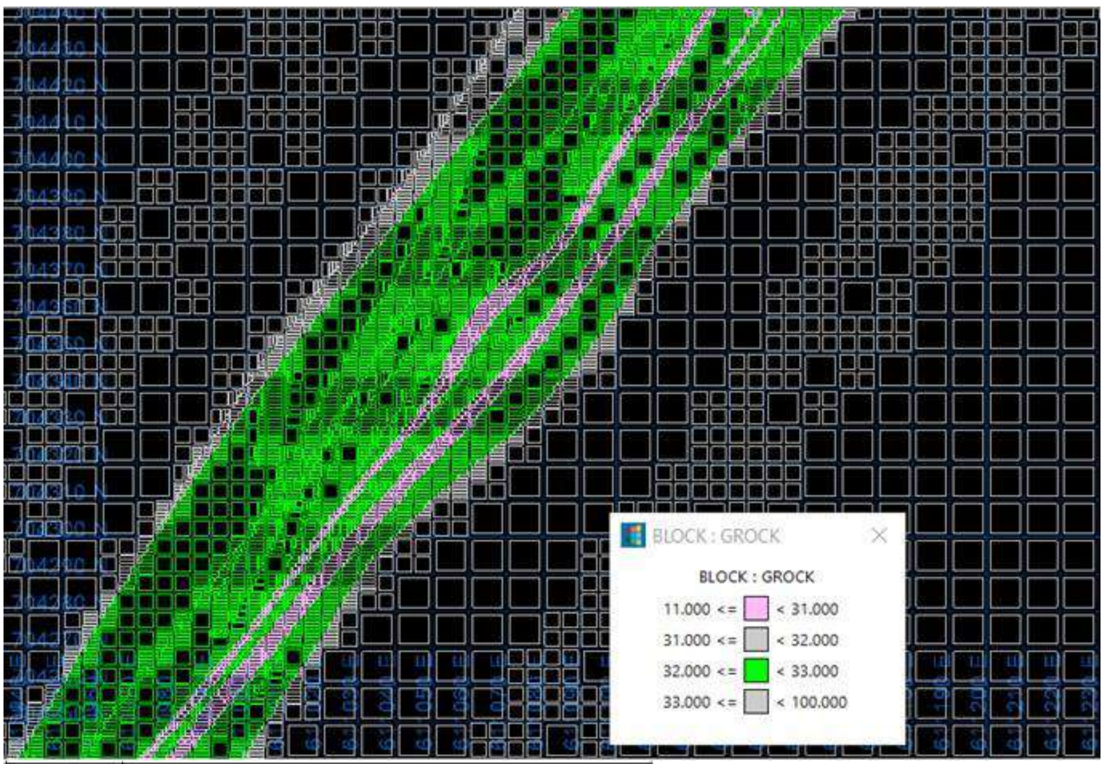
14.8.4.1 Block Model Setup

The Adubiaso block model was developed within Datamine Studio. Three block sizes were considered in the block model development, the selective mining unit (SMU) which is the smallest unit that a mining decision is based on (5 x 5 x 3 metre), a less selective waste block (10 x 10 x 6 metre) and a large-scale panel (50 x 50 x 24 metre) each block size being a multiple of the smaller block size. The primary block model setup dimensions are presented in Table 14-86.

Table 14-86 Adubiaso Block Model Dimensions

Dimension	Origin	Extent (m)	SMU Size (m)	Number of SMUs
X	610500 mE	1,500	5	310
Y	703600 mN	2,050	5	410
Z	-50 mRL	336	3	112

The block model was coded according to the geological model wireframes. For volume resolution, blocks were sub-celled to a sub-cell resolution of 1 x 1 x 1 metre.



Code	Description
11-18	Felsic porphyry
31	Greywacke – sediments FW side
32	Phyllite – main sheer
33	Greywacke – sediments HW side

Figure 14-143 Adubiaso Plan View Showing Coded Block Model by Lithology Wireframes

14.8.4.2 Density Assignment

Dry bulk density has been assigned to the block model based on a combination of lithology and material type. The same density values as used at Asuadai have been applied as similar rock types are present at both deposits. Density values have changed slightly from those used in 2014 and have been rounded to reflect an appropriate level of precision (Table 14-87).

Table 14-87 Adubiaso Bulk Density Block Assignment

Description	GROCK	MROCK	Dry Bulk Density (t/m^3)	2014 Density
Waste Dump	N/A	5	1.3	
All Oxide Material	ALL	2	1.9	1.78
All Transitional Material	ALL	3	2.3	2.23
Fresh Sediments	31-33	4	2.7	2.73
Fresh Porphyry	11-18	4	2.6	2.64

14.8.4.3 Estimation

The grade model estimated for Adubiaso is a localized, recoverable resource model with grades estimated at a SMU scale of 5 x 5 x 3 metre and is referred to as a localized SMU model (LSMU). The local metal distribution for the recoverable resource was estimated using conditional simulation.

Basic workflow for the LSMU model:

1. Point scale conditional simulation (sequential Gaussian simulation)
2. Re-block each realization to SMU scale (5 x 5 x 3 metre)
3. Divide the domain into panels (50 x 50 x 24 metre)
4. Calculate the local metal distribution within each panel from SMUs for all realizations at a sequence of cut-off grades
5. Index the SMU blocks within each panel to represent a local grade distribution
6. Assign grades from the local distribution in increasing sequence to SMUs ranked by the indexed values.

The localisation is the same approach used for Localized Uniform Conditioning (LUC) which estimates localized SMU grades conforming to the proper grade–tonnage curves as well as maintaining the relative spatial grade distribution pattern indicated by the directly estimated small block grades. The applied estimation differs from LUC by obtaining the local distribution through conditional simulation rather than uniform conditioning. This maintains the advantages of having a probabilistic conditional simulation model (multiple realization models) while providing a deterministic summary model (one grade per block) to be used for the reporting and optimisation processes.

14.8.5 Validation

Validation of the block model included the validation of simulation model of the main mineralization domain, statistical comparison of the model and input data, visual inspection

14.8.5.1 Validation of Simulation

The point scale gaussian values are validated for reproduction of the global mean and variance (0 and 1). The validation of the Gaussian values for Doman 3110 is shown in Figure 14-144. Reproduction of the mean is slightly low across all realizations and the variance is slightly low. The influence of the two variograms applied can also be seen in the validation with the change at realization 30.

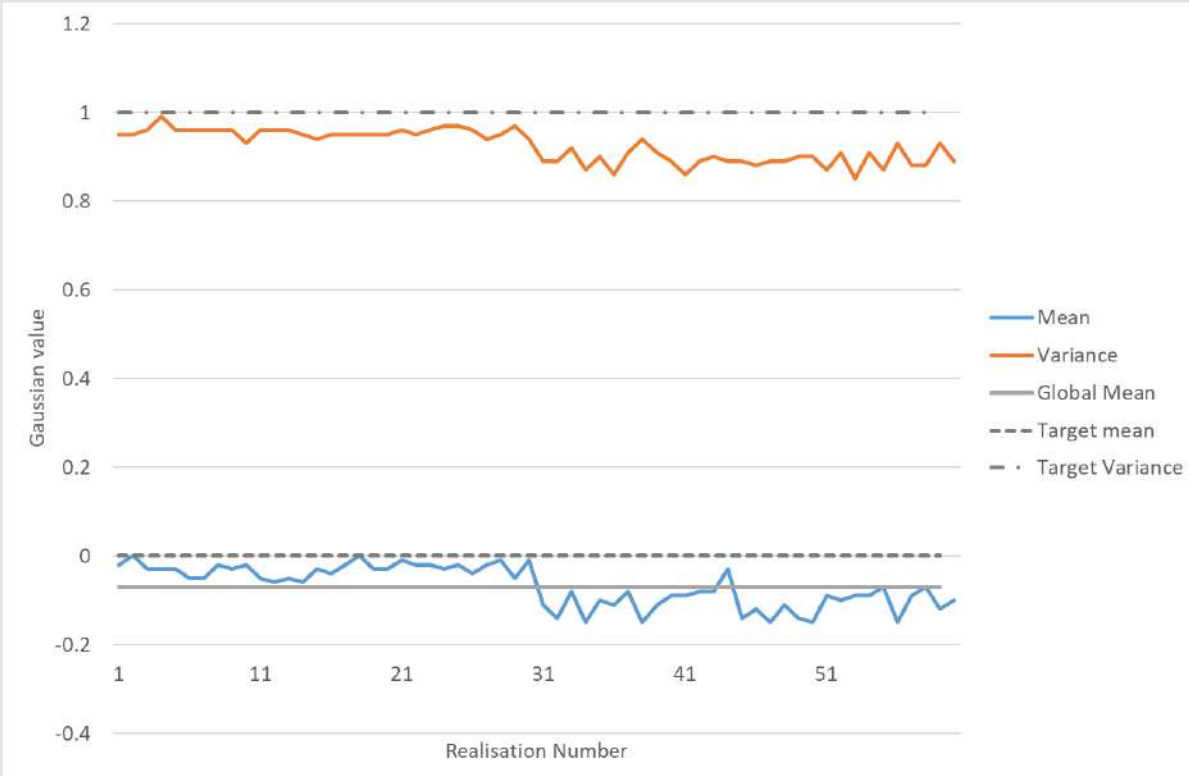


Figure 14-144 Adubiaso Validation of Gaussian Values

Simulated gaussian values are then back-transformed to real values and the reproduction of the data distribution is reviewed using grade tonnage curves to show the cumulative distribution. Figure 14-145 shows the cumulative grade tonnage curves for Domain 3110 versus the input anamorphosis function.

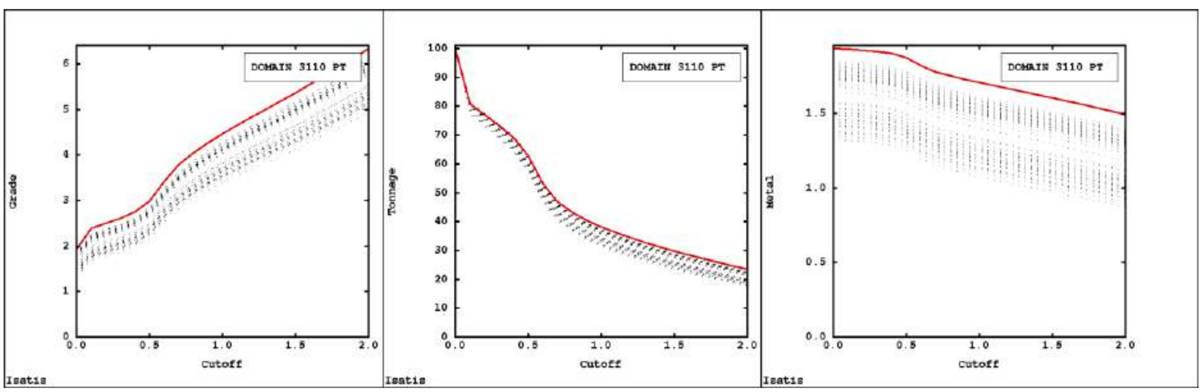


Figure 14-145 Adubiaso Data Distribution Reproduction

Once the LSMU model is produced, it was validated with similar processes to other models. One additional validation is applied is to ensure the LSMU model lies close to the centre of the simulation cloud of grade tonnage curves, Figure 14-146 shows the grade tonnage curves for Domain 3110.

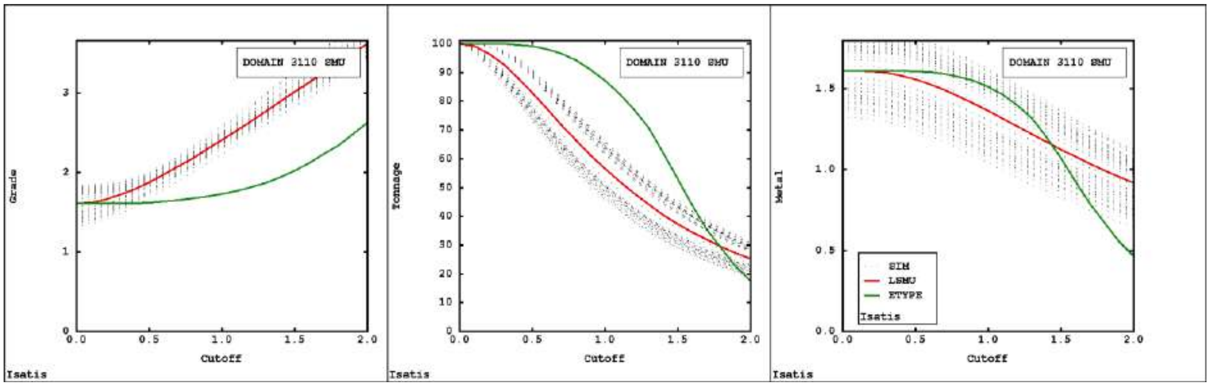


Figure 14-146 Adubiaso Grade Tonnage Validation

The global grade tonnage curve is shown in Figure 14-147 for the LSMU model and simulation average. The LSMU model reflects the selectivity shown in the simulation realizations (discussed above) and is higher than that for the simulation average, as expected. The simulation average typically performs in a similar manner to that of a linear kriged estimation and gives an indication of what a smoother kriged model would look like in terms of selectivity.

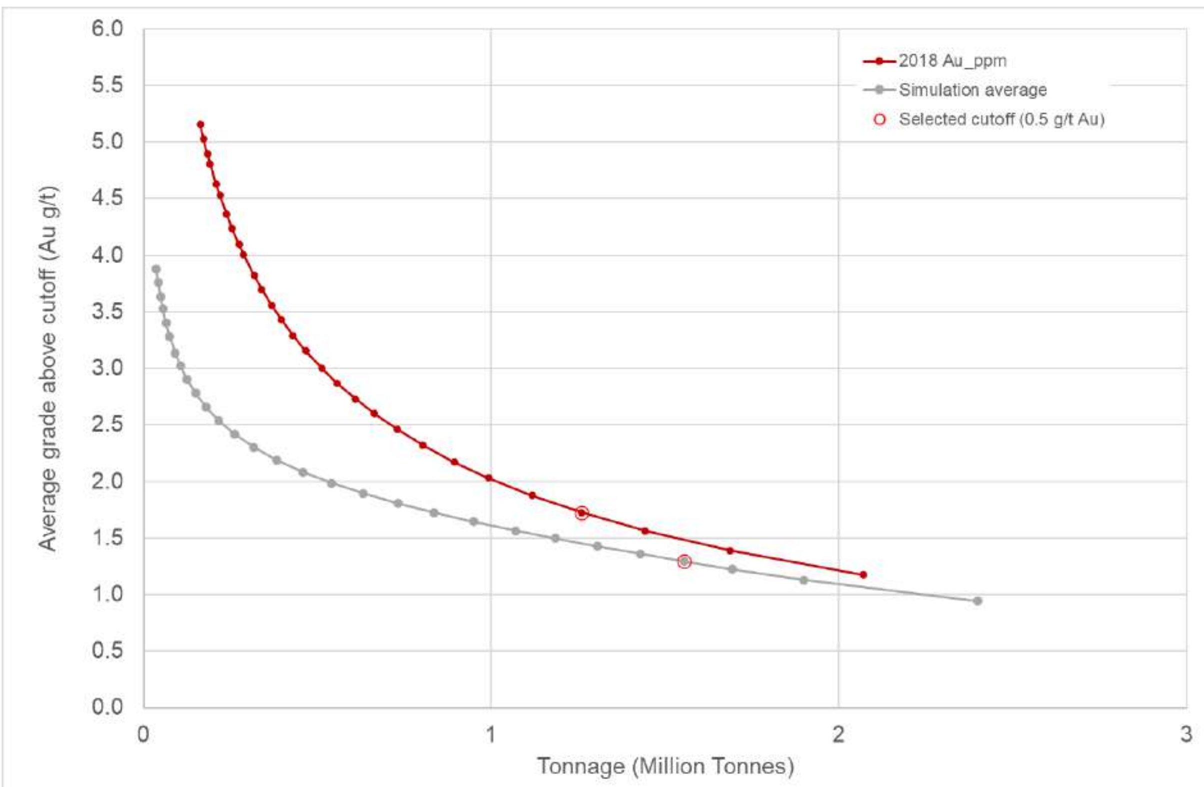


Figure 14-147 Adubiaso Global Model Grade Tonnage Curve

14.8.5.2 Information Effect

It is common in most recoverable resource techniques to apply an information effect. The purpose of the information effect is to make an allowance that "perfect" selectivity of SMUs will never be achieved as mining selection will be based on a short-term model from grade control spaced drilling and a degree of smoothing will be present due to this. Information effect is generally applied as a variance reduction

when modelling the SMU distribution. In this case no information effect has been applied as there is already a reduced variance in the simulations.

14.8.5.3 Mining Selectivity

This model has not been adjusted to represent mining selectivity for optimisation. The LSMU model using a conditional simulation approach with minimal smoothing, results in a high selective SMU block scale model. The degree of selectivity represented is much higher than that which will me achieved at the mining stage. Designed dig blocks that consolidate multiple SMU sized blocks into a larger contiguous mining shape to incorporate SMU blocks with grades below the desired cutoff (internal dilution) is recommended for mine planning.

14.8.5.4 Reconciliation

No grade control or production has been undertaken at this project, so no reconciliations can be made.

14.8.6 Classification of Mineral Resources

Drill spacing is the primary factor to define resource classification and only Indicated and Inferred resources are defined at Adubiaso. The 2014 Indicated classification used a nominal drill spacing of 20 x 20 metres, with the remainder being classified as Inferred. This spacing is inconsistent with other Asanko Gold deposits where a 40 x 40 metre drill spacing had been used to classify material as Indicated. A new classification scheme was proposed and applied (Table 14-88) and a comparison between 2014 and the current block classification is shown in Figure 14-148.

Table 14-88 Adubiaso Classification Criteria

Classification Category	Drill Spacing (m)	Use
Measured	Measured classification not applied	
Indicated	40 x 40 drilling	Suitable for long-term mine planning
Inferred	80 x 80 drilling	Suitable for conceptual studies

Based on the amount of unknown artisanal mining, consideration should be given to downgrading all material within 15 metres of surface to Inferred in future Mineral Resource updates.

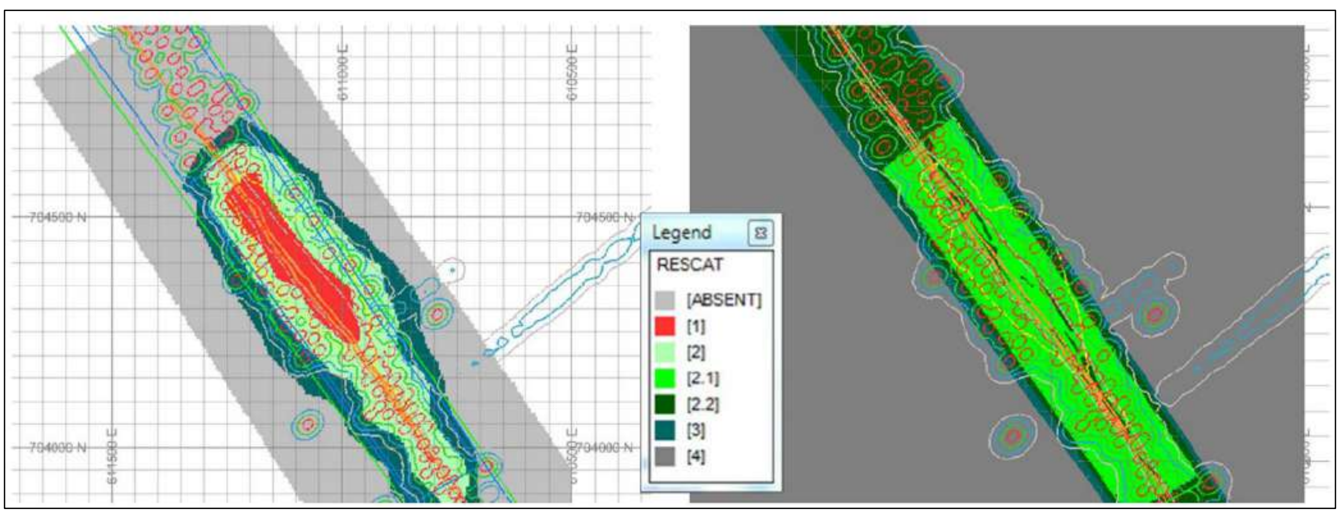


Figure 14-148 Comparison of 2014 and Current Block Classification

14.8.7 Reasonable Prospect of Eventual Economic Extraction

The Adubiaso mineralization is assumed amenable to open pit mining, and milling and recovery through CIL gold processing, and was evaluated for reasonable prospects for eventual economic extraction by constraining the Mineral Resources within a conceptual pit shell optimized in NPV Scheduler™. The assumptions used in preparing the conceptual pit, include mining and processing costs, metallurgical recovery, metal price and general and administrative costs, and are shown in Table 14-89 and approximately correspond to the 0.50 g/t Au Mineral Resource cut-off. *See "Cautionary Note about Mineral Resources".*

Table 14-89 Adubiaso Conceptual Constraining Pit Parameters

Parameter	Value
Gold Price (US$/ounce)	1,600
Mining Cost (US$/tonne)	1.025 – 1.647
Mining Cost Incremental (US$/Vertical 6m)	0.0043 – 0.0176
Mill Feed Transport (US$/tonne)	1.65
Process Cost (US$/tonne)	8.97 – 11.32
Gold Recovery (%)	94%
General and Administration (US$/tonne)	6.55

14.8.8 Mineral Resource Statement

The Adubiaso Mineral Resource estimate is reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.

