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**PRELIMINARY ECONOMIC ASSESSMENT  
AND UPDATED MINERAL RESOURCE ESTIMATE  
OF THE SHOVELNOSE GOLD PROPERTY – SOUTH ZONE,  
NICOLA AND SIMILKAMEEN MINING DIVISIONS,  
BRITISH COLUMBIA**

**LATITUDE 49°51'25" N LONGITUDE 120°48'25" W  
UTM NAD83 Z10N 657,700 m E AND 5,522,600 m N**

**FOR  
WESTHAVEN GOLD CORP.**

**NI 43-101 & 43-101F1  
TECHNICAL REPORT**

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## **1.0 EXECUTIVE SUMMARY**

The following report was prepared by P&E Mining Consultants Inc. (“P&E”) to provide a National Instrument (“NI”) 43-101 Technical Report, Updated Mineral Resource Estimate and Preliminary Economic Assessment for the Shovelnose Gold Property - South Zone, (“the Property” or “the Zone”), located approximately 30 km south of the City of Merritt and immediately east of the Coquihalla Highway, in south-central British Columbia (Canada). The Property is owned 100% by Westhaven Gold Corp. (“Westhaven”).

The Property hosts a low sulphidation epithermal gold-silver deposit. Gold is the dominant metal. The close proximity to both the City of Merritt and the Coquihalla Highway provides the Property with logistical support, access, and an excellent transportation and power supply corridor.

An Initial Mineral Resource Estimate for the Shovelnose Gold Property – South Zone was prepared by P&E with an effective date of January 1, 2022, and was created using an open pit constrained cut-off grade of 0.35 g/t AuEq. Since that time there has been additional drilling on the Property, additional mining potential evaluation, and P&E now considers the mineralization at the South Zone to be potentially amenable to underground mining methods. An Updated Underground Mineral Resource Estimate has been created using a 1.50 g/t AuEq cut-off grade.

This Updated Mineral Resource Estimate and Preliminary Economic Assessment (“PEA”) for the Shovelnose Gold Property – South Zone has an effective date of July 18, 2023. The Updated Mineral Resource Estimate has been prepared according to CIM Definition Standards - For Mineral Resources and Mineral Reserves (2014) and CIM Best Practices Guidelines (2019). Westhaven, the issuer, is a public company trading on the TSX Venture Exchange (“TSX-V”) with the trading symbol WHN.

This NI 43-101 Technical Report and PEA will be referred to as the “Report”. Authors and Co-Authors of Report sections are referred to as the “Authors”.