The Qualified Person is Eric Chen, P.Geo. who is Galiano Gold's former Vice President of Technical Services. The effective date is February 28, 2022. The Mineral Resource estimate is reported assuming open pit mining and milling and CIL gold processing methods using a cut-off grade of 0.5 g/t Au, is constrained within a conceptual open pit prepared using NPV Scheduler™ software. The Mineral Resource estimates are summarized in Table 14-90. The estimated grades and tonnages for multiple cut offs are shown in Figure 14-149.

Table 14-90 Adubiaso Mineral Resource Estimate at a 0.5 g/t Au cut-off and $1,600/oz Au, as of February 28, 2022

Category	Cutoff Grade (g/t Au)	Tonnes (kt)	Au (g/t)	Au Metal Contained (koz)
Measured	0.5	0	0	0.0
Indicated	0.5	1,554	1.80	90
Measured & Indicated	0.5	1,554	1.80	90
Inferred	0.5	213	1.38	9

Notes:

1. *The Mineral Resource estimates are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014.*
2. *The effective date for the Mineral Resource estimates is February 28, 2022*
3. *Mineral Resource estimates account for mining depletion as of February 28, 2022*
4. *Reasonable Prospects for eventual economic extraction assume open pit mining with conventional gold processing and was tested using NPV Scheduler™ pit optimization software using several technical parameters including:*
    a. *$1,600/oz Au price*
    b. *$1.025/t to $1.647/t mining costs*
    c. *$1.65/t mill feed transport costs*
    d. *$8.79/t to $11.32/t processing costs*
    e. *94% Au recovery for all material*
    f. *$6.55/t G&A*
5. *Applicable rounding has been applied to the stated tonnages, grades, and metal content to reflect the level of accuracy and precision of the estimate*

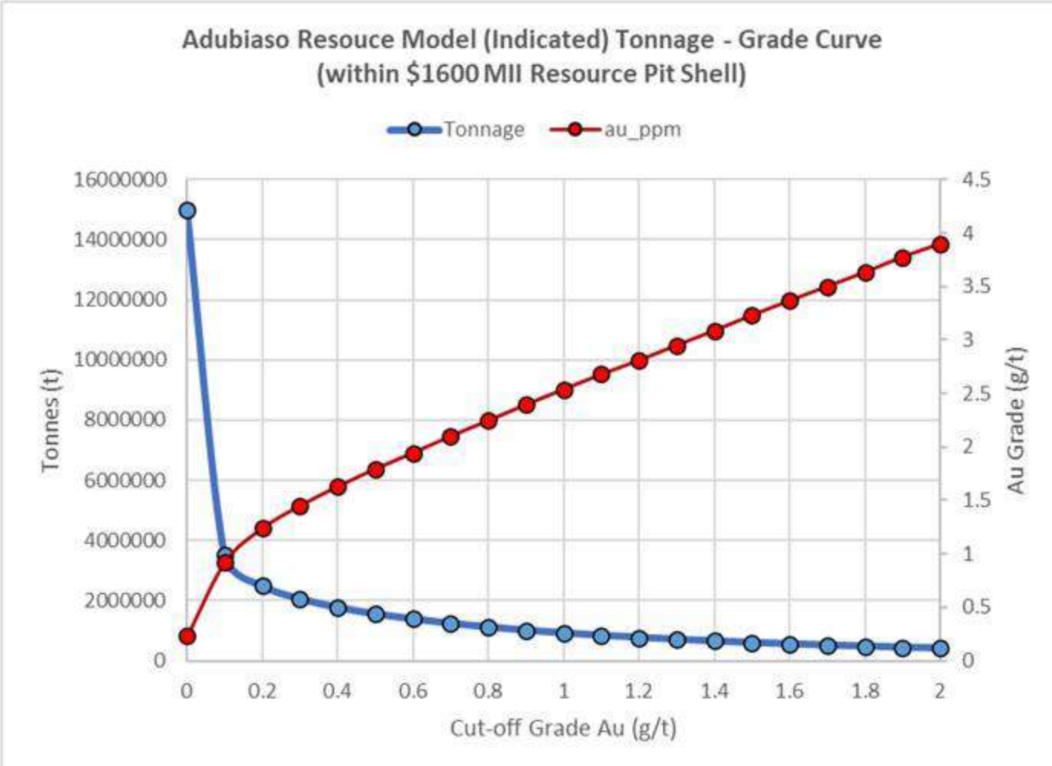


Figure 14-149 Adubiaso Tonnage - Grade Curve for Indicated Mineral Resources

14.8.9 Factors That May Affect the Mineral Resource Estimate

Other than as discussed in other sections of this report there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, and political or other relevant issues that may materially affect the Mineral Resource estimates. Other relevant factors that may materially affect the Mineral Resources, including mining, metallurgical recovery, and infrastructure are reasonably well understood according to the assumptions presented in this Report.

15 MINERAL RESERVE ESTIMATES

Not applicable at the current stage of the Project.

16 MINING METHODS

Not applicable at the current stage of the Project.

17 RECOVERY METHODS

17.1 Process Description

The existing Asanko Gold Mine process plant located at Obotan is capable of processing approximately 5.8 Mtpa of total mill feed. Esaase material is being processed at present with supplementary feed from Akwasiso.

The key process operating criteria are shown in Table 17-1, the major equipment in Table 17-2 and the process block flow diagram in Figure 17-1.

Table 17-1 Key Process Plant Operating Criteria

Parameter	Units	Value
Crushing plant running time	Hours/annum (hpa)	5,957
Crushing plant feed rate	Tonnes per hour (tph)	975
Milling and carbon in leach (CIL) plant running time	hpa	7998
Milling and CIL plant feed rate	tph	725
Life of Mine (LOM) Au head grade	g/t	1.38
LOM gravity gold recovery	%	50
Run of Mine (ROM) feed size (F_{100})	mm	800
Semi-autogenous (SAG) mill feed size (F_{100})	mm	270
SAG mill feed size (P_{80})	mm	90
Leach feed size (F_{80})	µm	106
CIL retention time (8 stages)	hr	17.4
CIL slurry feed density	% w/w	50.2
CIL feed gold grade	Au g/t	0.69
LOM average CIL cyanide (NaCN) consumption	kg/t	0.45
LOM average lime (CaO) consumption	kg/t	0.98
Elution circuit type		Split AARL
Elution circuit size	t	5
Frequency of elution	batches/day	2

Note: AARL – Anglo American Research Laboratories

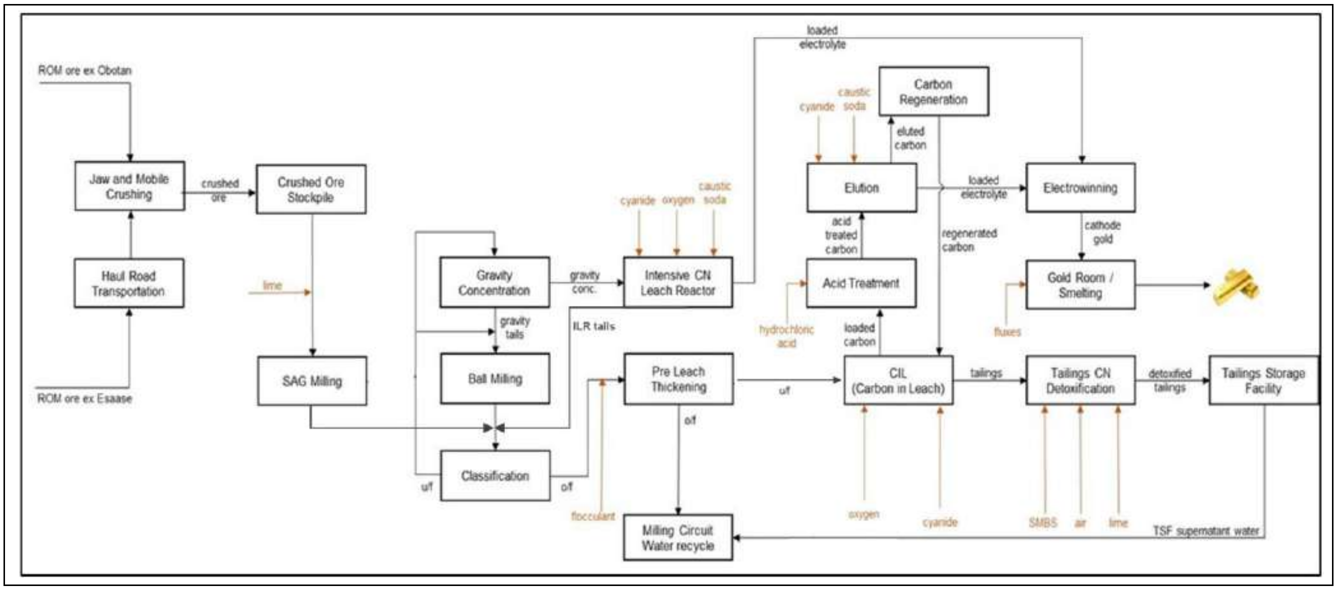


Figure 17-1 Process Plant Block Flow Diagram

Table 17-2 AGM Process Plant Major Equipment

Equipment Description	No. of Units	Specification	Power (kW)
Nkran primary jaw crusher	1	CJ815	200
Nkran mobile jaw crusher unit	1	Model WJ1175	110
Nkran mobile jaw crusher unit	1	Model UJ440i	Diesel
Primary SAG mill	1	Shell support; discharge pebble ports; 8.6 m diameter; inside shell: 4 m equivalent grinding length (EGL)	6,500 LRS /SER
Secondary ball mill	1	Shell support: overflow; 5.8 m diameter; inside shell: 9.1 m EGL	5,600 LRS
Gravity gold recovery scalping screen	3	Horizontal vibratory, 2.44 m width x 4.88 m length; aperture 3 mm x 19 mm	44 (4 x 11)
Gravity gold concentrator	3	KC-QS48 (G5 cone)	55
Gravity intensive leach reactor	2	2000 BA reactor; 3.2 m^3	4
Gravity recovery electrowinning cells	2	12 cathode, 14 anode; 316 stainless steel (SS); 0.73 m (width) x 1.35 m (height) x 1.01 m (length); 1,000 A	12
Pre-leach trash screen	1	Horizontal vibratory, 3.05 m (width) x 6.10 m (length); aperture 0.8 mm x 8.8 mm	44 (4 x 11)
Pre-leach thickener	1	30 m diameter; high rate	11 (hydraulic)
CIL leach tank	8	14.0 m diameter x 14.3 m height; flat bottom; 2,100 m^3 live volume	
CIL tank agitator	8	XHH/90/15/90/M4PVSFK (MSRL) hydrofoil dual impeller	90
CIL inter-stage screens	8	MPS 1450(P); 14.5 m^2; 304 L SS; aperture 800 µm	22
Elution column	1	5 t carbon capacity, 13 m^3 total volume, SAF 2507 duplex SS	
Regeneration kiln	1	Horizontal tube; tube 321SS, 750 kg	Diesel
Elution electrowinning cells	6	12 cathode, 14 anode; 316 SS; 0.73 m (width) x 1.35 m (height) x 1.01 m (length); 1,000 A	12

Note: LRS – Liquid resistance starter; SER – modern slip energy recovery drive; MSRL – mild steel rubber lined; SS – stainless steel

17.2 Crushing

17.2.1 Esaase Source

ROM Esaase material P_{100} of 800 mm is loaded onto haul trucks which transports the material approximately 28 km to Obotan, where it is crushed in the crushing plant and thereafter joins the Obotan crushed material ahead of feeding to the milling circuit.

17.2.2 Obotan Source

The primary crushing circuit consists of a single tip with a dedicated ROM bin and a single jaw crusher in open circuit. Primary crusher product reports to the crushed ore stockpile (COS). The ROM (F_{100} 800 mm, F_{80} 500 mm) is loaded into a 100 t ROM bin by means of a front-end loader (FEL), or by direct tipping by haul trucks.

The ROM is drawn from the ROM bin at a controlled rate by a single, variable speed apron feeder, and fed directly to the jaw crusher. The speed of the apron feeder is controlled to maintain crusher throughput. Fine material spillage from the apron feeder reports to the primary crushing conveyor, where it is combined with the primary crusher product (P_{100} 300 mm, P_{80} 125 mm). The primary crushing conveyor is fitted with a belt magnet to remove any tramp iron material. The primary crushing conveyor discharges the crushed material onto the COS.

17.3 Milling

The milling circuit is configured as a SAG milling, ball milling, crushing circuit (SABC circuit) comprising a primary SAG mill, a secondary ball mill and a pebble crushing circuit. Mill feed is withdrawn from the 1,550 t COS by apron feeders feeding onto the SAG mill feed conveyor. A weightometer indicates the instantaneous and totalized crushed mill feed tonnage and is used to control the SAG mill feed rate via the apron feeders as well as the addition rate of supplementary Esaase oxide material. The SAG mill feed conveyor discharges directly into the SAG mill feed hopper. The SAG mill discharge is screened via a 15 mm x 50 mm aperture trommel screen before gravitating to the ball mill discharge sump. Screen oversize is conveyed to a single pebble crusher, where it is crushed to below 12 mm prior to recycling back to mill feed conveyor. The pebble crusher feed conveyor is fitted with a weightometer for control purposes. A SAG mill pebble bunker is installed, in which any pebble overflow is stored for further handling.

The SAG mill operates in open circuit, discharging directly into the ball mill discharge sump, and in closed circuit with the pebble crusher. The ball mill discharges into a sump from where the slurry is pumped to the cyclone classification circuit. A portion of the cyclone underflow (84% target) is diverted to the three gravity concentration units, each with its own scalping screen, which removes the oversize fraction and diverts this back to the ball mill discharge sump. The remaining cyclone underflow portion reports back to the ball mill discharge sump for further grinding. Gravity recovered gold concentrate reports to an intensive leaching reactor circuit (ILR) while the gravity tailings reports back to the ball mill discharge sump.

Cyclone overflow gravitates to the pre-leach thickening circuit, comprising a single high-rate thickener, where it is thickened to approximately 50% solids ahead of leaching and gold adsorption in the CIL circuit. Supernatant solution overflowing the thickener is recycled back to the process plant.

Quicklime is stored in a 100 t silo and is metered onto the SAG mill feed conveyor using a variable speed screw feeder. Quicklime is delivered to site by tanker and pneumatically transferred to the lime silo using an off-loading blower.

A ball loading system is used for loading of grinding media into the SAG mill (via the SAG mill feed conveyor).

Dust control is by way of a water dust suppression system at the stockpile area.

A mobile crushing array is used to assist with crushing of the ROM material, to optimize fragmentation and maintain throughput in the crushing circuit. Dust suppression, for dust control, is used at the crushing circuit.

17.4 Gravity Gold Recovery

Gravity concentrate originating from the three milling gravity recovery concentrators is treated in two ILRs. These reactors contain elevated levels of cyanide, caustic soda, catalyst and oxygen to enable maximum leaching of the precious metals in the concentrate. Leach residence time is approximately 8 hours. At the end of the leach cycle the pregnant solution is treated for gold recovery in two dedicated electrowinning cells to facilitate separate metallurgical accounting. ILR residue is pumped to the ball mill discharge sump. Average gravity recovery is approximately 50%.

17.5 Pre-leach Thickening

The secondary ball mill classification cyclone overflow stream gravitates to a horizontal vibrating trash removal screen, to remove any coarse particles, wood fragments, organic material and plastics that would otherwise become locked up with the circuit carbon and block the CIL inter-stage screens. The trash screen oversize reports directly to a trash bin, whilst the underflow reports to the pre-leach thickener, via a two-stage sampling system.

The pre-leach thickener is a high-rate thickener producing an underflow product of between 50% to 60% solids (w/w). The thickened underflow slurry is pumped to the CIL circuit by means of an underflow pump.

The thickener overflow product gravitates to the process water circuit. Flocculant and lime are added to the thickener feed.

17.6 Carbon in Leach (CIL)

The CIL circuit comprises 8 agitated tanks, numbered 0 to 7. This follows the conversion, in October 2021, of the pre-oxidation tank to CIL operation. This is now designated as Tank 0. Slurry and carbon flows are counter current with loaded carbon pumped upwards in the circuit and exiting at either Tank 0 or Tank 1. The slurry gravitates from Tank 0 to 7 through inter-stage screening (vertical, mechanically swept wedge wire screen) in each tank (facilitating carbon retention), exiting from CIL Tank 7 over a carbon safety screen, to recover any stray carbon particles. Each of the tanks contains a bypass facility which allows the removal of any tank from service for maintenance while CIL operation is continued.

Oxygen (90% purity) from the three, pressure swing absorption (PSA) plants, is added to all tanks. The first tank has 3 intensive reactor injection units installed in the slurry feed line in addition to the oxygen sparging in the tank to elevate the dissolved oxygen level to approximately 20 ppm. The remaining tanks are sparged with oxygen to target 17 ppm dissolved oxygen. This process enhances the dissolution of oxygen into the leach slurry, minimizing cyanide consumption and improving gold leach kinetics by increasing the dissolved oxygen concentration

Total slurry residence time is approximately 17.4 hours. Carbon concentration per stage is 11 g/L with an anticipated loaded carbon value of 1,250 g/t in the first CIL tank. Daily loaded carbon throughput is approximately 10 t.

17.7 Tailings and Detoxification

As per International Cyanide Management Code (ICMC) guidelines, the CIL tailings needs to be discharged with a final cyanide concentration of less than 50 g CN_{WAD}/m^3 at the TSF spigot.

The current plant operating parameters result in no need for cyanide detoxification of the CIL tailings as the CN_{WAD} values are generally below the 50 ppm compliance standard.

However, provision has been made to use the INCO air/SO_2 process for cyanide detoxification. The current detoxification circuit comprises a cyanide destruction feed box, gravity feeding into a single agitated tank, with a blower air sparging facility.

The detoxification process utilizes SO_2 and air in the presence of a soluble copper catalyst to oxidize cyanide to the less toxic compound cyanate (OCN). Sodium meta-bisulphite (SMBS) is used as the SO_2 source and is dosed into the cyanide destruction feed box as a 20% weight/volume (w/v) solution. The detoxification process requires the presence of soluble copper to act as a catalyst and to ensure that any free cyanide present is bound to copper as a CN_{WAD} component. Provision is made for the preparation and dosing of a copper sulphate solution, for dosing to the cyanide destruction feed box as a 15% w/v solution when required. Oxygen required in the reaction will be supplied by sparging of blower air into the cyanide detoxification tank. The reaction is carried out at a pH of 8.5 which is maintained by controlled lime addition to the cyanide destruction feed box. The detoxified tailings are then pumped to the TSF. Supernatant TSF water is recovered via a barge pump and recycled to the plant as process water.

17.8 Carbon Treatment

Carbon is received from the loaded carbon recovery screen and loaded directly into the acid wash column. The carbon treatment circuit is designed to handle a batch size of 5 t of loaded carbon per elution. Based on the mass balance, an average of 60 elutions are required per month. The circuit comprises cold acid washing, using a solution of 3% HCl concentration, to remove inorganic foulants such as carbonates, a split AARL elution process operated at approximately 125°C, using an eluant solution comprising 3% NaCN and 3% NaOH, regeneration of the eluted carbon in a rotary kiln at 750°C to remove organic foulants such as grease and oils, and ultimately electrowinning of the pregnant solution in four dedicated electrowinning cells situated in the gold room.

The elution process may be described in more detail as follows. The caustic solution is pumped into the strip (elution) solution make-up tank from the caustic mixing tank and the cyanide solution is pumped from the cyanide dosing tank. The reagents are mixed with filtered raw water in the strip solution make-up tank at the correct concentrations. When the elution column is filled, the strip solution pump turns on and pumps the strip solution through the recovery heat exchangers followed by the primary heat exchangers before entering the bottom of the elution column at 125°C. The strip solution is recycled through the carbon column via the strip solution pump, at a flow rate of two bed volumes per hour (BV/h) equivalent to 20 m^3/h, for a total of 50 minutes resulting in a carbon strip (removal of gold from the carbon). Eluate produced during the elution cycle is pumped to either one of the two eluate storage tanks located in the electrowinning area.

The fresh strip solution cycle is followed by a spent solution cycle. During this cycle, the rinse solution from the previous elution (stored in the intermediate solution tank) is circulated through the elution column at 125°C a rate of two BV/h (20 m^3/h) for 150 minutes. Once the cycle is complete, the spent solution is pumped to either one of the two eluate storage tanks.

Following this, the rinse cycle involves pumping water for 150 minutes at a rate of two BV/h through the elution column and storing the resulting solution in the intermediate solution tank for the spent solution cycle in the subsequent elution cycle. On completion of the elution cycle, cooling water is pumped from the intermediate solution tank, through the elution column at a rate of two BV/h for 30 minutes and reports to the CIL circuit.

Eluted carbon is removed from the elution column and transferred to the carbon regeneration kiln, via the static sieve bend drainage screen, by means of pressurized water. Drained carbon gravitates to the carbon regeneration kiln feed bin from where it is fed to the carbon regeneration kiln. The regenerated carbon is collected in the barren carbon quench tank, from where it is pumped to the carbon dewatering screen for re-introduction to the CIL circuit via CIL Tank 6 or CIL Tank 7.

17.9 Electrowinning

Currently the pregnant leach solution (PLS) from the ILR is collected in the ILR pregnant solution storage tank. This pregnant solution is circulated through two dedicated electrowinning cells via a common steady head tank.

Pregnant solution from the carbon elution circuit is collected in either one of the two eluate storage tanks. This solution is circulated through a dedicated electrowinning circuit consisting of four cells operating in parallel via a common steady head tank.

Gold is deposited on the electrowinning cell cathodes as a sludge while the solution is circulated until the desired barren gold concentration is achieved, or the cycle time has elapsed. After completion of an electrowinning cycle, barren solution is sampled before being pumped to the CIL feed. Loaded cathodes are removed periodically from the cells, the gold sludge is washed off using a high-pressure washer after which the washed solution is decanted.

Hydrogen cyanide, ammonia, and hydrogen gas detection equipment is installed in the electrowinning circuit, together with relevant extraction and ventilation systems.

17.10 Gold Room

Electrowon gold is recovered from the cathodes and the electrowinning cells using high pressure water jet sprays. The precious metal slurry is then filtered and dried in a drying oven at approximately 110°C to remove associated moisture. Once dried the precious metal powder is smelted in the melting furnace at approximately 1,700°C with fluxes, such as borax, sodium carbonate and silica to remove base metallic impurities such as copper, iron etc. The molten bullion mixture is then poured in moulds, allowed to solidify, cleaned, sampled and stamped with the mine name and sequential bar number. Gold content varies from 85% to 90%, with approximately 10% silver and approximately 2% to 5% base metal content. The bars are dispatched periodically to a refiner for production of 99.99% gold bars. Slag from the smelting may be re-smelted if the gold content warrants this or be returned to the SAG mill for recovery through the circuit. Additional equipment in the gold room includes safes, scales, and various security systems.

17.11 Reagents

17.11.1 Flocculant

Flocculant is delivered to site dry in 25 kg bags and is added manually to the flocculant hopper. The flocculant is then fed into a venturi tube by a screw feeder, where it is pneumatically transferred into a wetting head. The dry flocculant is mixed with filtered raw water up to a 33% (w/v) solution and discharged into the flocculant mixing tank where additional raw water is added. After a suitable hydration period under agitation, the flocculant solution is pumped to the flocculant storage and distribution tank, from where it is dosed to the respective areas by means of a ring main system fed via a duty/standby variable speed pumping arrangement.

17.11.2 Copper sulphate

The current installation allows for the delivery of copper sulphate in 1.25 t bulk bags, and manual addition to the mixing tank using a hoist and a bag breaker system. Provision is made for the addition of filtered raw water to the mixing tank to dilute the copper sulphate to a 15% (w/v) solution. The copper sulphate solution gravitates from the mixing tank to the dosing tank, from where it can be dosed directly to the plant CIL tailings cyanide detoxification circuit via a duty/standby variable speed pumping arrangement when required. Copper sulphate spillage is pumped to the CIL tailings cyanide detoxification circuit.

17.11.3 Sodium Metabisulphite (SMBS)

The existing installation allows for the delivery of SMBS in 1.2 t bulk bags and manual addition to the mixing tank using a hoist and a bag breaker system. Provision is made for filtered raw water addition to the mixing tank to dilute the SMBS to a 20% (w/v) solution. When required, the diluted SMBS solution will be pumped from the mixing tank to the dosing tank, from where it will be dosed directly to the cyanide detoxification circuit and reverse osmosis (RO) plant via a duty/standby variable speed pumping arrangement.

17.11.4 Diesel

Diesel is delivered to the plant site by the fuel tanker and stored in a diesel storage tank for distribution to the generators associated with the fire water system, elution circuit, carbon regeneration kiln and the gold room.

17.11.5 Caustic Soda

Caustic is delivered to site in 1 t bags of 'pearl' pellets. The bags are hoisted by a crane into the mixing tank via a bag breaker system. The caustic soda is diluted with filtered raw water up to a final solution concentration of 20% (w/v). The diluted caustic solution is pumped from the mixing tank to the dosing tank, from where it is dosed to the respective areas (ILR, elution, and electrowinning) by means of a duty/standby variable speed pumping installation.

17.11.6 Sodium Cyanide

Sodium cyanide is delivered as dry briquettes in 1 t boxes and added manually via a hoist and bag breaking system into the mixing tank. Filtered raw water is used to prepare a 20% (w/v) solution in the mixing tank. The diluted solution is pumped from the mixing tank to the dosing tank, from where it is distributed by means of dedicated variable speed dosing pumps.

17.11.7 Hydrated Lime

Hydrated lime is delivered dry in 1 t bulk bags, and manually loaded to the lime make-up tank via a hoist and bag breaker system. The hydrated lime is fed into the lime make-up tank by means of a screw feeder. Filtered raw water is added to the make-up tank to produce a 20% (w/v) solution. The diluted milk of lime is distributed throughout the plant by means of a ring main system fed by a fixed speed duty/standby pumping installation.

17.11.8 Ferric Chloride

Ferric chloride is delivered in 25 kg bags which are manually loaded via a hoist and bag breaking system into the mixing tank. Filtered raw water is added to the mixing tank to prepare a 20% (w/v) solution. The diluted solution is dosed directly from the mixing tank to the return water treatment circuit, by means of a variable speed, duty/standby pumping installation.

17.11.9 Hydrochloric Acid

Hydrochloric acid is delivered in 1,000 L bulk containers at a solution strength of 33% w/v. This is used to acid wash the pregnant carbon prior to gold elution taking place.

17.11.10 Quicklime

Quicklime is delivered in 36 t bulk tankers and pneumatically off-loaded from the tanker into the lime silo. The lime is extracted from the silo using a variable speed screw feeder and dosed directly onto the SAG mill feed conveyor. A suitable dust extraction system is installed on the quicklime dosing system.

17.11.11 Anti-scaling Agent

The anti-scaling agent is delivered in 1 t intermediate bulk containers, from where it is pumped to the anti-scalant storage tank. The anti-scalant reagent is pumped from the storage tank, through the elution heat exchangers, back to the storage tank.

17.11.12 Activated Carbon

Fresh activated carbon is delivered in 500 kg bulk bags. The fresh carbon is added to the carbon quench tank using a hoist, as required for carbon make-up to the CIL circuit. The addition point will allow attrition of any friable carbon particles with subsequent fines removal on the sizing screen prior to entering the CIL tanks.

17.11.13 Grinding Media

The forged steel (125 mm diameter) grinding media is used in the SAG mill, while 60 mm grinding media is used in the secondary ball mill.

Grinding media is delivered in 200 L drums. SAG mill balls are added to the mill using a hydraulic ball feeder which discharges directly onto the mill feed conveyor. Secondary ball mill media is added to the ball mill feed box by use of a specially designed kibble and hoist, which safely transports the media from the loading area to the feed box.

17.12 Plant Process Services

17.12.1 Filtered Raw Water

Raw water is currently supplied to the plant raw water storage tank from the pit dewatering boreholes and several borehole pumps. Additional raw water is sourced from the Sediment Control Structure 4 and pumped to the plant raw water tank, via the raw water treatment plant.

Provision has further been made on site to route tailings return water to the plant raw water storage tank via the discharge water treatment settling and RO plant.

The raw water is used for gland service, carbon transfer duties, elution, gravity concentrator circuit water, and reagent make-up.

The raw water storage tank has a reserve of water for fire-fighting purposes. This reserve is maintained by suitability positioned fire water and raw water pump suctions.

17.12.2 Fire Water

Firewater is drawn from the raw water tank. The firewater pumping system contains:

- An electric jockey pump to maintain fire water ring main pressure
- An electric fire water delivery pump
- A diesel driven fire water pump that automatically starts in the event that power is unavailable for the electric firewater pump.

Fire hydrants and hose reels are placed throughout the process plant, fuel storage and plant offices at intervals that ensure coverage in areas where flammable materials are present.

17.12.3 Potable Water

Potable water is taken from the borehole water line. It is pumped through a water treatment plant before being stored in the potable water tank. The potable water tank feeds the plant potable water tank, from where the plant and mining potable water is distributed.

17.12.4 Process Water and Plant Run-off

Plant run-off is contained in the pollution control dam, from where it is pumped to the plant process water dam.

The plant process water dam collects the water from the pit-dewatering pumps, TSF return water, and any plant run-off from the pollution control dam. Provision is made for a raw water make-up stream, as required. Filtered water to the plant gravity concentration circuit is supplied by a dedicated pump system, while the remainder of the process water reticulation is undertaken by means of a duty/standby pumping arrangement. Provision is made in the design for the treatment of excess process water prior to discharge to the environment.

17.12.5 Discharge Water Treatment

The plant design allows for the treatment of the excess process water in a mechanically agitated arsenic precipitation tank, where ferric chloride would be dosed to precipitate out arsenic from solution (in the presence of oxygen), at a pH of 6. Provision was made for lime addition and hydrochloric acid addition to this tank, as required for pH control. The current design allows for the treated water to overflow to an intermediate transfer tank, from where it is pumped to a RO water treatment plant, complete with pre-filters, prior to discharge. Filter cake product from the RO plant filters will be re-pulped with RO brine in the arsenic waste disposal tank, from where it will be pumped to the final tailings disposal circuit.

17.12.6 High Pressure (Compressed) Air Reticulation

Plant instrument and plant air at 8.0 bar pressure are supplied by a dedicated, duty/standby compressor installation. The compressed air is stored in the instrument air receiver while a dedicated air receiver, located in the milling area, is provided for plant air storage, and is fed from the main instrument air receiver.

All compressed air is dried and filtered prior to storage in the instrument air receiver, from where it is reticulated throughout the plant for instrument air requirements.

17.12.7 Low Pressure (Blower) Air Reticulation

A total of three low pressure blowers supply air to the water treatment circuits.

17.12.8 Oxygen Reticulation

The plant currently utilizes a 15 tpd oxygen plant (comprising three modules of 5 tpd each) to generate oxygen at 90% purity and 300 kPa pressure, for use in the ILR, pre-oxidation, and CIL circuits. The oxygen is stored in the oxygen plant air receiver from where it is distributed.

17.12.9 Return Water and Return Water Treatment

The TSF return water is pumped from the TSF via a duty/standby pumping installation to the plant process water circuit. AGM has made provision for the routing of the TSF return water to the discharge water treatment and RO plant for treatment prior to discharge to the plant raw water tank, to supplement the raw water requirement.

18 PROJECT INFRASTRUCTURE

18.1 Overview

18.2 Existing Infrastructure

The Obotan plant commenced production in early 2016. The plant was erected close to the Nkran deposit and several satellite orebodies. The plant is currently processing 5.8 Mtpa of material.

18.2.1 Obotan – Existing Site Infrastructure

Current site infrastructure at Obotan includes:

- An established mining operation with various structures, including offices, stores, workshops and fuel storage facilities
- A CIL process plant with various structures, including offices, stores, workshops and reagent storage / mixing facilities
- An administration block, training facilities, exploration offices, core storage area, clinic and analytical laboratory
- Senior and junior accommodation facilities located to the west of the Nkran pit
- Tailings Storage Facility
- Waste rock dumps at Nkran, Akwasiso, and Dynamite Hill
- Multiple boreholes for water supply
- Water treatment plant (construction in progress)
- A 161 kV incoming power line from the Asawinso substation
- Mobile communications facilities. A Vodafone tower is located at the Obotan camp and MTN connectivity is also available.

18.2.2 Esaase – Existing Site Infrastructure

Current infrastructure at Esaase includes:

- An exploration camp and office
- A geological core shed
- Basic camp requirements such as a clinic, offices, kitchen, accommodation, potable water services, power supply, IT connectivity, radio communications and sewage system
- Mine service facilities, including mobile equipment workshops, wash bays, fuelling stations, and administrative buildings
- Water treatment plant
- Waste rock dumps
- Community services including hospital and community boreholes
- 33 kV overhead power line supplied by the Electricity Company of Ghana (ECG).

18.2.3 Esaase-Obotan Haul Road

The 28 km Esaase to Obotan haul road was upgraded in 2019 to support annual haulage rate of 3.0 - 3.6 Mtpa. Table 18-1 below summarizes the main design criteria for the road upgrade:

Table 18-1 Esaase to Obotan Haul Road Upgrade – Summary of Design Criteria

Description	Specification
Lane width	3.5 m - 4.5 m
Shoulder width	1.0 m - 1.5 m
Road width	9.0 m -12.0 m
Maximum design speed	60 km/h (50 km/h with the current design)
Maximum gradient	10% (1:10)
Cross fall slope	3% (recommended – 1% to 4%)
Base and Sub-base	Selected Graded Material
Surfacing	Compacted Gravel wearing course (no seal)
Finished road level	700 mm above NGL (200 mm-700 mm above NGL)

18.3 Site Layout

18.3.1 Obotan Layout

The processing plant area is well established on two bulk earthworks terraces with all the major infrastructure already in place. Figure 18-1 shows the Obotan site plan and surrounding infrastructure.

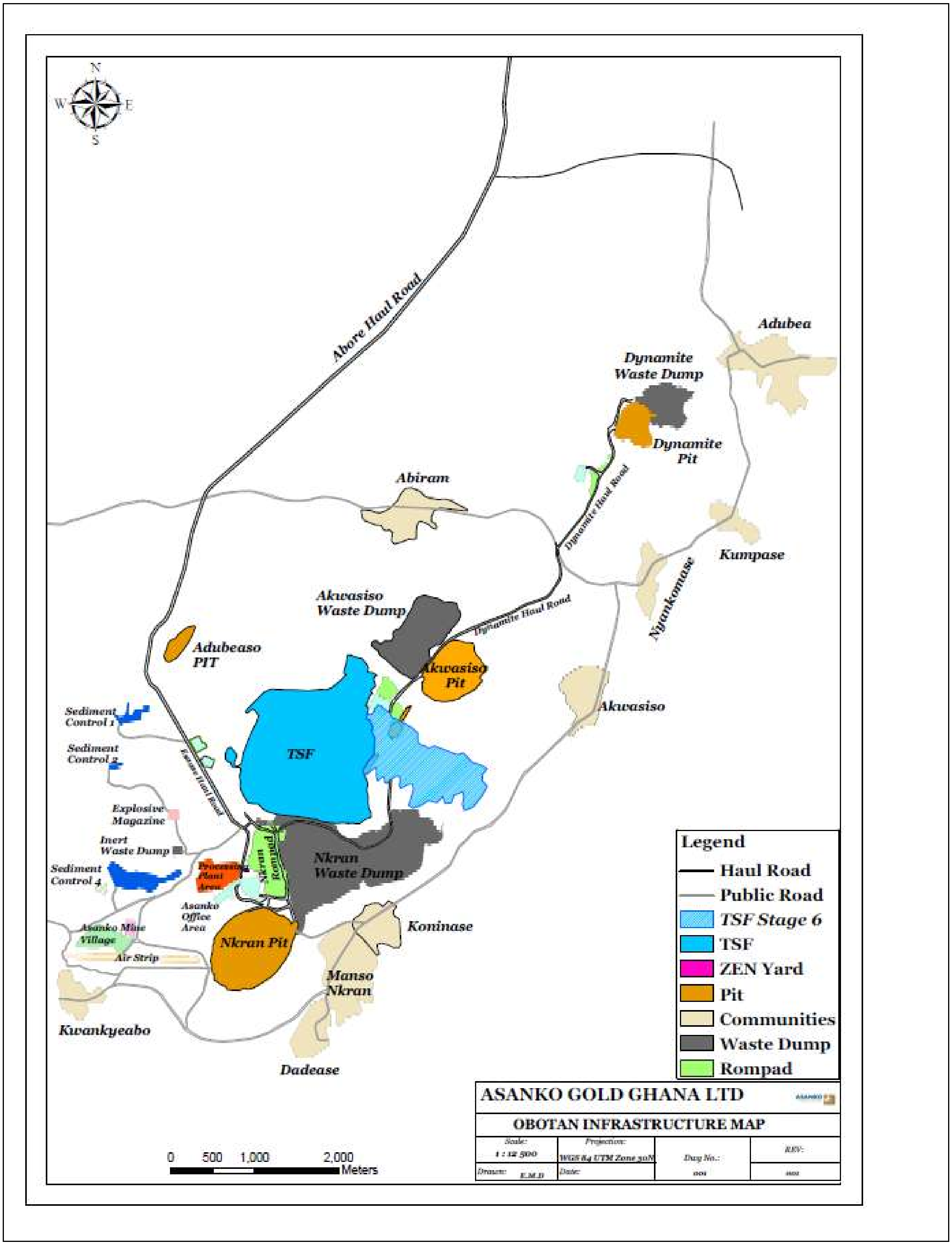


Figure 18-1 Obotan Site Plan and Surrounding Infrastructure

Source: Asanko Gold Mine, 2021

Figure 18-2 shows a closer view of the processing plant.

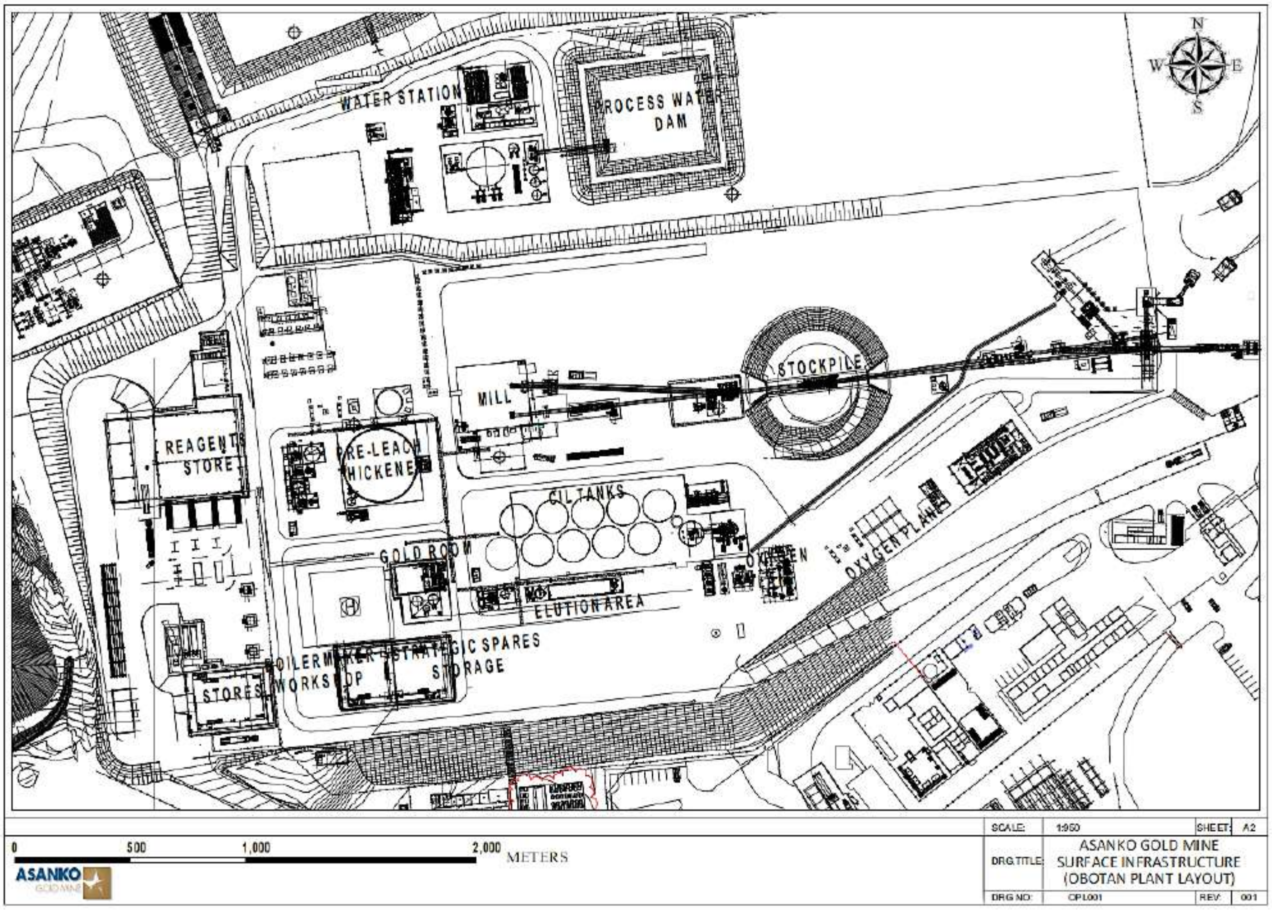


Figure 18-2 Process Plant Layout

Source: Asanko Gold Mine, 2021

18.3.2 Esaase Layout

The Esaase site plan and the surrounding infrastructure is illustrated below in Figure 18-3.