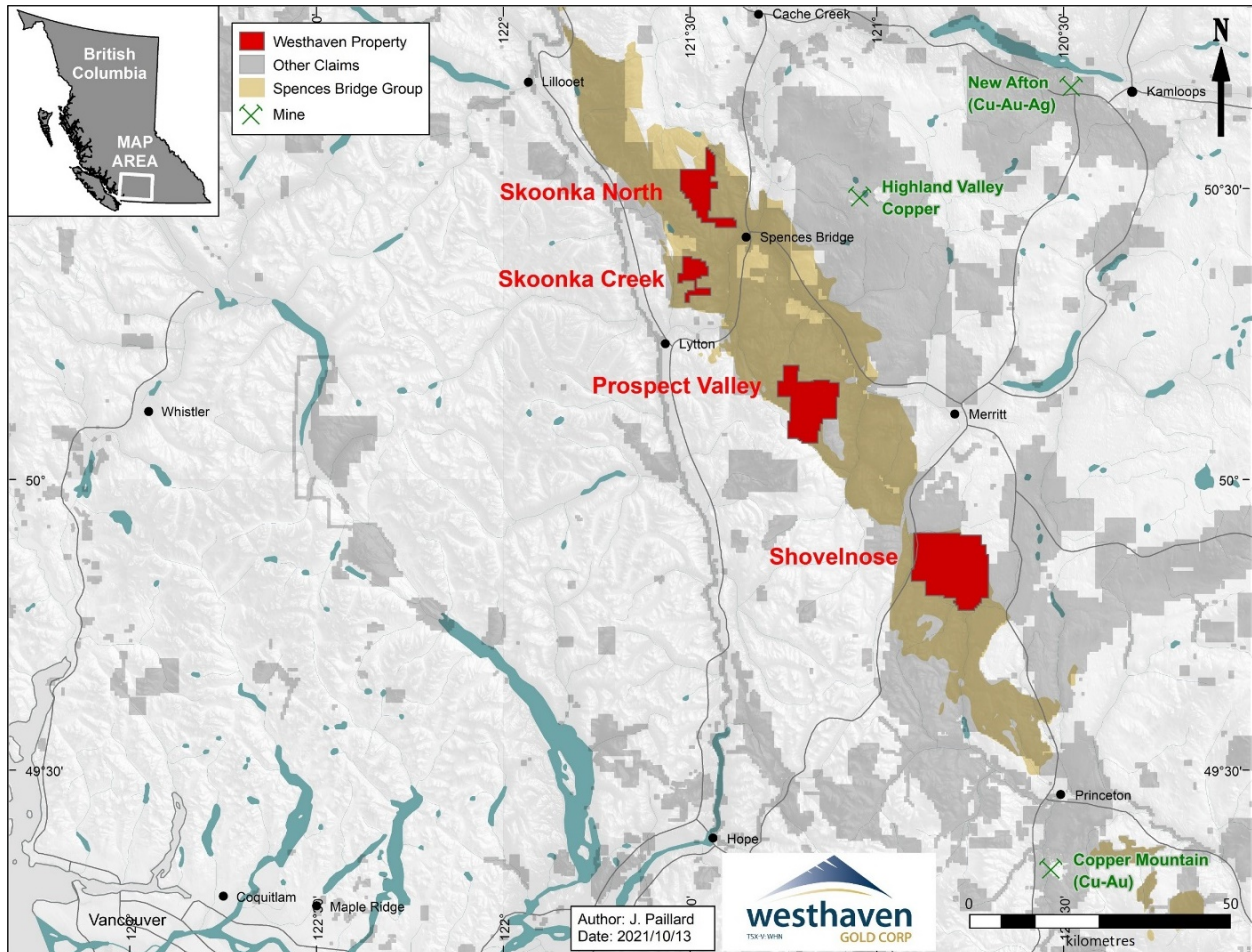
### **1.1 PROPERTY DESCRIPTION, LOCATION, ACCESS AND PHYSIOGRAPHY**

The Property is contiguous and consists of 32 mineral claims located within the Nicola and Similkameen Mining Divisions of British Columbia. The mineral claims cover approximately 17,625 ha. The Property is centered at approximately latitude 49°51’25” N and Longitude 120°48’25” W or at 657,700 m E and 5,522,600 m N (North American Datum 83 Universal Transverse Mercator Zone 10N) (Figure 1.1). The mineral claims are currently 100% owned by Westhaven, subject to a total of 4.0% net smelter return royalties that can potentially be bought down to a total of 2.5%.

The Shovelnose Gold Property is located by road approximately 30 km south of the City of Merritt, B.C. and 270 km northeast of Vancouver. To access the northern portion of the Property, turn off the Coquihalla Highway at the Coldwater exit and drive approximately 3 km north to the Kane Valley Road. For the south and central portions of the Property, including the focus areas of drilling from 2011 through 2021, turn off the Coquihalla Highway onto the Coldwater Road, and either travel eastwards up the Shouz Creek Forest Service Road (“FSR”) or southeast towards the

Community of Brookmere. Follow the Coldwater Road southeast to the Kilometre 41 marker and turn north onto the South Shovelnose FSR.

**FIGURE 1.1 SHOVELNOSE PROPERTY LOCATION MAP**



*Source: Westhaven (December 2021)*

The Property benefits significantly from close proximity to the City of Merritt, which is the nearest full-service community to the Shovelnose Property with a population of 7,179 (2023) persons. The main industries are forestry, ranching and tourism/hospitality. Merritt lies at the cross-roads of the Coquihalla Highway (No. 5) between Vancouver and Kamloops, the Okanagan Connector Highway (No. 97C) between Merritt and Kelowna, and Highway 8 between Merritt and Spences Bridge. Merritt has a wide range of suppliers and contractors available for mineral exploration and mining, including a bulk fuel supplier, heavy equipment contractors, a helicopter base, and labour. Merritt is served by a 69 kV electrical transmission line. Mainlines for the Canadian Pacific Railway (“CP”) and Canadian National Railway (“CN”) railroads follow the Fraser River, located 35 km to the west, and CP formerly had a spur line into Merritt.

High voltage transmission lines running from the Interior of BC to the Lower Mainland cross the Coquihalla Highway approximately five km north of the Coldwater Road exit. The Trans Mountain oil pipeline (Edmonton to Vancouver) and the Enbridge main natural gas transmission line (Fort Nelson to the US border) each run south along the highway service corridor just west of

the Property. A radio/cellular tower is located on the top of Shovelnose Mountain, which provides excellent communication throughout the Property.