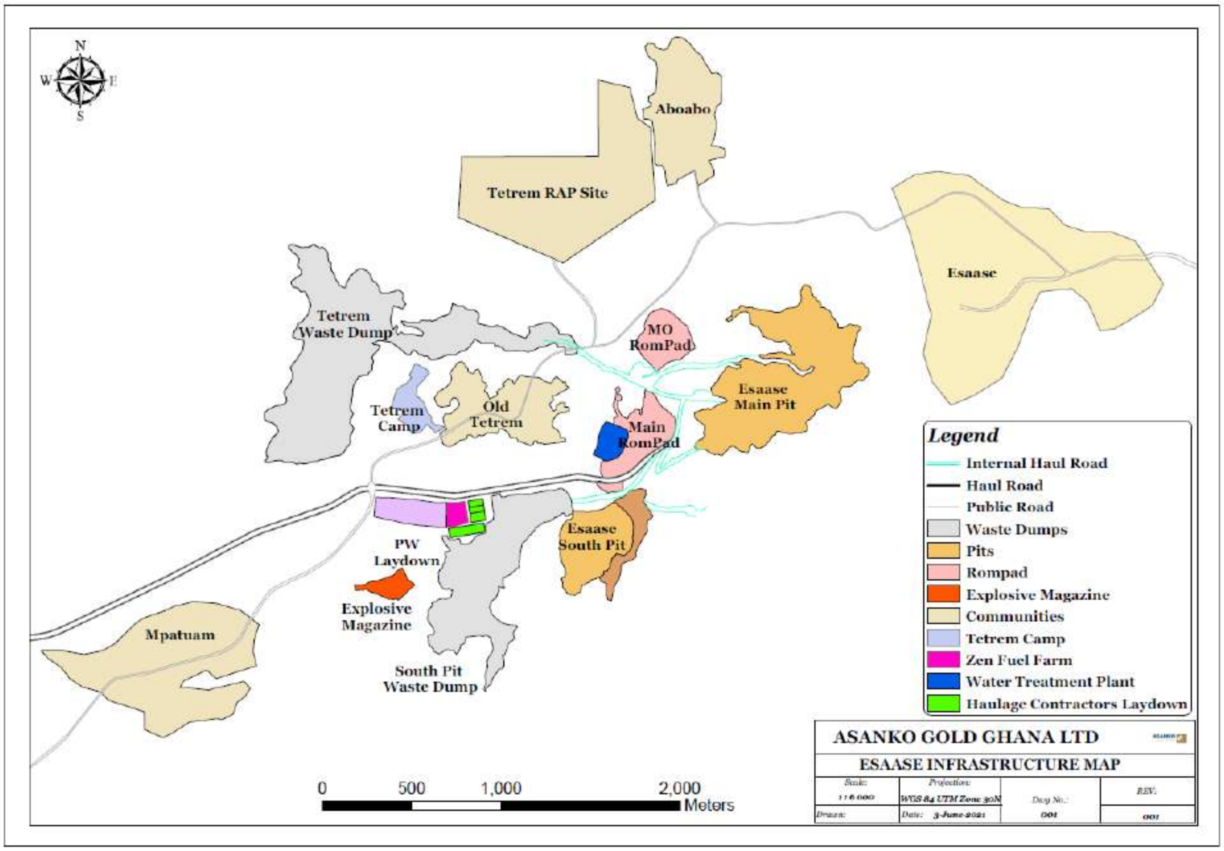


Figure 18-3 Esaase Site Infrastructure Layout

Source: Asanko Gold Mine, 2021

18.3.3 Haul Road Esaase to Obotan

The Esaase to Obotan haul road is a distance of approximately 28 km. The haul road route goes through thick vegetation, farmlands and galamsey area. It also crosses various local gravel roads, one paved district road and a few overhead power lines.

Figure 18-4 illustrates the haul road layout.

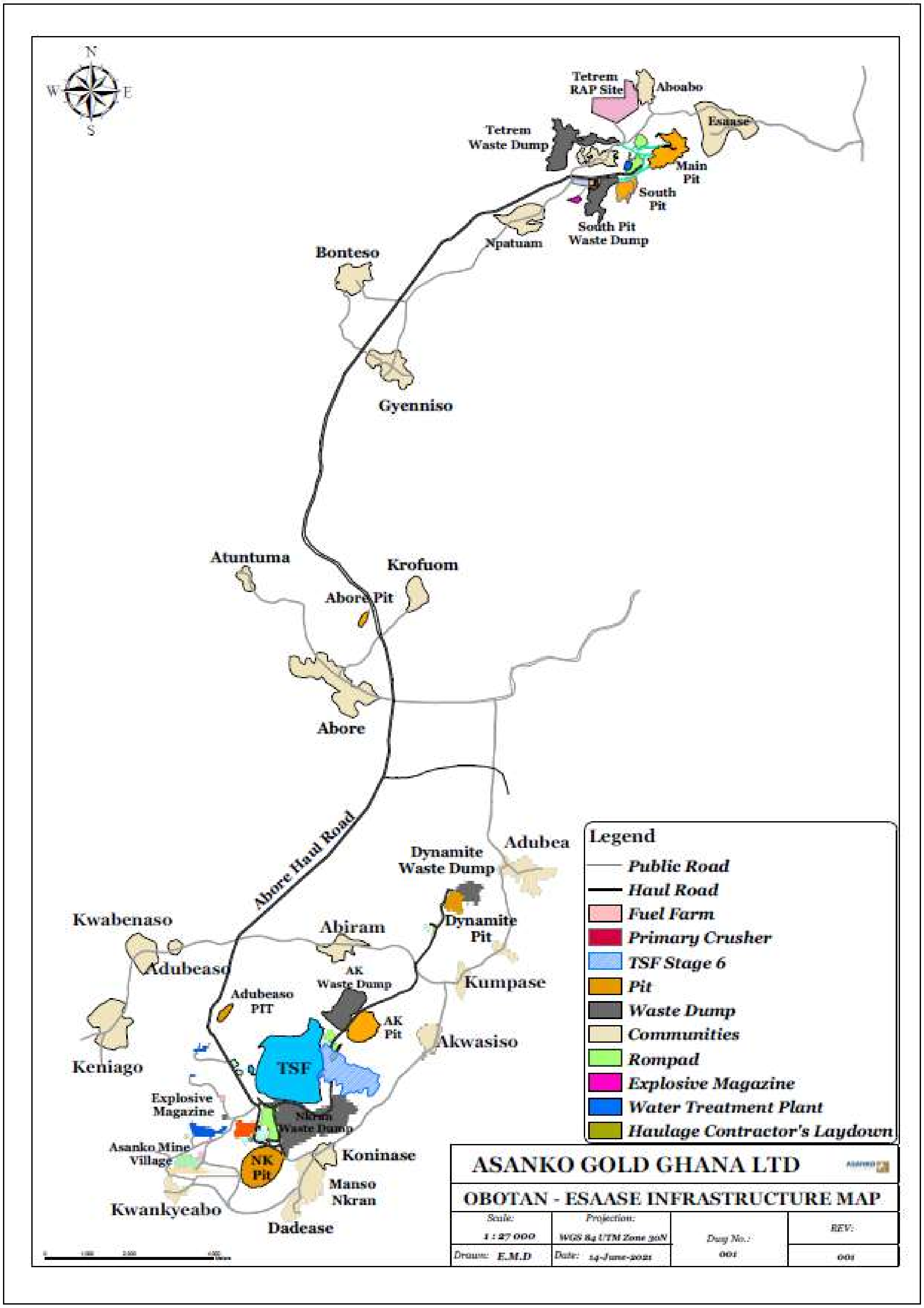


Figure 18-4 Asanko Gold Haul Road – Overall Site Infrastructure Layout
Source: Asanko Gold Mine, 2021

18.4 Site Access

The Esaase site is accessed by existing public roads from two directions through three routes:

- Kumasi/Sunyani road to the north-east (sealed road)
- Kumasi/Obuasi road to the south (sealed road)
- Kumasi/Manso Nkwanta road (sealed road), with the last 15 km being the mine's private haul road.

Roads from both directions are gravel topped for the last 20 km to the Esaase site. Conditions of these roads can be described as fair to poor.

The process plant is also accessed by an existing public road, namely the Kumasi / Manso Nkwanta road (sealed road), with the last 12 km being AGM's private haul road.

18.5 Waste Rock Dumps

Waste rock dumps (WRD) associated with mining operations are constructed to meet the requirements of the Ghanaian Mining Regulations and AKOBEN guidelines. The WRDs have been initially constructed with the natural rill angle of approximately 35° with 10 m lifts and 17 m berms. This is then contoured progressively to an overall slope angle of 18.5° (1:3) to allow for slope stability and re-vegetation.

The WRDs will be progressed by tipping from a higher level against a windrow and progressively pushing the waste out with a dozer. Geochemical testwork identified that the waste rock for Esaase and Nkran was non-acid generating. The WRDs locations for Nkran, Esaase and the Satellite Pits are shown on the site layout diagrams, in Figure 18-1 and Figure 18-3.

The waste dumps will be progressively rehabilitated with topsoil, where possible. Progressive rehabilitation has been undertaken where possible to date. Surfaces of dumps will be contoured to minimize batter scour and ripped at 1.5 m centres to a depth of 400 mm, where practicable. Seepage and shallow ground water flow along the perimeter of the mine residue deposits are controlled with suitable toe drains.

Select waste rock from Nkran will be used for future TSF stages where practical.

18.6 Tailings Storage Facility

The Tailings Storage Facility is located near the process plant and consists of multi-zoned downstream raised perimeter embankments.

Refer to Section 20 for details of the Tailings Storage Facility.

18.7 Storm Water Management

18.7.1 General

The surface water management system consists of two separate systems:

- A clean water diversion system to control the run-off from the higher lying natural environment
- A storm water system to capture the contaminated storm water from operational areas.

Water accumulated within the clean water system is diverted around areas of disturbance and directed towards the natural watercourses.

Water accumulated in the dirty water system is either harvested for use or routed through sediment control structures prior to discharge to the environment. Water will only be discharged to the environment if it meets EPA sector specific effluent guidelines for mining and is approved by the environmental manager.

18.7.2 Sediment Control Structures

This infrastructure includes a network of water storage dams (ponds) and sediment control structures.

Four sediment control structures were constructed at Obotan. The sediment control structures were designed per the EIS to have embankment slopes of 1:3 for both the upstream and downstream ends of the Zone A Fill embankment with a 6m width. The embankment height is 2.0 m with 1.5 m height to the spillway.

Based on the site topography, the run-offs from the waste rock dumps heads toward the sediment control structure with majority heading towards the Sediment Control Structure No. 4. Water is pumped from the sediment control structure back to the process plant for processing.

All run-offs from the processing plant are captured in the downstream drains and directed towards the Pollution Control Dam (PCD). Water from the PCD is pumped back to the processing plant. In the event of a spill, the water is directed towards Sediment Control Structure No. 4 for controlled discharged into the environment when EPA standards are met.

A 1,920 m^3/day N2 Water Treatment Plant has been constructed at Esaase to treat the water pumped from the Esaase pit and pit dewatering boreholes. The plant features three storage ponds (Feed Pond, Sediment Pond, and the Discharge Pond) with a combined holding capacity of 27,000 m^3. The treated water is discharged into the Bonte river.

18.8 Potable Water Supply

Potable water demands for the Esaase mine services area and camp are supplied by ground water boreholes.

There is basic water treatment infrastructure at the Esaase camp already in place.

18.9 Sewage Handling

Sewage is currently collected in tanks, then pumped to a contractor’s truck and discharged at the Obotan sewage treatment plant.

18.10 Power

Power is supplied to Obotan and Esaase from two different generation sources and two different distribution systems.

18.10.1 Power Supply – Obotan

Power to the existing Obotan plant is generated by the Volta River Authority (VRA) and transmitted from the Asawinso sub-station via a 161 kV overhead line, owned and operated by Ghana Grid Company Limited (GRIDCo). The capacity of the overhead line feeding the plant is 150 MW, which far exceeds the estimated power requirements for LOM.

18.10.2 Power Supply – Esaase

Power to Esaase is supplied by ECG and transmitted from the ECG network via a 33 kV overhead line. The 33 kV distribution network is in place throughout the Esaase mine.

18.11 Fuel

Diesel is supplied by road from Takoradi and stored at existing fuel farms at both Nkran and Esaase. The fuel farms are operated by the fuel transport contractor, Zen Petroleum.

19 MARKET STUDIES AND CONTRACTS

19.1 Introduction

The commodity produced at AGM is gold, which is widely and freely traded on the international market with known and instantly accessible pricing information.

19.2 Marketing Strategy

The marketing approach for any future gold production is the same as that used for AGM production since commercial production commenced in Q1 2016.

The three key elements of marketing strategy are as listed. Gold, as doré bar, is:

- Transported from the mine via Accra to Rand Refinery (Pty) Ltd (Rand Refinery) in Johannesburg, South Africa. The transportation of the gold bar is the responsibility of the refining contractor
- Refined at Rand Refinery under a refining contact
- Sold to the original project lenders under an off-take agreement.

19.3 Marketing Contracts

19.3.1 Refining Contract

The gold refining industry is competitive with several gold refineries in South Africa, India, Switzerland and several other countries that have the capacity to refine gold from AGM.

AGM refines all doré bars produced at Rand Refinery under a one-year contract that commenced on August 1, 2021. The contract was awarded to Rand Refinery after an open tender on competitive terms.

The contract specifies a standard refining charge. This charge is credited for payables (e.g. silver content of the doré) and debited for any deleterious content (e.g. arsenic) in accordance with specific terms in the contract.

19.3.2 Off-take Agreement

AGM has an off-take agreement to sell 100% of the future gold production up to a maximum of 2.2 Moz to the original project lender, Exp T2 Ltd (“Red Kite”). Arrangements for sale of production after this agreement is satisfied will be reviewed as required.

As of December 31, 2021, the AGM has delivered 1,299,256 ounces to Red Kite under the offtake agreement.

19.4 Pricing

The off-take agreement specifies that the buyer can nominate the purchase price, being either the London Gold Market AM fixing price as publish by the London Bullion Market Association or London Gold Market PM price or Comex (first position) settlement price during the nine-day quotation period following shipment from site. In practice, the buyer nominates the lowest of the spot prices during that period as the purchase price.

19.4.1 Payment Terms

Under the off-take agreement, the buyer pays for 100% of the value of the gold nine business days after shipment from the mine.

A provisional payment of 90% of the estimated value is made within one business day after receipt of the gold credits by the buyer, which is typically 3 or 4 business days after shipment from the mine.

19.5 Product Specification

The product specification is defined in the refining contract.

19.6 Shipping, Storage and Distribution

Transport of doré bars from mines across Africa to refineries in South Africa and elsewhere is a relatively common occurrence. For the AGM mine, transport of doré bars from AGM is the responsibility of the refinery. The doré bar is transported from the mine site via helicopter.

20 ENVIRONMENTAL STUDIES, PERMITTING & SOCIAL / COMMUNITY IMPACT

This section provides an overview of the environmental legislation and guidelines applicable to the AGM, as well as a summary of the permitting process and stakeholder engagements conducted in respect of the mine.

20.1 Ghanaian Legislation and Guidelines

20.1.1 Environmental and Social

The key environmental and social legislation in Ghana are the Environmental Protection Agency Act 1994 (Act 490) and the Environmental Assessment Regulations 1999 (LI 1652). The Environmental Protection Agency (EPA) is the regulatory body that administers these laws.

The Environmental Protection Agency Act 1994 (Act 490) establishes Ghana's EPA and defines the various functions of the EPA two of which are as follows:

- To prescribe standards and guidelines relating to the pollution of air, water, land and any other forms of environmental pollution including the discharge of waste and the control of toxic substances;
- To ensure compliance with the laid down environmental impact assessment procedures in the planning and execution of development projects, including compliance in respect of existing projects;

The Environmental Assessment Regulations 1999 (LI 1652) support the Environmental Protection Agency Act 1994 (Act 490) and describe the process of environmental assessment in Ghana.

Proponents of undertakings that have a significant adverse impact on the environment (as defined in Schedule 2 of these Regulations) must submit an Environmental Impact Statement (EIS) to the Agency in accordance with the EPA LI1652 obligations. It is instructive to note that the scope of the EIS covers both the biophysical and the socio-economic impacts of the project.

Though not expressly stated in the law, the Agency has some discretionary powers in Clause 2 (LI1652) to establish some additional guidelines based on their technical judgment. In this context, the submission of an EIS is required for any mining project where the mining lease covers an area greater than 10 hectares. The regulations outline the environmental and social aspects that must be addressed in an EIS. This includes addressing the possible direct and indirect environmental impacts of the proposed undertaking during pre-construction, construction, operation, decommissioning (i.e., mine closure) and post-decommissioning phases.

As a first step, an Environmental Scoping Report must be prepared for, and approved by, the EPA prior to submitting an EIS. The purpose of the scoping document is to set out the scope of works for the EIS and must include its draft terms of reference.

In accordance with the traditional regulatory approach, a number of legally binding conditions for mitigating biophysical and social impacts of the project must be carried out once an Environmental Permit is obtained.

These typically include:

- Submit, and have approved, an environmental management plan (EMP) within 18 months of commencement of operations and thereafter every 3 years
- Submit an annual Environmental report 12 months after the commencement of operation and every 12 months thereafter
- Obtain an Environmental Certificate from the EPA within 24 months of commencement of operations
- Mining operations are required to submit closure plans to the EPA and obliged to post reclamation bonds. The Environmental Protection Agency Act, 1994 (Act 490) and the Environmental Assessment Regulations, 1999 (LI 1652) also contain provisions for community engagement

- Obtain the Water Use License from the Ghana Water Resources Commission in accordance with the Water Resources Commission Act, 1996 (Act 522) as well as the Water Use Regulations, 2001 (LI 1692) that govern the abstraction, impoundment, and discharge of water.

20.1.2 Minerals and Mining

The Minerals Commission is the principal regulatory body of the mining industry in Ghana. It was established under the Minerals Commission Act, 1993 (Act 450) for the "regulation and management of the utilization of the mineral resources (of Ghana) and the co-ordination of policies in relation to them".

The Minerals and Mining Act, 2006 (Act 703) aims to:

- Develop a national policy on mining and consolidate the disparate laws on mining in force prior to 2006
- Increase investment by foreign mining companies in Ghana.
- Remove the uncertainty concerning the availability and conditionality of mining rights as well as the bureaucratic gridlock
- This Act requires that an application for a mineral right (e.g., mining lease) be accompanied by a statement providing:
    - Particulars of the financial and technical resources available to the applicant
    - An estimate of the amount of money proposed to be spent on the operations
    - The proposed program of mineral operations
    - A detailed program with respect to the employment and training of Ghanaians.

Subject to Section 72 of the Minerals and Mining Act, 2006 (Act 703) the holder of a mineral right must have due regard to the effects of mineral operations on the environment and must take whatever steps necessary to prevent pollution of the environment as a result of mineral operations.

The Minister may, as part of a mining lease, enter into a Stability Agreement with the holder of the mining lease to ensure that the holder will not, for a period of up to 15 years, be adversely affected by a new enactment, changes to an enactment, or be adversely affected by subsequent changes to the level of, and payment of, royalties, taxes, customs or other related duties. The Stability Agreement becomes effective upon ratification by Ghana's Parliament.

Where the proposed investment to be made by the mining company will exceed US$500 million, the Minister may, on the advice of the Minerals Commission, enter into a development agreement under the mining lease.

The development agreement may contain provisions relating to:

- The mineral right or operations to be conducted under the mining lease
- The circumstance or manner in which the Minister will exercise discretion conferred by, or under, the Minerals and Mining Act, 2006 (Act 703)
- Stability terms under a Stability Agreement
- Environmental management expectations and obligations of the holder to safeguard the environment in accordance with the Minerals and Mining Act 2006, or another enactment
- Settlement of disputes.

The development agreement is also subject to the country's Parliamentary ratification in order to make it effective.

The Minerals and Mining (health, safety and technical) regulations provide mining, health, safety and environmental requirements that must be met by a mining lease holder.

In addition to the Minerals and Mining Act, 2006 (Act 703), seven subsidiary legislations regulate the various aspects of mining operations in Ghana. These are:

1. Minerals and Mining (General) Regulations 2012
2. Minerals and Mining (Licensing) Regulations 2012
3. Minerals and Mining (Support Services) Regulations 2012
4. Minerals and Mining (Compensation and Resettlement) Regulations 2012
5. Minerals and Mining (Explosives) Regulations, 2012
6. Minerals and Mining (HSLP and Technical) Regulations 2012.
7. Minerals and Mining (Local Content and Local Participation) Regulations 2020 (LI 2431)

20.1.3 Compensation

Acquisition and access to land in Ghana for development activities, including mining, may be undertaken either through the State's power of eminent domain, or by private treaty. The taking of land requires the payment of due compensation. The regulatory oversight of private sector land acquisition and resettlement related to mining activities and actions is governed by the Constitution of Ghana and two legislative acts:

- The 1992 Constitution of Ghana ensures protection of private property and establishes requirements for resettlement in the event of displacement from State acquisition (Article 20, Section 1,2 and 3)
- The State Lands Act 1962 (Act 125) and its subsequent amendment, State Lands (Amendment) Act 2000 (Act 586), mandates compensation payment for displaced persons and sets procedures for public land acquisitions.

The Minerals and Mining Act, 2006 (Act 703) vests all mineral rights in land to the State and entitles landowners or occupiers to the right for compensation. Section 74 (1) requires compensation for:

- Deprivation of the use or a particular use of the natural surface of the land, or part of the land
- Loss of, or damage to immovable property
- In the case of land under cultivation, loss of earnings, or sustenance suffered by the owner, or lawful occupier, having due regard to the nature of their interest in the land
- Loss of expected income, depending on the nature of crops on the land and their life expectancy.

20.1.4 Health, Safety and Labour

The principal health, safety and labour laws applicable in the mining industry include:

- The Minerals and Mining Act, 2006 (Act 703)
- Workmen's Compensation Act, 1987 (PNDCL 187)
- Labour Act, 2003 (Act 651)
- Minerals and Mining (Health Safety and Technical) Regulations (LI 2182).

Provisions in the mining law state in part that a holder of a mineral right shall give preference in employment to citizens of Ghana "to the maximum extent possible and consistent with safety, efficiency and economy."

As with other sectors, a foreign employee in the mining sector needs a work and residence permit in order to work.

However, under the mining laws of Ghana, there are immigration quotas in respect of the approved number of expatriate personnel mining companies may employ.

20.2 Permitting Process

20.2.1 Obotan Permits

Two key regulatory permits were required for the Asanko Gold Mine as follows:

- The Mine Operating Permits (MOP) issued by the Minerals Commission in respect of mining leases
- The Environmental Certificate issued by the EPA in respect of mining operations.

Following the required engagements, regulatory site visits, and submission of the relevant documentation, the Asanko Gold Mine has successfully obtained and renewed its Mine Operating Permits since commencement of operation in 2016 and is currently operating under the 2021 MOPs issued on January 12th 2021 in respect of the following leases, all of which form part of the operational complex of the Asanko Gold Mine:

- LVD 7299/2013 located at Abirem
- LVD 21721/2012 located at Adubea
- LVD 21722/20 located at Abore
- LVD 3969A/90 located at Esaase
- LVD 8979A/95 located at Miradani
- LVD 5174/2012 located at Datano

The latest Environmental Certificate for the Asanko Gold Mine (gold mining and mineral processing) was issued on July 30th 2021, and is valid for three years following which it will be due for renewal.

20.2.2 Esaase Permits

Asanko Gold (formerly known as Keegan Resources) acquired the Esaase concession in 2006 and, under an exploration permit issued by the Minerals Commission, conducted extensive geological survey and drilling program to define its Mineral Reserves.

Following completion of this work stream, and preliminary establishment of a business case, a mining area application was submitted to the Minerals Commission in 2012 which defined the location of the proposed mine on the concession as well as locations of the pits, waste rock dumps and other related mining infrastructure and facilities.

The mining area application was approved by the Minerals Commission and a Temporary Mine Operating Permit issued that same year.

In 2014, further work was conducted to optimize the Project. The Minerals Commission was regularly updated on the Project and a formal application was submitted to the Minerals Commission in December 2016 which led to issuance of the permanent MOP for the Esaase concession in January 2017. The permanent Esaase MOP, as with all other Asanko mining leases, has since been successfully renewed annually in line with regulatory requirements.

20.2.3 EPA Permitting Process for Esaase

The Figure 20-1 depicts the sequence of activities that had to be completed in accordance with the EPA environmental permitting process.

This necessitated the hiring of a Ghanaian environmental management consulting firm, the African Environmental Research & Consulting Company (AERC), to carry out the required activities.

The process commenced with formal consultations with the EPA on the proposed plan to develop the Esaase gold project followed by submission of an Environmental Impact Assessment (EIA) application for the project which included its basic technical details.

In this regard, the required EPA Form EA2 application was filed with the EPA on June 12th 2015 for the proposed mine development at Esaase, as well as the originally planned 27 km long overland conveyor from Esaase to Obotan.

In line with the permitting process, the EPA responded to the EA2 submission by requesting Asanko Gold to conduct an EIA in respect of the proposal and submit an Environmental Impact Statement (EIS) in line with the requirements of their EIA procedures.

A Scoping Report, with draft terms of reference for the EIA, was prepared and subsequently submitted to the EPA in December 2015.

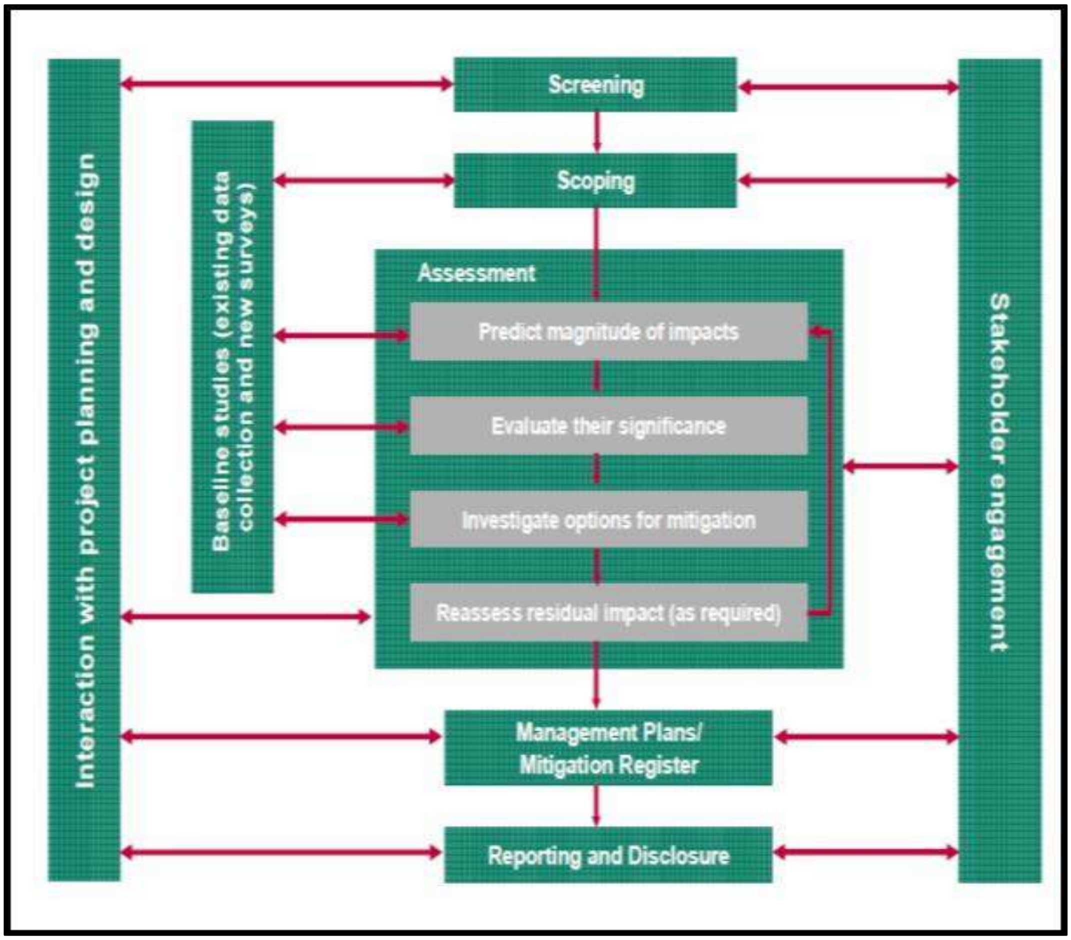


Figure 20-1 EIA Approach for the Esaase Project

Following this, work was undertaken on the EIA which entailed:

- Technical meetings between Asanko Gold and AERC to discuss and clarify the project scope as a basis for determining the spatial and time boundaries of the EIA assignment
- Site visits by AERC to the project sites for familiarisation with pit locations, conditions, access roads and proposed locations of mining infrastructure
- Identification and review of all appropriate Ghanaian environmental, mining and allied acts, regulations, standards, conditions and guidelines

- Field investigations comprising environmental, socio-economic and cultural surveys within the area of influence of the Project to determine existing baseline conditions
- Development of an inventory of all proposed mine infrastructure within the vicinity of the Project area
- Collection, sorting and review of company documentation relevant to the proposed undertaking, including concept descriptions, independent study reports, design drawings and maps, etc.
- Holding of consultations with all governmental (and non-governmental) institutions
- Holding of consultations with traditional authorities and all impacted communities.

In attendance at that were:

- Officials of the EPA
- Officials of Asanko Gold
- Officials of AERC, Asanko Gold's environmental management consultants
- A representative of the Asantehene, the King of the Ashanti Kingdom
- The chiefs and members of all 12 communities within the catchment area of the proposed Esaase mining project as well as those along the then proposed overland conveyor corridor
- The Member of Parliament for the area
- The District Chief Executive and officials of the Amansie West District Assembly
- A representative of the District Chief Executive of the Atwima Nwabiagya District Assembly
- Religious leaders from the communities
- The media.

The ceremony was chaired by Dr. Richard Amankwah Kuffour, a lecturer at the University of Education (UEW), Winneba, Ghana.

The then General Manager of the Asanko Gold Mine, Mr. Charles Amoah, gave an overview of the project highlighting its impacts and the interventions to be implemented by the Company to mitigate these. He further enumerated the financial and socio-economic benefits of the Project to all stakeholders, including the Government of Ghana, and the local communities.

In an open forum, members of the community, as well as the chiefs of each of the 12 communities, publicly declared their support for the project and expressed their expectation that the expansion projects will create jobs for the youth in the community and also lead to socio-economic development of the catchment area.

The positive outcome of this key EIA activity (i.e. the public hearing) was pivotal to the permitting process and an account of the event formed an integral part of the Draft EIA developed in respect of the Project.

Select community members and chiefs at the EPA public hearing are shown in Figure 20-2 and Figure 20-3.

Figure 20-2 Community Members at the EPA Public Hearing

Figure 20-3 A Cross Section of Chiefs and Members of the Community at the EPA Public Hearing

The various findings of the respective EIA activities were subsequently compiled into the Draft EIS which was submitted to the EPA as a sequel to the Scoping Report on September 30th 2016. The Draft EIS outlined the project description, its potential impacts and mitigations, proposed environmental monitoring action plans, provisional environmental management plans and reclamation, and closure alternatives of relevance to the mining undertaking.

The EPA reviewed the Draft EIS and reverted with their comments and queries as well as invoices for the permit processing fees. This effectively marked technical approval of the project by the EPA.

The Draft EIS was revised and submitted to the Agency on November 30th 2016, after the EPA's comments were incorporated. This was followed by payment of the EPA's invoice for the issuance of the environmental permit.

An updated Environmental and Social Impact Assessment (ESIA) was prepared by the AGM and submitted to the EPA during 2017 to incorporate a 27-kilometre haul road, to facilitate truck ore haulage from Esaase to Obotan. This ESIA was approved by the EPA and an Environmental Permit issued for the expanded Obotan Gold Mining and Processing Project (permit received in August 2019). The 27-kilometre overland conveyor was removed from the May 2020 version of the EPA Permit at the request of the AGM.

20.3 Stakeholder Engagement

20.3.1 Guiding Principles of Stakeholder Engagement

Extensive interactions were held with various stakeholder groups including the government, regulatory authorities and, particularly, members of communities that would be impacted by the development of Esaase as well as expansion projects at Obotan.

These interactions were guided by Asanko Gold's principles of conducting stakeholder engagement in a manner that is:

- Respectful and sensitive to local culture and societal norms
- Transparent and honest in deliberations over issues of concern
- Based on continuous engagement and keeping stakeholders updated, and their opinions sought, every step of the way
- Aimed at building mutually beneficial long-term partnerships

Further to these, there were extensive stakeholder engagements to ensure that, apart from legal and regulatory consent to the project, affected communities were fully informed about the project, its potential technical and socio-economic impacts on them, interventions to mitigate these impacts, among others, so the communities could make the decision on whether or not to allow the Project to be implemented on their land.

20.3.2 Engagement with Communities

The AGM has a catchment area which straddles parts of the Amansie South and Amansie West Districts of the Ashanti Region of Ghana. The mine's catchment area has thirty five (35) villages and approximately 135,000 inhabitants, based on the 2010 Ghana population census. Of these thirty five communities, three (Nkran, Tetrem and Esaase) are directly impacted thereby necessitating either a partial or total resettlement. The partial resettlement of Nkran was successfully completed in 2015 whereas the total resettlement of Tetrem was completed in 2021. The relevant Resettlement Action Plan processes are currently in progress with respect to the planned partial resettlement of Esaase.

Formal consultations regarding various aspects of the then AGM Obotan Gold Project were conducted from as far back as 2011 through:

1. Engagements with various government entities including relevant ministries, departments and agencies as well as the local government i.e. district assemblies,
2. Engagements with Project-affected-Persons in the catchment Area, and
3. The formal Environmental and Social Impact Assessment Scoping Process which included holding of a Public Hearing involving all stakeholders of the project.

As a result, the AGM has consistently, and directly, engaged with the affected catchment communities since commencement of the Obotan project.

Principal engagement methods and venues to date have included:

- Multi-stakeholder forums
- Village level community liaison committees
- Establishment of staffed community information centres (CIC) as an ongoing access point for village residents
- Individual and focus group meetings
- Open door policy at the project site offices.

A grievance management process was also instituted to ensure all community concerns were documented, reviewed, necessary actions taken, and timely feedback provided to affected community members. Grievances are resolved between 14 to 30 days from the date of complaints.

The AGM further engaged additional community liaison officers to enhance the frequency and quality of interactions, particularly with the immediate communities, and also to build trusting relationships with stakeholders even before commencement of the Project.

A stakeholder engagement and Action Plan was developed, with broad stakeholder groups and committees established in the communities, to keep members of the communities fully updated on the project and to deepen their relationship with Asanko Gold, thereby building a strong linkage with the local population. This approach ensured effective information flow between the Company and the catchment communities and provided the platform for building strong and collaborative working relationships with project stakeholders.

AGM has over time followed a well-defined communications plan with key discussion items as follows:

- New mine development activities
- Planned mining activities and any associated changes
- Rehabilitation works and post-closure land use requirements of stakeholders
- Development of partnerships with stakeholders for community development
- Proposals for company sponsored livelihood and agricultural land improvement programs
- Determination and review of crop compensation and deprivation of land use rates
- Sustainable development and community assistance projects
- Social Responsibility Forum (SRF) update
- Establishment of SRF Board of Trustees and training of the board, and standing committees, on their activities as they relate to sustainable community development
- Baseline engagement on Voluntary Principles on Security and Human Rights (VPSHR) issues
- Ore transport and haul road safety management plan
- Encroachment and illegal mining activities on Asanko tenements

20.3.3 Governmental Stakeholders

On the governmental and regulatory side, regular engagement sessions were held with the various regulators and government departments to provide the required updates on progress at the AGM.

To this end, the following governmental stakeholders have been kept fully informed, their opinions and inputs sought and are actively updated on the AGM with formal notifications, submissions and applications made as required. These were the:

- Ministry of Lands and Natural Resources

- Minerals Commission
- Inspectorate division of the Minerals Commission
- Ministry of Environment, Science, Technology and Innovation
- Environmental Protection Agency
- Water Resources Commission
- Forestry Commission
- Ashanti Regional Coordinating Council
- Amansie West District Assembly
- Amansie South District Assembly
- Ministry of Food and Agriculture – Amansie West & South Districts
- Ghana Education Service – Amansie West & South Districts
- Ghana Health Service – Amansie West & South Districts
- Land Valuation Board – Ashanti region.

The relevant consents, regulatory permits and approvals continue to be successfully renewed and updated as required.

20.4 Environmental and Social Management

20.4.1 Environmental Management System

Though the AGM is yet to go through ISO14001 Certification, its environmental management system (EMS) is aligned to the standard which follows the “Plan, Do, Check, and Act‟ (PDCA) methodology.

The AGM’s EMP outlines anticipated mitigation measures to be developed to monitor environmental impacts associated with the Project. It addresses the following aspects:

- Corporate commitment and HSE policies
- Environmental management structure
- Financial allocations
- Project overview
- Existing natural environment
- Existing socio-economic environment
- Environmental impacts and mitigation measures
- Environmental Action Plans
- Monitoring programme
- Reclamation and decommissioning
- Emergency response plan
- Auditing and review
- Community relations and resettlement.

Environmental and social impacts associated with the establishment and operation of the Obotan Mine was assessed in the 2013 ESIA and subsequent addendums to the ESIA.

20.5 Environmental and Social Mitigation

AGM is currently implementing the preventative approach to environmental management with the primary objective of limiting negative environmental impacts from the operational activities, whilst maximising positive benefits. Where possible, AGM seeks to minimize such negative impacts through appropriate mitigation measures. This approach fulfils the aspirations of the corporate policy on the environment, environmental performance management systems, and various impact-specific environmental action plans.

Waste rock from mining operations is placed in areas identified as suitable for the establishment of WRD facilities and are located in close proximity to the resource areas.

Tailings material from the plant is deposited on the expanded TSF. Cyanide in the CIL tailings is detoxified using a three-phase hybrid cyanide destruction process. Weak acid dissociable cyanide concentration is reduced in a single tank by means of sodium metabisulfite and air. The SO2/air process is used for cyanide destruction prior to tailings deposition in the TSF.

The management of potentially acid generating material is implemented to limit the effect on the receiving environment.

A surface water management regime consists of a clean water diversion system to control the uncontaminated run-off from the higher lying natural environment, and a dirty storm water system to capture the contaminated storm water from plant, operational and processing areas.

Water in the dirty water system is to be collected for reuse or routed through sediment control structures before being discharged into the environment. To this end, water is only discharged into the environment when it meets the EPA's effluent guidelines for mining.

The TSF and associated expansion has the following design characteristics associated with storm water management:

- Storm water capacity: 1 in 100-year recurrence interval, 72-hour storm event
- Emergency spillway: 1 in 100-year recurrence interval storm event.

Given the expected geochemical characteristics of fresh rock from Esaase, a new water treatment plant is under construction at the process plant to the treat process water. A similar plant has already been built at Esaase to treat water from the pits following which the solution is allowed to settle and the treated water decanted and, finally, released to the environment.

Appropriate drainage control measures to minimize soil erosion will be put in place during preparation of each site.

20.6 Environmental and Social Monitoring

Monitoring information is assessed against the Ghana EPA guidelines (January 2001) and in alignment with international best practice guidelines for the mining industry, including:

- IFC Environmental, Health & Safety Guidelines – Mining (December 2007)
- IFC Performance Standards on Social and Environmental Sustainability (January 2012)
- "Equator Principles III" 2013

The Government of Ghana and EPA's Environmental Performance Rating and Disclosure Methodology for Mining Companies (AKOBEN Programme).

In line with regulatory requirements, the AGM has been monitoring and reporting all environmental incidents that may occur on or offsite as a result of its operations.