The Coldwater River runs along the western Property boundary and represents a potential water source. Approximately 400 km of active and deactivated logging roads and trails facilitate easy access to most of the Property using four-wheel drive vehicles.

The climate in the Merritt area is dry with little precipitation (annual mean total of 321 mm), mild winters (approximately  $-3^{\circ}\text{C}$ ), and temperate spring and fall seasons ( $\sim 7^{\circ}\text{C}$ ). It is one of the warmest places in the Thompson-Nicola region, with warm and sunny summers ( $\sim 26^{\circ}\text{C}$ ) and 2,030 hours of sunshine per year. Higher elevations at Shovelnose Mountain result in more extreme temperature and precipitation ranges.

The western and northern parts of the Shovelnose Property lie within the Coldwater River drainage basin (Nicola drainage), whereas streams in the central, eastern and southern parts flow into the Similkameen River drainage. The Property is situated on a plateau with several small, steep rolling hills, including Shovelnose Mountain. Shovelnose Mountain lies within a broad transition from coastal to interior climatic zones.

## **1.2 HISTORY**

The discovery of placer gold ignited the Fraser and Thompson Rivers gold rush in the late 1800s and early 1900s. Placer gold was mined from gravel bars on major tributaries in the Ashcroft-Lytton-Lillooet District. In particular, the Nicoamen River, located 23 km northwest from Shovelnose Mountain, played a role in initiating the gold rush in the Merritt Region. In 1994, a government-sponsored regional silt sample survey anomaly in an east-west trending creek southeast of Kingsvale, on the northwestern flank of Shovelnose Mountain and within the current Property, returned an anomalous value of 68 ppb Au. In 2001-2002, Fairfield Minerals Ltd. completed regional scale prospecting and reconnaissance geochemical sampling programs targeting the Spences Bridge Group of rocks guided by BC government-sponsored regional stream sediment sampling surveys to prioritize areas. Results from this work identified several areas with potential for gold mineralization.

Strongbow Exploration Inc. (“Strongbow”) undertook gold exploration programs on the northwest portion of the current Property between 2005 and 2010. In October 2005, Strongbow staked the original Shovelnose claims, based on the 1994 government-sponsored regional silt sample survey anomaly. Between 2006 and 2010 Strongbow actively explored the Shovelnose Gold Property, resulting in the discovery of four surface gold occurrences (Mik, Line 6, Tower and Brookmere) and the recognition of other potential soil geochemical targets. Strongbow optioned the Shovelnose Gold Property to Westhaven in 2011.

## **1.3 GEOLOGY, MINERALIZATION AND DEPOSIT TYPE**

The Shovelnose Gold Property is underlain by late Triassic Nicola Group volcanic and equivalent-aged intrusive rocks, and rhyolitic flows and tuffs of the Pimainus Formation of the Spences Bridge Group, a mid-Cretaceous subaerial volcanic succession, unconformably overlain by resistive mafic volcanic rocks of the Eocene Princeton Group. A series of small syenite bodies and mafic dykes

intrude into and crosscut the volcanic stratigraphy. Northeast and northwest trending, west-side down normal faults offset both the Nicola and Spences Bridge Group rocks.

Structurally hosted low-sulphidation epithermal gold and silver mineralization has been drilled in nine zones on the Property. Seven of those are structurally linked along a 4-km northwesterly trend that is open to the east and west. Soil geochemistry, magnetic surveys and, to a smaller extent, IP and DC Resistivity surveys have been instrumental in defining structural zones and linear trends along which exploration has focused.

Exploration to date on the Property has largely been focused on the South Zone, which is made up of three main separate sub-parallel gold vein zones. Vein Zone 1 consists of a zone of quartz veining traced by drilling over a strike length of 4 km (Othello Zone to Franz Zone) and a vertical extent of at least 350 m along a northwest-striking, steep southwest-dipping normal fault. Vein Zone 2, situated 100 m to 150 m to the northeast of Vein 1, has been traced for 1 km (South Zone to Alpine Zone to Tower Zone) over a vertical height of at least 400 m. Vein Zone 3, a splay off Vein Zone 2, located just east of the Alpine Zone, has been traced by drilling over a strike-length of at least 200 m and a vertical range of at least 130 m. Drill results from the South Zone include: 46 m of 8.9 g/t Au with 65.5 g/t Ag (hole SN18-15); 91 m of 6.2 g/t Au with 25.5 g/t Ag (hole SN19-01); and 66.5 m of 9.1 g/t Au with 10.0 g/t Ag (hole SN19-01).