20.6.1 Surface and Groundwater

AGM maintains an extensive programme for the regular monitoring of surface and groundwater quality. Compliance sampling is conducted monthly, and results are analysed externally by an accredited laboratory to determine compliance with regulatory requirements. Control and reference sampling are typically conducted on a quarterly basis. As per International Cyanide Management Code (ICMC) requirements, weekly sampling is conducted at cyanide facility areas for free cyanide, WAD-cyanide, and total cyanide levels. Pit water quality is also monitored monthly with additional monitoring conducted prior to any necessary discharges.

Multiple locations within the TSF surrounds are monitored daily to enable detection of any potential discharges. Supernatant and seepage water from the TSF are monitored monthly. Several piezometers have been installed on the embankments of the TSF to monitor pore pressure levels within the embankments. The piezometers are typically monitored monthly to enable observation of both seasonal and operational changes in water levels.

Surface water monitoring points required during construction, operation, and closure for the Esaase Project include downstream of pit discharge points, waste rock dumps and stockpiles as well as locations around any other facility such as workshops and fuel bays.

Potable water sources in all the communities monitored during the baseline groundwater are monitored monthly.

20.6.2 Dust and Noise

A Dust Management Plan (DMP) has been developed, and is being implemented, to provide a coordinated approach to dust impact mitigation. An integral part of the dust management program is a monitoring program that has been instituted in the surrounding communities. Stations are monitored fortnightly, and the results submitted to the EPA. Additionally, the monitoring stations also assess levels of nitrogen oxides and sulphur oxides (NOx and SOx).

Noise monitoring is similarly undertaken across several affected communities and is compared to the day and night-time guidelines.

20.6.3 Aquatic Environment

Appropriate drainage control measures to minimize soil erosion are in place by the AGM. These measures include:

- Settling ponds at appropriate locations downstream of mine infrastructure such as the waste rock dumps, the process plant and the mine services area
- Vetiver grass which has been planted on the crests and slopes of waste rock dumps and on exposed surfaces to prevent sedimentation arising from erosion
- Construction of drains around the perimeter of the pits, haul roads and access roads to enhance effective surface runoff management
- Early revegetation of disturbed areas using topsoil and subsoil stockpiled during the preparation phase

The AGM has established Water and Sanitation Committees (WATSAN) in communities where it has provided boreholes and, in addition to regular monitoring, the company provides the needed oversight and support to ensure these are in good working condition and also regularly maintained.

20.6.4 Ecological Environment

Although post-mining land uses are likely to be agriculturally oriented, a terrestrial fauna survey will be undertaken during the closure phase to assess habitat regeneration as well as compliance with AGM's Reclamation and Closure Plans.

In the interim, specific actions being pursued by the AGM include:

- Sampling of the fresh water environment
- Progressive land clearing as necessitated by mine development requirements
- Concurrent land reclamation programme in line with the LOM Plan and operational opportunities
- Stockpiling of topsoil and overburden for reuse in reclamation efforts such as the ongoing re-spreading exercise on the slopes of the Nkran Waste Rock Dump which has led to successful revegetation of the area.

These actions have created favourable conditions for return of fauna to the reclaimed areas.

20.6.5 Acid Rock Drainage Monitoring

Sampling and assessment of rock types/lithologies from the operations is carried out routinely to understand acid base accounting, rock mineralogy and potential for ARD development. Routine ARD monitoring is conducted in-house with additional analyses conducted by external laboratories, as required.

20.6.6 Tailing Storage Facility

The monitoring program for the TSF is described in Section 20.9.

Additionally, an Independent Tailings Review Panel (ITRP) was established to provide advisory services to the ongoing monitoring, maintenance, and construction of the TSF. The ITRP comprises of 4 international experts with experience in geology, geotechnical, geochemistry and hydrology. The ITRP supports the AGM's efforts to apply evolving international best practices and standards to ensure increased oversight, tracking, monitoring, capacity building and support for site level personnel.

The ITRP closely works with the Engineer-of-Record, AGM and Galiano senior management and the Board Committee on Sustainability as well as our JV partner. Semi-annual meetings are held to discuss a multitude of issues around water & geochemistry, capacity and containment, emergency preparedness, construction standards & scheduling, monitoring technology, closure practices and alignment to best practices.

20.7 Socio-Economic Aspects

AGM has formed Community Consultative Committees (CCC) which comprise of representatives of the mine, the District Assemblies (local government), traditional authorities and various identifiable groups. The CCC presents an important platform for communicating with stakeholder, providing updates on the mine's activities and projects, receiving feedback from community stakeholders and addressing any stakeholder concerns that there may be.

The company has further established the Asanko Development Foundation into which a contribution of $2/oz is made for every ounce of gold sold. The accrued amount is to be used for community-driven development projects.

20.8 Closure and Reclamation

AGM's reclamation objective is to ensure that the site is left in a condition that is safe and stable where long-term environmental impacts are minimized and any future liability to the community and future land use restrictions are minimized.

The final post-mining land use will be determined in consultation with the EPA, other Ghanaian government institutions, stakeholders, and local communities. Natural soil covers and vegetation will as far as possible be re-established over the disturbed areas.

Financial provision for reclamation and closure are made in accordance with the requirements of the Reclamation Security Agreement (RSA) that has been entered into between the mine and the EPA. The RSA sets out criteria for Primary Completion, Land Use Completion and Final Completion. Final completion is achieved when an area continues to meet the completion criteria with no monitoring or maintenance for three seasonal cycles.

As various facilities reach the end of their useful life, AGGL will begin reclamation activities in tandem with ongoing mining operations. For instance, concurrent reclamation at the Nkran Waste Rock Dump which started in 2019 and has been extended to cover additional 6.84 ha bringing the total area under reclamation to 12.93 ha. Native timber species and food crops were planted to create a valuable revegetated land that resembles a natural forest (Figure 20-4).

Figure 20-4 Reclamation of Native Timber Species and Food Crops

The AGM re-assess the closure and reclamation liability on an annual basis as changes occur. Changes include examples such as increase in land disturbance, reclamation work complete in tandem with ongoing operations, or change in regulatory/remediation requirements.

As at December 31, 2021 the asset retirement provision recognized under IFRS on the financial statements of the AGM was $81.0M USD. There is no significant difference through to the effective date of this report.

20.9 Tailings Storage Facility Design and Construction

The TSF consists of multi-zoned downstream raised embankments. At present, Stage 5 of the TSF is operational, and Stage 6 construction has recently been completed and is pending commissioning. Stage 6 will provide a total capacity of 29.2 Mt. The latest design completed in 2021 considers a limit of Stage 12, with a total footprint area of 375 ha (the basin area is approximately 318 ha). The TSF will generally be expanded vertically beyond the Stage 6 footprint into a ring dike configuration, and a single storage basin or cell formed such that reduced rate of rise plus construction efficiency are realized during future expansions to the facility. Tailing's deposition shall be undertaken, using subaerial methods such that a near centralized pond develops farther from the impounding walls. Each development of the facility is capable of safely accommodating tailings from mill operations and envisaged rainstorm events, applicable to the facility.

Table 20-1 Tailings Storage Facility Design Summary

Parameter	Unit	Value
Total Capacity	Mt	64.0
LOM Design Embankment Crest Limit	M	203.0
Height of LOM Critical Embankment	M	53.0
Total Volume of Embankments	Mm^3	11.1
Total Crest Length of Embankments	m	7,487.0
Total Footprint of Embankments (Base Area)	Ha	174.3
TSF Basin Plan Area	Ha	317.7

The TSF embankments are designed with 2.5H:1V upstream slopes to support stability and HDPE geomembrane installation. Downstream slopes of embankments are to vary from 2H:1V to 3.0H:1V during the raise constructions of the TSF, with the slope becoming gentle or flatter as the development approaches the LOM crest. A minimum 25 m wide buttress is provided for the highest embankment (West Embankment) during each stage raise. Each stage embankment has a minimum 12 m crest width to accommodate envisioned construction machinery. The adopted crest width, downstream and upstream slopes as well as the buttresses, contributes to the overall stability of the storage facility by supporting mobilization of safety factors that satisfies project country regulatory requirements and adopted design guideline(s) recommendations.

During each expansion to the TSF, vegetation within the footprint will be cleared, grubbed and de-stumped as part of foundation and subgrade preparations for fill construction. Topsoil and unsuitable materials (saturated, weak and vegetation laden soils) within the TSF footprint shall be stripped or removed such that the expanded embankments are constructed on competent ground. Unsuitable materials and topsoil shall be stockpiled in designate locations within the TSF proximity to support facility closure and rehabilitation efforts.

The embankments are provided with cut-off walls, constructed from plastic clays/silts along the upstream toes into competent low permeability in-situ foundation materials, which mitigates seepage of in-store slurry water beneath the dam such that the environment external to the TSF is not adversely impacted. TSF areas forming part of the containment basin are constructed with a minimum 200 mm thick compacted soil (clay/silt) liner (CSL), from either reworked suitable in-situ or imported materials. Upstream fills of embankments comprise a minimum 6 m wide low permeable zone, constructed from plastic clays and/or silts (Zone A). 1.5 mm thick smooth HDPE geomembrane are installed within the basin to form a continuous composite hydraulic barrier with the CSL and embankment low permeable fills (Zone A) during each expansion of the facility. The cut-off walls, CSL, embankment upstream low permeable fills, and HDPE geomembrane provides hydraulic containment for in-store tailings water mitigating seepage releases and safeguarding the external environment.

Supernatant water recovery from the TSF to process circuit shall be via two Decant Towers, to be supported by a floating barge on as needed basis. Two sufficiently sized submersible pumps would be utilized for Decant Tower operations - a pump shall be installed in each tower. Decant Towers shall be extended over the LOM to support water recovery to process operations such that a small pond is maintained in the TSF within operational limits or requirements, to the extent practical. The floating barge shall be maintained, during each expansion of the facility, for backup operations.

Gravity drained groundwater and under-drainage systems, comprising primarily of branch and collector drains, installed within the TSF basin shall be utilized throughout the facility operations to the LOM end. The groundwater system (also referred to as subterrain or sub-liner water collection system) act to mitigate uplift pressure risks to the basin hydraulic barrier; and provides a means for evaluating the performance of the hydraulic barrier system (CSL, embankment Zone A and HDPE geomembrane) against seepage of slurry water. The under-drainage system (also referred to as over-liner drainage system) shall: promote consolidation of in-store tailings solids; reduce seepage; aid improved in-store densities and stability. A seepage collection and confinement channel is to be maintained downstream of the West Embankment, to allow collection of seepage (where any) and rain precipitates into a sump for monitoring. Water reporting to the sump shall be returned to the TSF surface as part of measures to mitigate release of tailings water into the external environment.

The design incorporates an emergency spillway during each expansion to the TSF. This shall be available at all times during operations for each expansion, to end of mine life, to aid controlled safe evacuation of rainstorms in excess of the facility's design storage capacity and mitigate overtopping breach risks (however unlikely).

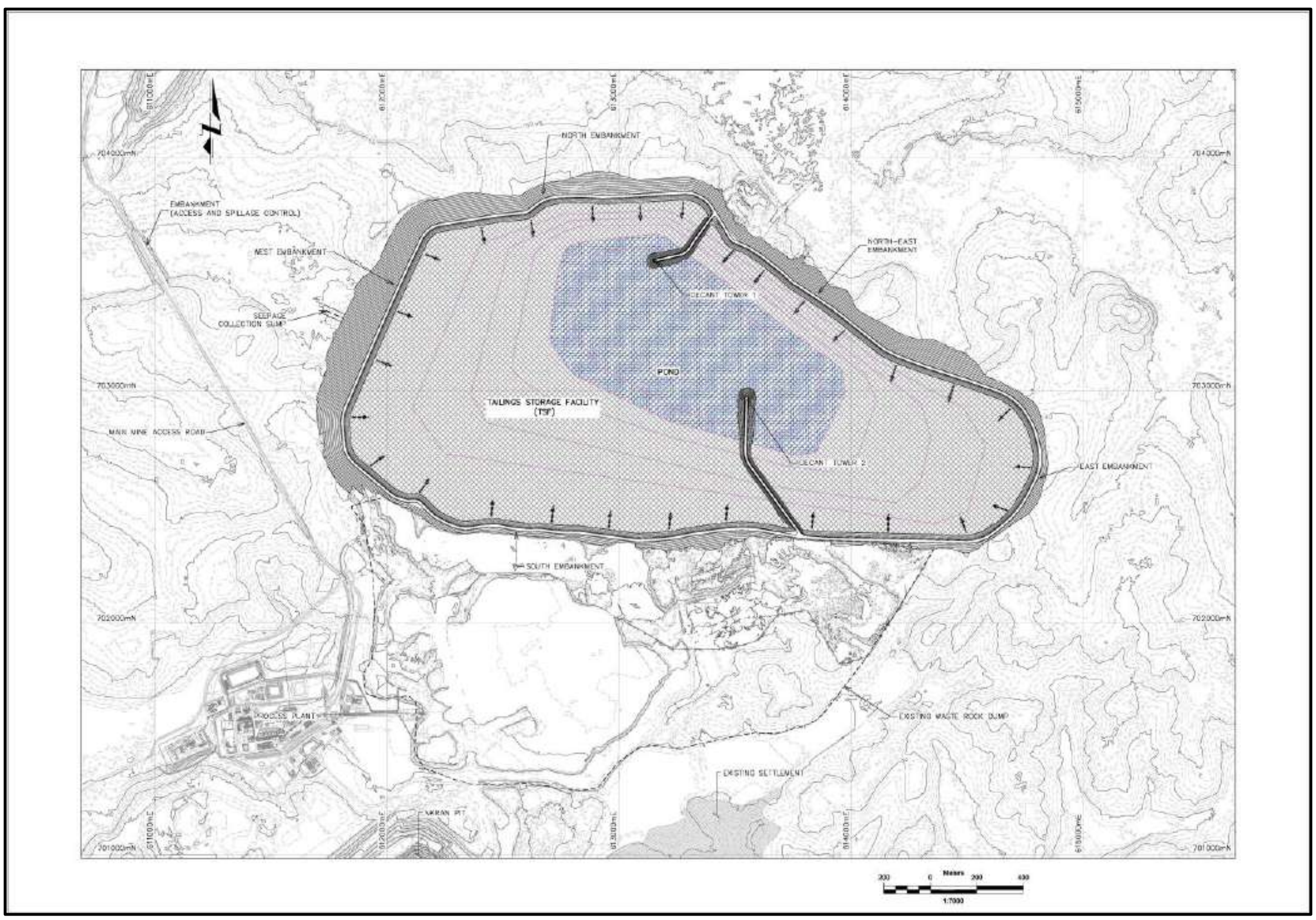


Figure 20-5 Tailings Storage Facility Stage 12 Layout

Source: Knight Piésold, 2021

20.9.1 Monitoring

A monitoring program for the TSF is currently in place to observe for potential challenges which may arise during operations. This program will continue to be reviewed, evaluated, and updated as information become available and the facility performance is understood.

Additional groundwater monitoring stations will be installed downstream of the TSF, as determined necessary, to support routine observation of water quality and early detection of changes in baseline parameters (both during operations and after decommissioning) such that potential risks are mitigated proactively.

Vibrating wire piezometers and open-end standpipe piezometers will be installed in the TSF embankments, as determined appropriate and in conformance with existing regulations (L.I 2182), to monitor pore water pressures within the embankments and confirm that facility performance is consistent with design intent with regards to impoundments stability. The piezometers will be monitored at regular intervals and the observations noted and communicated to the Design Engineer.

Survey pins and/or prisms will be installed at regular intervals along the embankment crests per local regulatory requirements and to international best practice guidelines to monitor potential deformations in the impounding walls, as part of overall dam performance and safety observations, that would aid any potential or identified distress remediation in a timely manner.

A number of instruments (shape accelerometer arrays and inclinometers), that aid continued observation of the impoundments' performance relative to deformation, have been incorporated in recent expansion to the TSF. These automated instruments will support real-time data collection, transmission via wireless communication system and graphical reporting such that deformation related distresses to the TSF impounding walls are identified timely, and remedial measures implemented such that the dam is continuously operated under practically safe conditions.

The adopted monitoring instruments will be reviewed, as appropriate, during expansions to the TSF. Alternative technologies may be considered, adopted and incorporated into the TSF monitoring/surveillance system as may be determined applicable.

The TSF will undergo operational audits and dam safety inspection or review by a suitably qualified Geotechnical Engineer, as part of continuous monitoring efforts relative to safe facility performance. The audits will observe that the facility is operating within design intent and in an efficient manner or otherwise. Operational audits and dam safety inspection or review intervals shall be adopted and reviewed as may apply to the TSF.

20.9.2 Water Management Strategy

Water management is a fundamental consideration for the safe design and operation of the TSF in support of process plant operations. The design approach adopted for the expansions to the TSF, relative to water management and associated risk mitigation, considers that each stage raise or expansion has sufficient: capacity to accommodate anticipated rainstorm events and rainfall sequence commensurate with the dam classification per Ghanaian regulatory requirements (L.I 2182) and best practice guidelines provided by ANCOLD. The design objective is to either meet or exceed, to the extent practical, those requirements and/or recommendations; and freeboard above operating pond level and anticipated applicable design rainstorm event, such that risks of in-store materials release to the external environment are mitigated.

A key water management strategy is to recover the maximum possible slurry liquor and rainwater from the TSF for recycling to process operations. Shortfalls will be supplemented from raw water sources available on site, as may be determined essential.

To efficiently manage TSF and process water supply/demands over the updated LOM, a water balance model has been developed to aid estimation of: net inflow and outflow of slurry water from the TSF, supernatant pond volumes under design average and dry rainfall sequence, supernatant pond volumes (following design rainfall events and sequences), and make-up water requirements during design average and dry rainfall sequences.

Key considerations for the water balance model developed include: process water demand; tailings percent solids or tailings solids content (current and projected); LOM mining schedule and mill feed blends; ore water content; settling and consolidation properties of tailings from ore bodies to be included in mill operations; TSF basin groundwater or subterrain water inflow/pump rates; run-off water from direct and surrounding catchments to the process and TSF circuit; current and alternative sources of process make-up water; Open Pit development schedules and post mining plans; and climatic data (including rainfall, evaporation etc).

Generally, the TSF maintains water sufficient to support process operations such that a minimal supernatant pond results under average climate conditions with sufficient freeboard. Under dry climatic conditions, additional water will be supplied from available sources external to the TSF to support process operations.

20.9.3 Closure and Rehabilitation

The rehabilitation and closure of the TSF will include activities that take place concurrently with its development and operation, as well as those associated with its final decommissioning and closure. At closure, the TSF will remain a permanent feature on the landscape immediately adjacent to the extensive Nkran waste rock dump.

Tailings will be drained of water during the operational phase of the facility via the under-drainage system, installed within the dam, to reduce the phreatic surface and improve stability of in-store solids to support closure cap or cover construction. The under-drainage system is expected to continue to operate for a number of years, after completion of capping and native vegetation used for the rehabilitation become established, until such time when interstitial water has been drained (to the extent practical from the tailings mass) such that a stable landform is realized.

The closure cover shall be constructed from suitable local mine waste rocks, oxides or saprolites stripped to various stockpiles during open pit developments, plastic clays/silts, drained alluvial soils (removed from the TSF basin and embankment footprints) and stockpiles of topsoil at the mine.

20.9.4 Geotechnical Investigation

Several geotechnical investigations have been completed in support of the TSF design. These investigations included: desktop review of site knowledge, obtained from mine exploratory activities and other constructions; regional geological/geotechnical information review; existing site-specific geotechnical investigation reports reviews; site reconnaissance; supplementary geotechnical explorations with in-situ testing and sampling; and geotechnical laboratory testing of recovered materials. The geotechnical investigations for the existing and planned TSF expansions were conducted to assess:

- Foundation and excavation conditions for embankments as well as appurtenant installations, and
- Construction materials availability as well as suitability.