Interpretation of the quartz veining suggests that the three vein systems composing the South Zone intersect at depth. Vein Zone 1 mineralization is the most prominent vein system for a 550 m strike length, where it appears to merge with Vein Zone 2 mineralization to the south. Intersections of quartz veining containing gold mineralization occur between Veins Zones 1 and 2 over a 300 m strike length, potentially enlarging the widths and the intensity of gold mineralization between cross-sections. Vein Zone 3, for the most part, has only been drill tested at depths >250 m from surface, and therefore, near-surface gold mineralization is unknown at this time. Northwards, the projected surface trace of mineralization in Veins Zones 2 and 3 appear to diverge from Vein Zone 1. Drilling to date at the South Zone has been conducted on approximately 50 m centres.

In addition to the main Vein Zones, the Veinlet Domain is a broad zone containing a number of irregularly distributed sheeted veins that are commonly in the range of 2 cm to 10 cm thick, and can exceed 15 cm to 20 cm. Veins within the domain consist of white to grey chalcedony veins, some well mineralized and hosting mm-scale ginguero bands. Individual veins and veinlets within this domain do not demonstrate lateral continuity, at least as currently understood. The Veinlet Domain occurs predominantly between the main Vein Zones (concentrated between Vein Zones 1 and 2, and between Vein Zones 2 and 3), and is also observed in the hanging wall of Vein Zone 1, to the northwest of the main Vein Zones and, to a smaller extent, in the Vein Zone 3 footwall.

Mineralization in the Vein Zones of the South Zone is dominated by ginguero, a cryptocrystalline, unsorted, amalgamated sulphide dust that precipitates as black, mm-scale bands along crustiform and colloform bands in vein zones. Ginguero typically occurs as black bands, and locally may be discreet amalgamations of crystals. Sulphides present are chalcopyrite, electrum, naumannite, sphalerite, galena, pyrite and marcasite, with minor amounts of acanthite, aguilarite, tetrahedrite, greenockite (or hawleyite), Au-Ag selenide, hessite, pyrrargite and miargyrite. Pyrite ± marcasite occur in association with veining, however, generally occur peripheral to main vein zones and are limited in extent. Visible massive or crystalline sulphides are very rare at the South Zone. Gold



grades in ginguro-rich zones at the South Zone commonly exceed 30 g/t (drill hole SN19-01 intersected 39.3 g/t Au over 12.66 m).

A scanning electron microscope study of the mineralization demonstrated that the native gold has variable Au:Ag ratios, and appears to be Ag rich. In addition to native gold, the only other gold-bearing phase identified is electrum. The electrum occurs intergrown with pyrite, chalcopyrite, sphalerite, galena and a variety of sulphosalts in trace amounts. The silver selenide naumannite ( $\text{Ag}_2\text{Se}$ ) is the most common sulphosalt observed with electrum. Aguilarite ( $\text{Ag}_4\text{SeS}$ ) was also observed. Native silver was observed enclosing electrum. These minerals all occur as complex composite grains generally <50  $\mu\text{m}$  in size and are commonly much finer grained. Numerous grains <1  $\mu\text{m}$  in size occur around larger grains in the ginguro bands and the more diffuse clots.

Galena can contain a small amount of silver, or possibly includes a silver phase too fine-grained to observe. Enargite ( $\text{Cu}_3\text{AsS}_4$ ) is the main sulphosalt phase. Eckerite ( $\text{Ag}_2\text{CuAsS}_3$ ) and a silver telluride, possibly hessite ( $\text{Ag}_2\text{Te}$ ), are also present.

The mineralization at the Shovelnose Gold Property - South Zone is typical of low-sulphidation epithermal systems in subaerial volcanic rocks.

The Shovelnose mineralized zones that are not included in the current Mineral Resource Estimate consist of the Tower, Forget Me Not (“FMN”), Franz, Mik, Line 6, Brookmere, Kirton and Romeo Zones. Tower, FMN and Franz occur along the main mineralized trend to the north of the South Zone. Mik, Line 6, Brookmere and Kirton occur to the west and Romeo to the east of the main mineralized trend. HYD BX 02 and HYD BX 04 are new discoveries made in 2023 and are located to the east of the main mineralized trend.

## **1.4 EXPLORATION AND DRILLING**

Westhaven has carried out exploration surveys, rock characterization studies and drilling programs on the Property since 2011. The exploration surveys include geochemical (soil, silt and rock) and geophysical (airborne magnetics and electromagnetics, ground magnetics, induced polarization and direct current, controlled-source magnetotellurics) programs, a LiDAR survey, trenching, and petrographic and NIR reflectance spectroscopy rock studies. The exploration surveys successfully identified many anomalies and areas of interest along and proximal to major structures for follow-up drill testing.