Key observations of the geotechnical investigations conducted, with respect to the existing and planned TSF expansions, include:

- The TSF location remains suitable for the envisioned LOM expansions
- TSF embankments shall be founded on stiff to very stiff plastic soils and competent weathered to fresh bedrock following removal of topsoil as well as any saturated soft to firm vegetation laden soils (unsuitable materials)

- Structural fill for the TSF embankments can be sourced from active open pit operations and/or from waste rock dumps within the proximity of the construction zones. Other structural fill materials, including natural gravels and saprolites (extremely to distinctly weathered rocks), can be sourced from near surface materials within the TSF area
- A large extent of the south boundary embankments may be developed to abut the existing extensive mine waste rock dump, as practical, during expansions for the stability advantage it presents
- Low permeability materials (residual laterites) can be obtained from local borrows within the TSF area for embankment fill construction
- In-situ soils in the TSF basin, following removal of topsoil and other unsuitable materials, are generally suitable for construction of low permeable CSL or support subgrade for HDPE geomembrane as part of hydraulic barrier construction
- Drainage and filter/transition materials required for inclusion in the TSF permanent works can be sourced from locals borrows. Suitable mine waste rocks may also be crushed to drainage, filter or transition materials' specifications and stockpiled for use within economical hauls of the TSF construction
- Approximate average topsoil depth of 300 mm is anticipated over large areas of the expanded TSF. This shall be stripped and stockpiled in designated areas outside the LOM footprint of the TSF to support future facility closure and rehabilitation works
- Removal of unsuitable materials within the expanded embankment footprints and some basin areas would be required such that constructions are undertaken on competent foundation. Based on geotechnical investigation observations and previous construction experiences, the thickness of unsuitable materials to be removed is estimated to range from approximately 1.0 m to 3.0 m
- Vegetation clearing, grubbing and de-stumping will be required as part of foundation or subgrade preparations. Typical vegetation includes shrubs, palm trees, hardwood and softwood trees. Typical tree girths range from 0.3 m to 5.0 m

Geotechnical investigations conducted in the TSF vicinity, including observations of the most recent supplementary ground explorations completed in quarter 3 of 2021 (in support of the planned Stage 7 raise of the facility), provides information sufficient to support and guide the facility design/construction. Additional geotechnical investigations shall be conducted to support future expansions of the TSF as determined necessary and practical.

20.9.5 Tailings Physical Characteristics

Tailings physical testing of representative oxides and primary ore from the Nkran and Esaase orebodies was undertaken in 2012 and 2015.

Supernatant water release ranging from approximately 42% to 53% of slurry liquor is envisaged per the observations of the tests conducted. Tailings water release to the under-drainage system may range from approximately 5% to 20%, considering the: design/operations of existing drainage system; basin treatment; and deposited tailings thickness over the collection system. Tailings water release to the under-drainage system is envisaged to reduce during the later stages of the facility development due to consolidation and increased thickness of deposited tailings solids.

Where the TSF is efficiently operated, long term in-store densities of deposited slurry solids ranging from 1.40 t/m^3 to 1.50 t/m^3 may be realized. It is envisioned that minimum achievable in-store slurry solids density, considering ore blends and milling schedules for the LOM, shall be approximately 1.30 t/m^3.

The physical properties of the tailings are such that they would support recovery of large volumes of slurry water for recycling to process operations, reducing in-store pond volumes and demand for supply external to the TSF over the LOM; such that dam safety as well as downstream environmental risks are mitigated.

20.9.6 Tailings Geochemical Characteristics

Geochemistry testing of representative samples (of oxide and primary tailings) for the Nkran orebody was conducted by Genalysis in 2012. Both oxide and primary Nkran tailings samples were classified as non-acid forming or non-acid generating. The samples had a moderate number of elemental enrichments, although several metals of interest were found to be present. Arsenic and mercury classed as highly enriched in the samples tested. Boron was found to be highly enriched in the oxide samples.

Geochemical testing of three samples of tailings from the Esaase orebody was conducted by Environmental Geochemistry International ("EGi"). The tests conducted by EGi included both static testing and column leaching. The results of the static acid-base accounting testing indicate that the samples are all non-acid forming and do not present related environmental risks. The only element found to be significantly enriched was arsenic. The column leaching indicates that the leachate remained alkaline with a low salinity, and that the majority of highly soluble arsenic was removed in the processing stage at high pH. Arsenic leaching was therefore limited beyond the processing stage.

Due to observed elemental enrichment in the tailings evaluated, facility closure shall be developed to consider a cover or capping system to mitigate risks of tailings and constituent metals release into the external environment post LOM.

Based on the environmental control measures (i.e., CSL and/or HDPE geomembrane use, cut-off trenches or walls and under-drainage system) included in the facility design/construction, anticipated seepage should not adversely impact surface water and/or groundwater aquifers. However, as a precaution and further commitment to wildlife protection, the TSF may be fenced to mitigate access by as many terrestrial animals as practical.

21 CAPITAL AND OPERATING COSTS

Not applicable at the current stage of the Project.

22 ECONOMIC ANALYSIS

Not applicable at the current stage of the Project.

23 ADJACENT PROPERTIES

Properties adjacent to the Asanko Gold AGM area and tenements are shown below in Figure 23-1. The AGM properties are shown in bright red and are named. The property listing is shown in Table 23-1. These properties are all located within the Kumasi basin and share similar underlying deformed siliciclastic metasediments as the primary rock type, with a range of syn- to late tectonic granite intrusives mainly to the east of the AGM tenements. None of these adjacent properties host mineral resources that are in alignment with a Reporting Code such as JORC, SAMREC or CIM.

Information on adjacent properties are based on information publicly disclosed. The Qualified Person has been unable to verify the information regarding adjacent properties. The information regarding adjacent properties is not necessarily indicative of the mineralization on the Asanko Gold Mine.

Table 23-1 Adjacent Property Listing

Tenement /PL Number	Tenement Owner
137	Tropical Minerals Co. Ltd
91	Moseaso Co. Ltd
155	Joam Enterprise Ltd
169	Rock and Rivers
234	Triple Key Co. Ltd
150	Hawanah Natural Resources
138	U & N Ltd
145	Westminister
257	Star Gold Ltd

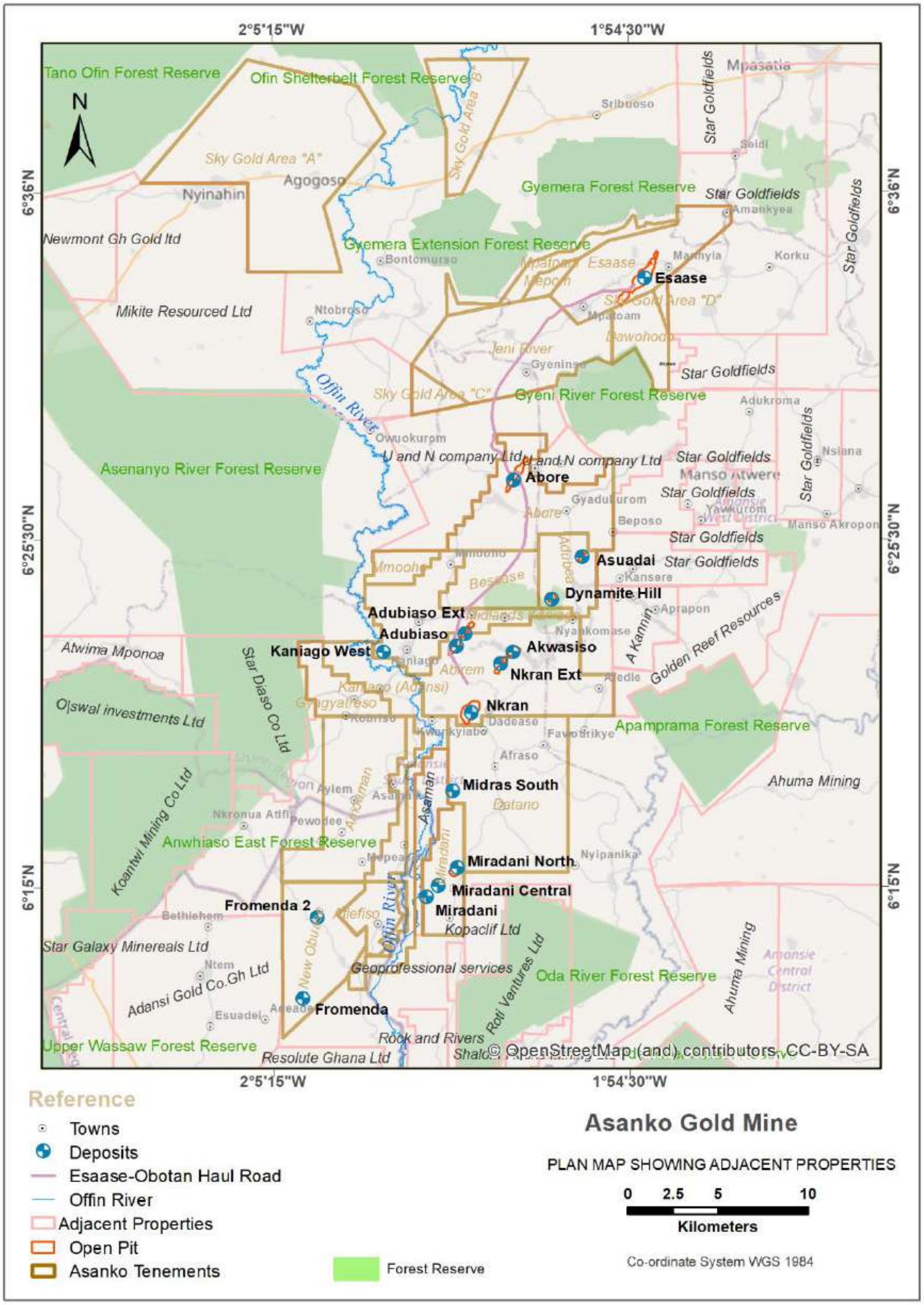


Figure 23-1 AGM Tenements and Adjacent Properties

Source: Asanko Gold Mine, 2021

24 OTHER RELEVANT INFORMTION

No other relevant information.

25 INTERPRETATION AND CONCLUSIONS

25.1 Risks

The following risks have been identified:

- Recent plant performance from predominantly Esaase fresh and transitional material has shown lower gold recoveries compared with the 2021 and prior metallurgical testwork as described in Section 13
- Variable nature of stockpiles: ability to accurately predict grades and recoveries in large continuous volumes of material
- Escalation of labour and material costs
- Gold price volatility

25.2 Opportunities

The Asanko Gold Mine will prioritize further work to advance on the understanding of Esaase metallurgy and geometallurgy to support a new optimized life of mine plan and re-instate Mineral Reserves. This will be facilitated by the fact that the Asanko Gold Mine is an established operation with a processing plant, site infrastructure, permits, and organizational capability already in place to readily support a future LOM.

Additional work programs are taking place concurrently to optimize capital and operating costs, ensure best practices in relation to the size and scope of the operations, infill drilling to de-risk investments, and drill mid- and long-term exploration prospects to accelerate addition of new Mineral Resources and provide more flexibility in mine planning.

Other opportunities identified include:

- Recovery upside - 2021 metallurgical testwork (A22281) for Esaase material demonstrated that an average recovery of above 90% is achievable. This program yielded slightly higher recoveries compared to previous metallurgical testwork at Esaase. It is indicative of upside potential to the current Esaase recovery estimates
- Metallurgical testwork has demonstrated that pre-treatment of Esaase carbonaceous material yields significant improvement in recovery in bench scale CIL tests. Additional work is required to investigate the applicability of kerosene pre-treatment in the plant environment
- Mass pull of the gravity concentrate can be increased with minor operational adjustments, which could yield better overall plant recovery
- Optimization of carbon management practices to introduce fresh or regenerated carbon to early stages of CIL is expected to partially mitigate effects of preg-robbing as demonstrated in previous metallurgical testwork
- Nkran Deeps (Underground potential) – Mineralization at Nkran remains open down plunge and extensions of the deposit would likely be amenable to underground mining methods. Additional deep drilling has commenced to explore the underground potential at Nkran
- Miradani Deeps (Underground potential) – A well-defined steeply northeast plunging shoot is evident in longitudinal section through the deposit. This high grade +80 gm.m shoot remains open at depth. Further drilling has commenced to explore for extensions and repetitions to this high grade zone
- Other exploration prospects as described in Section 9 provide additional opportunities to add to the Mineral Resources.

25.3 Geological Setting and Mineralization and Deposit Type

The understanding of the regional, local and property geology within the Asanko mineral concessions has been developed through many years of exploration and mining and is sufficient to support interpretation of the relevant geological controls, the length, width, depth and continuity of the mineralization, and type, character, and distribution of the mineralization hosted in these structurally controlled orogenic gold deposits.

However, structural controls and lithological controls on mineralization associated with orogenic gold deposits are particularly complex and often change with more detailed information, and exposure of the deposit during mining.

25.4 Exploration, Drilling, Sample Preparation and Analysis, and Security

The exploration programs completed to date are appropriate for the structurally controlled orogenic gold deposits found within the Asanko mineral concessions. Core and reverse circulation drilling, logging, sampling, sample preparation, and laboratory analysis methods used since 2014 have followed industry standards for structurally controlled orogenic gold exploration. Sample security since 2014 was in accordance with exploration practices and industry accepted standards. The limited availability of documentation supporting the drilling, logging, sampling, sample preparation, and laboratory analysis methods before 2014 is mitigated by the verification work completed and the quality and density of more recent data. No material factors were identified with the data collected from the drill programs that might affect the reliability or confidence in the exploration information. The drill hole spacing, the lithological, collar and down-hole survey, and density data collected during the exploration programs and the sample preparation and assay results allow for preparation of a reasonable estimate of the geometries, tonnage, and grade continuity of the mineralization.

25.5 Mineral Resources

The Mineral Resources are reported in accordance with the CIM Definition Standards for Mineral Resources & Mineral Reserves, adopted by CIM Council May 10, 2014 and assume open pit mining methods, milling and CIL gold processing methods. All reported resource estimates are constrained within conceptual open pits. Factors that may affect the Mineral Resource estimates include: changes to commodity price assumptions; changes to metallurgical recovery assumptions; changes to interpretations of geological continuity due to changes in geometallurgical, lithological, weathering or structural interpretations; changes to assigned density values in the estimation domains; changes to operating costs; changes to geotechnical characteristics; and changes to environmental, permitting and social license assumptions.

25.6 Mineral Reserves

At the time of the effective date of this Report, there remains an uncertainty in the variability of metallurgical recovery of gold from the Esaase deposit. Although all metallurgical testwork to date indicate predictable trends in the recovery of gold from the Esaase deposit, recent mill feed consisting of primarily Esaase material has demonstrated lower recovery. As a result, the Company has concluded that there is insufficient confidence in the understanding of the Esaase metallurgical variability to estimate Mineral Reserves.

Given the uncertainty of metallurgical performance on the Esaase material, Galiano Gold has decided not to state Mineral Reserves for all deposits. Any plant feed in the short term will have significant Esaase material present and overall recovery would therefore be difficult to predict.

Only the Esaase material is believed to be performing adverse to expectations. Recovery of gold from Nkran and all other satellite deposits remain of sufficient confidence, but will be subject to additional metallurgical testwork. Upon conclusion of the planned metallurgical testwork, Galiano Gold will prepare an updated technical report supporting an optimized life of mine plan, based on Mineral Reserves.

25.7 Metallurgical Testing and Recoveries

The 2021 testing for Esaase material (ALS report A22281) returned recovery results for the bulk composites that align with those from the 2018/19 Esaase testwork programs. As such, no change has been made to recovery estimates as per the Asanko Gold NI 43-101 Technical Report (2020) for the purpose of constraining a Mineral Resource estimate.

The recovery estimates are of sufficient confidence to determine reasonable prospect for eventual economic extraction; however, in light of recent plant performance of the Esaase material, further understanding of the Esaase metallurgical variability is required to have sufficient confidence to declare Mineral Reserves.

Gold recovery for Nkran and the satellite deposits is estimated to be 94% based on previous operational performance. Additional metallurgical testwork undertaken in 2021 for Nkran, Abore, and Miradani North material support that the assumed recoveries are valid.

25.8 Processing

The existing Asanko Gold Mine process plant located at Obotan is capable of processing 5.8 Mtpa of mill feed. The plant comprises of primary jaw crushing, SAG and ball mill, gravity concentration and ILR, pre-leach thickening, CIL, elution and gold room, and cyanide detoxification.

25.9 Infrastructure

The Obotan plant commenced production in early 2016. The plant was erected close to the Nkran deposit and in proximity to several satellite deposits.

Major site infrastructure consists of an office complex, metallurgical facility, Tailings Storage Facility, senior and junior accommodation and mess facilities, workshops, power distribution facility, a core storage facility, potable and operational water supplies, waste rock dumps, an upgraded dry weather air strip and a haul road from Esaase pit to Nkran pit.

The Tailings Storage Facility is located near the process plant and consists of multi-zoned downstream raised perimeter embankments.

25.10 Market Studies and Contracts

AGM has an off-take agreement to sell 100% of the future gold production up to a maximum of 2.2 Moz to the original project lender, Exp T2 Ltd (“Red Kite”). Arrangements for sale of production after this agreement is satisfied will be reviewed as required.

As of December 31, 2021, the AGM has delivered 1,299,256 ounces to Red Kite under the offtake agreement.

26 RECOMMENDATIONS

26.1 Metallurgy

To better understand the elevated tailings grade recently observed at the process plant, the following work is either in progress or is proposed:

- Diagnostic analysis on composite tail samples to determine the nature of unrecovered gold
- Laboratory and pilot-plant scale testwork to determine potential process modifications (finer grinding, improve gravity gold recovery, leach retention time, cyanide concentration, carbon densities, carbon activity and effective blinding of preg-robbing materials) to maximize gold recovery
- Core re-logging and geological mapping campaign to advance the interpretation and modelling of the geology at Esaase
- Additional drilling at Esaase to obtain fresh samples for metallurgical testwork.

The additional metallurgical drilling, sampling and testwork are estimated to cost between $3.0M to $5.0M USD.

26.2 Geology and Mineral Resources

- Esaase
  - Continue to monitor and analyze the QAQC performance of grade control RC samples and take measures to improve confidence in the data by reducing sampling errors in the field and improve the field duplicate precision. Increasing the grade control RC sample size is recommended
  - Improve the geological and geometallurgical model though continued drill core re-logging, detailed structural and lithological mapping and modelling. Continued geological work has indicated that folding may have played an important role in controlling the spatial distribution of gold-bearing veins at Esaase. Mapping and modelling of the folding structures are recommended to improve the geological and geometallurgical domaining
  - Systematic in-situ dry bulk density sampling and analysis to verify and improve the MRE and grade control bulk density model and improve production reconciliation
  - Based on the improved geological and geometallurgical model, add infill drilling where necessary to improve the short-term mine planning
- Nkran
  - Continue to review RC sampling QAQC especially field duplicate precision of high grade nuggety samples. If significant high-grade bias >10% is detected, alternate sampling and assay methods should be investigated
  - Review the IK controls used to estimate the mineralization volumes used for the gold grade estimation, especially in areas where the exploration drill spacing is variable
  - Complete additional infill drilling to de-risk the high-grade mineralization at depth, which is defined by limited drilling and has a significant influence on open pit depth and reasonable prospects for eventual economic extraction.
- Abore
  - Improve the geological model though the development of litho-chemical domains based on continued drill core re-logging to better understand the relation between gold grades and litho-chemical domains

    - Detailed structural mapping is recommended to improve the geological domaining for subsequent Mineral Resource models.
- Miradani North
    - Continue definition drilling to improve modelling of the shallower southeast dipping high-grade structures within the mineralized envelope. Drilling in northwest azimuth is preferred, focusing on the mineralized zones within the resource pit, prioritized for the contemplated future "starter pit" area. Oriented core measurement is recommended for all diamond core drillholes
    - Continue definition drilling to upgrade the near surface Inferred resources to Indicated
- Dynamite Hill
    - Conduct step-out drilling to explore and define potential near-surface resources of the southwest extension of the mineralized zone(s) that are amenable to open pit extraction

The infill drilling, core relogging, and geological mapping programs are estimated to cost between $10M to $15M USD. Underground potential drilling for Nkran and Miradani North is not included in this range and is further described in Section 26.3.5.

26.3 Exploration

26.3.1 Geological Mapping

In addition to the known mineralized belt, AGM owns a significant land position west of Asanko known as the Sky Gold tenements. Little work has been completed on these concessions, yet AGM pays a fee for their maintenance. It is recommended that a small team of geologists conduct reconnaissance geological mapping (and rock chip sampling) on these areas in order to form a view on their prospectivity and value.

The geological mapping of the Sky Gold tenements is estimated to cost approximately $0.5M USD.

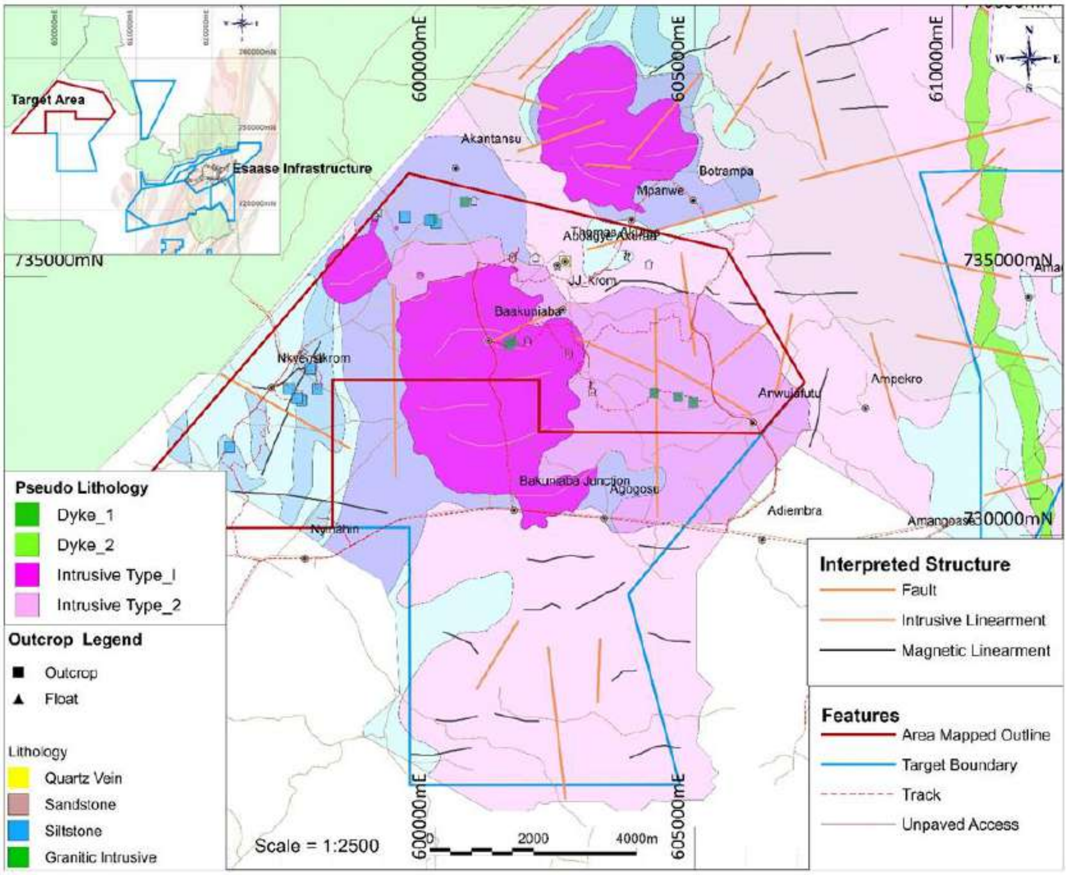


Figure 26-1 Location of Sky Gold Tenements West of the Esaase Deposit, with Geology Interpreted From Regional Geophysics

26.3.2 Geophysics

Follow up on the 2020 gradient array geophysics at Esaase by conducting high resolution (100 m line spacing) gradient array surveys along prospective structural corridors. This was originally to be completed in 2020/2021 but logistical challenges related to the global pandemic prevented implementation. Areas of focus should include but should not be restricted to areas along strike from the Jeni River, along strike extensions to Esaase, Nkran, Kaniago, Miradani and Midras deposits and prospects (see Figure 26-2 below).

In addition, deep IP should be considered at deposits such as Abore to explore for chargeability features that may indicate extensions to mineralization at depth and assist in more efficient drill targeting.

The geophysics program is estimated to cost approximately $0.5M USD.

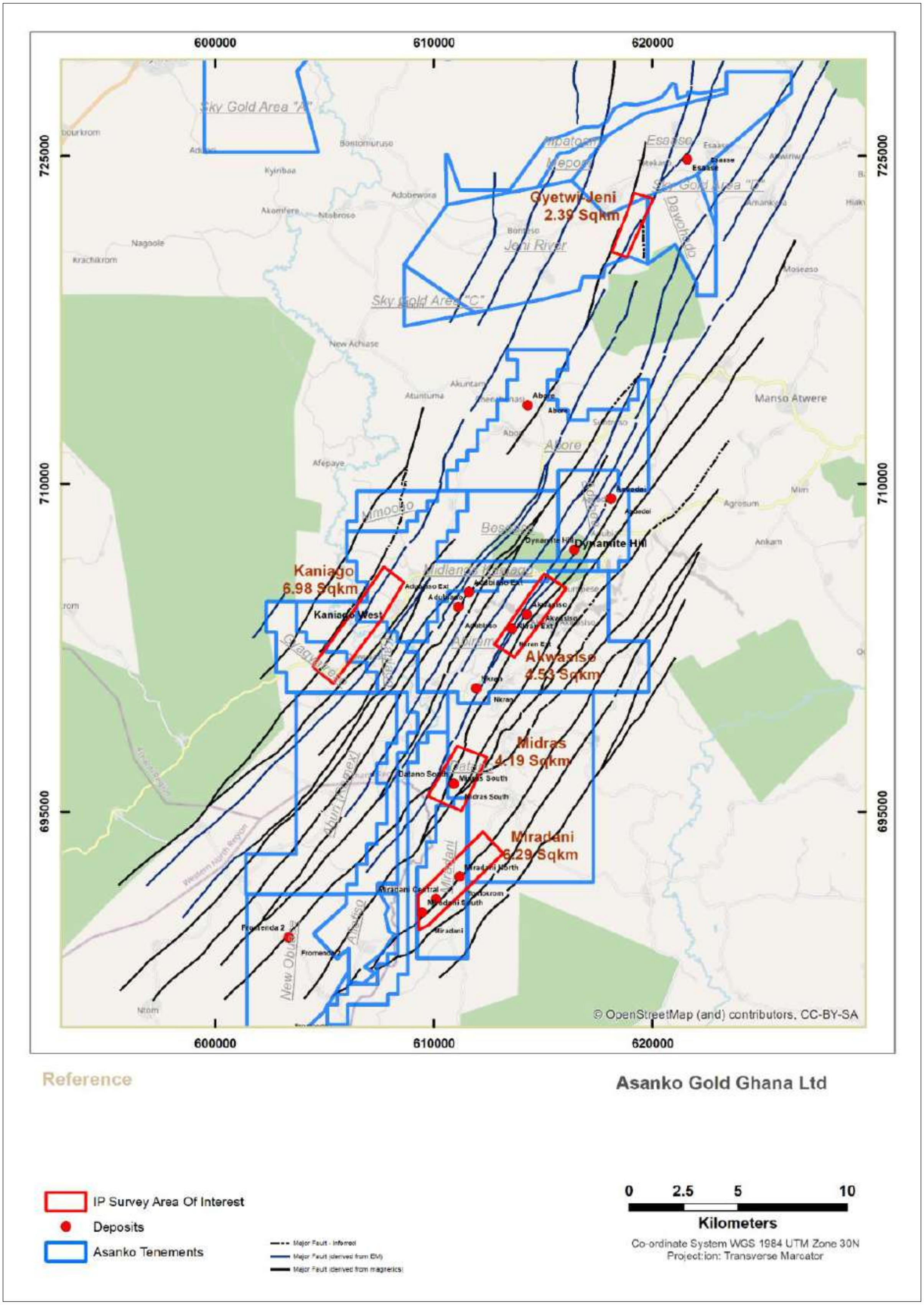


Figure 26-2 Location of Recommended Areas for Gradient Array Survey

26.3.3 Geochemistry

Ore mineragraphy completed on Esaase ore samples (Di Prisco, 2011) supports a spatial if not temporal relationship between gold and arsenopyrite (and to a far lesser extent chalcopyrite and galena). Visual observation of drill core taken together with assay data suggests this arsenopyrite – gold relationship is common in deposits explored by AGM in the Asankrangwa belt. Multi-element analysis of a statistically meaningful amount of historical core/pulp to build on AGM's understanding of the spatial arsenic-gold relationship (and thus use arsenic as a footprint for gold) would be prohibitively expensive. A cost effective and reliable method of collecting arsenic (as a proxy for arsenopyrite) data is pXRF analysis. It is recommended that AGM purchase an additional Olympus pXRF instrument and undertake collection of pXRF data on all drill holes of selected sections on several of its deposits. Building 3D models of arsenic distribution may well provide useful vectors to additional mineralization.

In addition to the above, the collection of pXRF data from soil and trench sample could provide a quick and cost-effective filter for higher priority areas the explore.

The geochemistry program is estimated to cost approximately $0.5M USD.

26.3.4 Spectral

Gold mineralization at the AGM deposits has a recognizable sericite-carbonate signature, well noted in logging, paragenetic (Davis, 2016) and petrological studies (Nude, 2011, and Di Prisco, 2011). However, the current dataset cannot be used to construct a reliable alternation model for these deposits due to historical inconsistent logging. A solution to this would be to dedicate a geologist to the collection of spectral data using the companies currently inactive spectrometer. This data could be submitted to a consultancy for interpretation and use in better understanding hydrothermal alteration of the AGM deposits.

The spectral program is estimated to cost approximately $0.5M USD.

26.3.5 Drilling

26.3.5.1 Nkran Deeps

Underground mining scenarios have long been considered at Nkran. Resolute Mining included a modest underground resource (Spiers, 2010), and AGM have reviewed the idea of underground mining at Nkran at a conceptual level. Additional deep drilling is recommended to explore for significant down dip and down plunge mineralization at Nkran.

In the event of a successful conclusion of Phase 1 drilling, Phase 2 drilling campaign will be recommended to further quantify potential for Nkran Deeps.

The Phase 1 Nkran Deeps directional drilling program is estimated to cost between $2.0M to $3.0M USD.

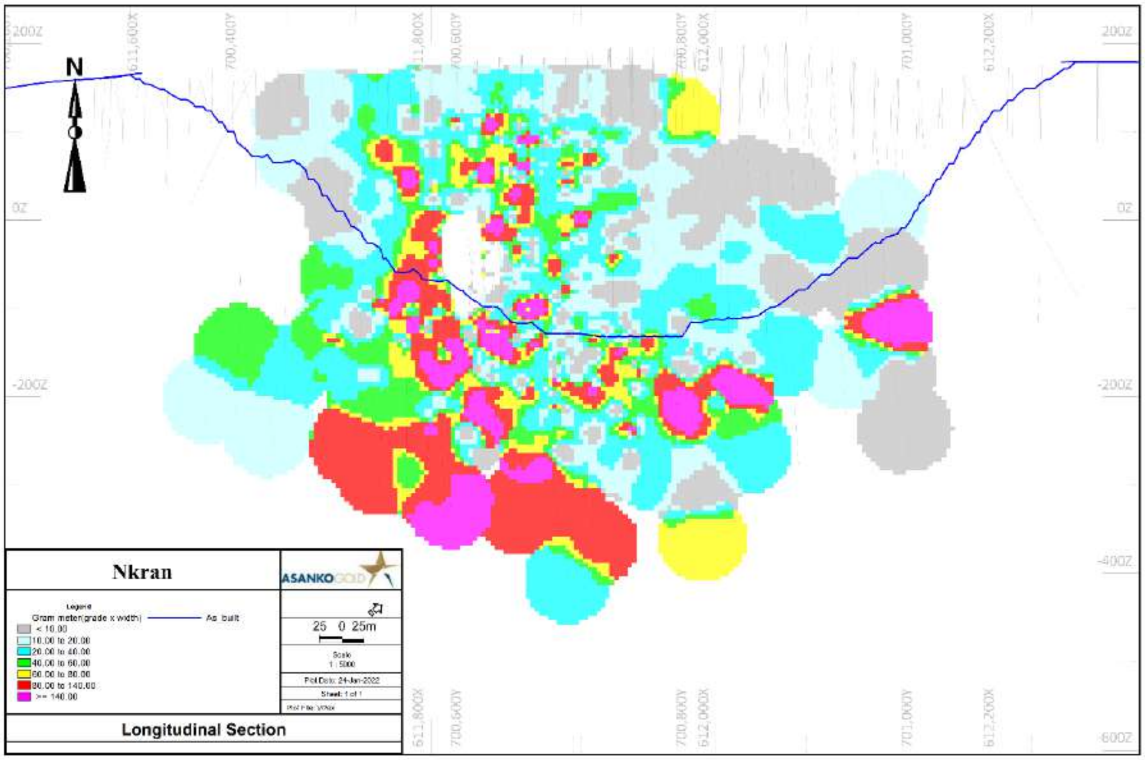


Figure 26-3 Longitudinal Section Through the Nkran Deposit Showing Multiple Shoot Trends That Hold Potential for Additional Resources

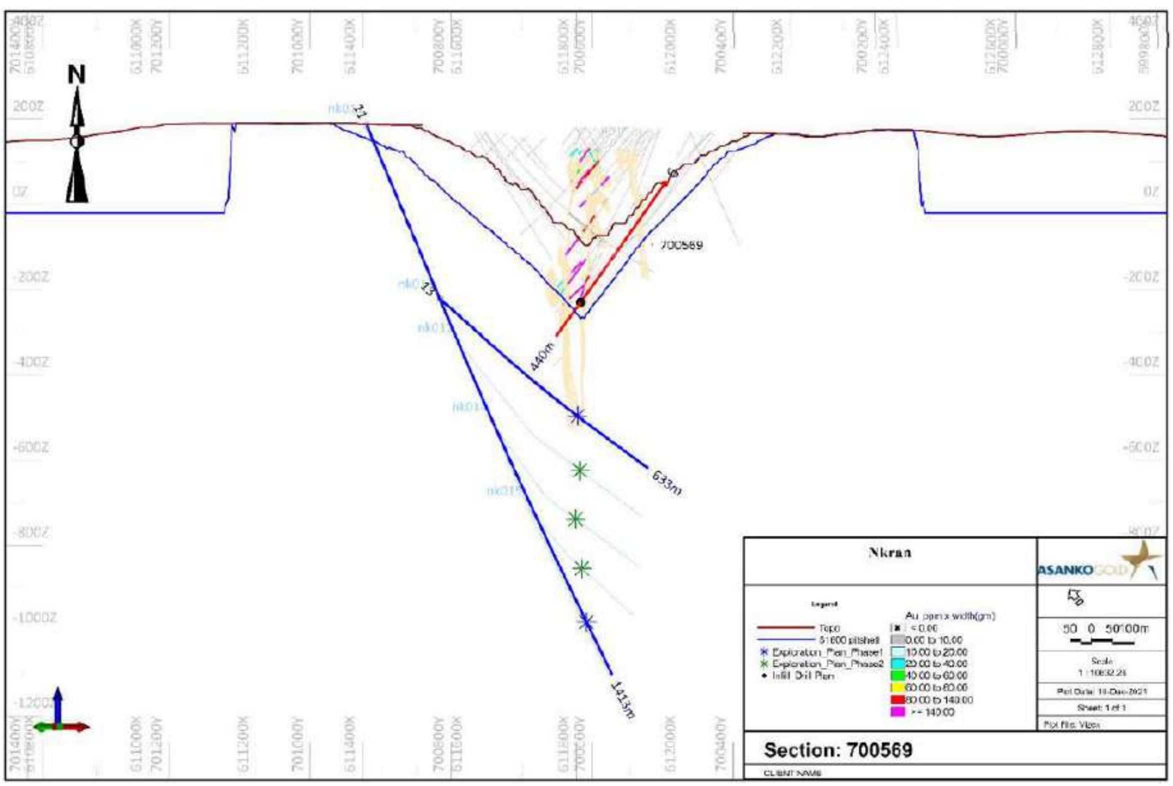


Figure 26-4 Cross-section Through the Nkran Deposit With Possible Deep Drilling Hole Traces

26.3.5.2 Miradani Deeps

The Miradani North deposit shows many similarities to Nkran, including a tonalite intrusive association and the existence of high-grade shoots. A well-defined steeply northeast plunging shoot is evident in longitudinal section through the deposit, as seen in Figure 26-5 below. This high grade +80 gm.m shoot remains open at depth and further drilling should be considered to explore for extensions and repetitions to this high grade. In the event of a successful conclusion of Phase 1 drilling, Phase 2 drilling campaign will be recommended to further quantify potential for Miradani Deeps.

The Phase 1 Miradani Deeps directional drilling program is estimated to cost between $2.0M to $3.0 USD.

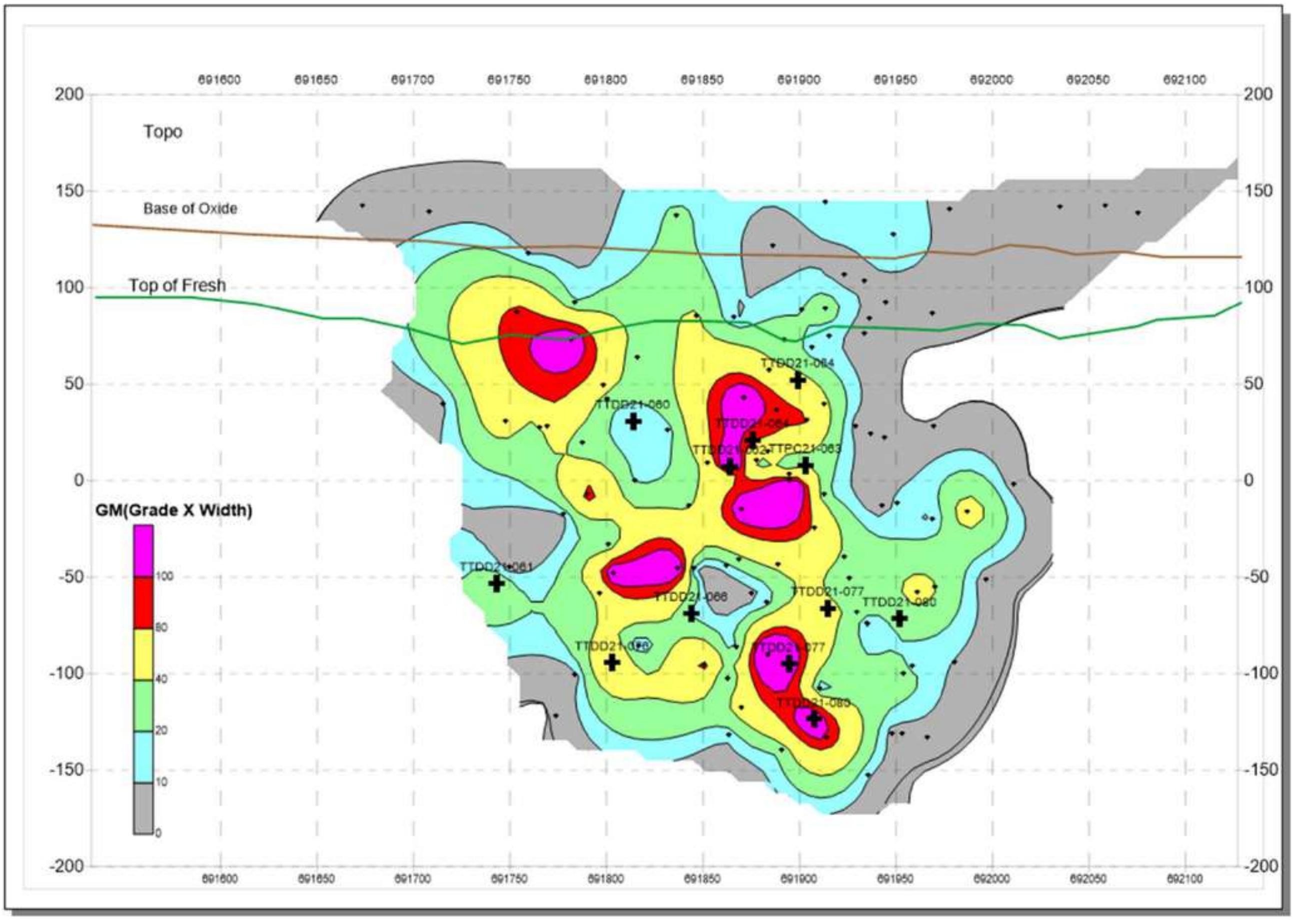


Figure 26-5 Longitudinal Section Through the Miradani North Deposit

26.3.5.3 Other Exploration

Considerable potential exists for the discovery of additional gold resources on the AGM licenses, near existing operations as well as regionally.

A number of poorly tested prospective trends recognized during earlier prospectivity analysis were followed up by AGM with drilling, mapping and sampling, and in some cases trenching in 2021. These include the Gyagatreso-Kaniago-Abore trend, the Greater Midras-Nkran-Takorase trend, the Datano-Fawotrikye trend and the Abore-Jeni River-Esaase trend. These areas were highlighted due a combination of coincident structural and soil geochemical anomalies, and in some cases topographic highs and may relate to zones of veining and silicification associated with mineralized systems. Follow-up exploration is recommended for these prospects.

A budget of approximately $5.0M USD is planned in 2022 for greenfield generative exploration, and will be re-evaluated on an annual basis.

26.4 Operating Cost Optimization

The following operating cost optimization opportunities have been identified to be evaluated in further detail:

- Competitive tenders for mining and all major consumable contracts
- Material movement study to reduce rehandling costs
- Self-performance of drill & blast, grade control drilling, and ore rehandling
- Fleet management system
- Labour rationalization

This work program is estimated to cost approximately $0.5M USD and is expected to take place in 2022.

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