Westhaven has completed 478 diamond drill holes totalling 165,842 m on the Shovelnose Gold Property from 2011 to 2023. Westhaven’s drilling activities to date have been focused on the western half of the Shovelnose Property, targeting zones of exploration interest (Mik, Line 6, Tower, Alpine, Lear, Franz, FMN, Othello and Romeo Zones), and focused primarily on the South Zone since 2017. Westhaven’s drilling from 2011 through much of 2017 (47 drill holes; 9,669 m) targeted the Mik, Line 6, Alpine and Tower Zones, in an effort to identify feeder zones or controlling structures for the mineralization mapped in surface trenches. Although the results from that work were encouraging, mineralized intercepts were confined to near-surface stratigraphy and a deeper mineralized feeder was not identified. Highlights of the 2011 to 2017 work include 11.2 m of 0.97 g/t Au with 7 g/t Ag starting at 29.7 m in drill hole SN-12-04 of the Tower Zone.

The final two drill holes of the 2017 drill program (SN17-06 and SN17-07) were drilled south of the Alpine Zone, into an interpreted down-dropped block, and discovered mineralization at what is now known as the South Zone. Drill hole SN17-06 intercepted 85 m of 0.5 g/t Au with 1.4 g/t Ag starting at 141 m downhole. Drill holes SN18-01 to SN18-08 continued to test the extents of this South Zone mineralization, with drill holes SN18-09 and SN18-11 intersecting a series of stacked multi-metre scale quartz veins (Vein Zone 1). Geological interpretation suggested that these intersections were too low in the epithermal system, beneath the critical paleo-boiling point at which gold is generally deposited. Drill hole SN18-14 was collared to test the projected up-dip extension of the mineralized system and intersected 19.0 m of 23.0 g/t Au and 102.7 g/t Ag (209 m to 228 m). The next drill holes were completed at 100 m step-outs along strike in both directions from SN18-14. The azimuth orientation of these latter drill holes was adjusted from 110° to 060° to better test the epithermal system.

The South Zone was the focus of drilling through 2018 and 2019, with one of the best reported intersections from drill hole SN19-01: 12.66 m of 39.3 g/t Au and 133.1 g/t Ag (154.34 m to 167.00 m). Further drilling in 2019 suggested the presence of additional fault controls on mineralization that have been incorporated into the geological model, discovered additional mineralization subsequently named Vein Zones 2 and 3, and extended the strike length of Vein Zone 1 to 840 m.

Most of the 2020 drilling targeted exploration sites outside of the South Zone, indicated the vein sets thinned to the southeast (Othello Zone), and potentially continued to the north and northwest into the Lear and Alpine Zones. Gold mineralization at the South Zone is concentrated over a 200 m vertical height between 1,100 m asl and 1,300 m asl that conforms to the boiling level of epithermal mineralizing fluids. Drilling at the South Zone in 2021 was designed to demonstrate continuity of mineralization, test for additional veining immediately to the east of Vein Zone 3 within a theoretical open pit shell, evaluate the northwestern extent of the vein systems, and support the Initial Mineral Resource Estimate.

Subsequent to the South Zone drilling used in the current Mineral Resource Estimate, an additional 17 drill holes totalling 4,902 m (drill holes SNR21-41 to SNR21-57) were completed in the northwestern part of the area of interest. A total of 2,259 samples have been collected from these drill holes and submitted for assay.

Additional drilling was completed outside of the South Zone between 2018 and 2021. During 2019, Westhaven realized that the previous drilling at the Tower Zone had potentially intercepted parts of Vein Zone 1 and Vein Zone 2. Several drill holes were planned in 2019 to test this hypothesis and are included in the current Updated Mineral Resource Estimate. Drilling in 2020 continued to explore this trend from the South Zone in northwesterly 100 m step-outs through the Tower and Mik Zones, which resulted in the discovery of the FMN Zone. In August of 2020, prospecting discovered surface outcrops of mineralized epithermal quartz veining, dubbed the Franz Zone, to the northwest along the same trend. Drilling at the Franz Zone commenced in September 2020. At that time, Vein 1 had been traced successfully along a 4 km trend from the South Zone to the Franz Zone.

The FMN and Franz Zones were further drill tested in 2021, and Westhaven has now completed 42 drill holes totalling 21,015.4 m in the FMN Zone and 28 drill holes totalling 7,732.0 m in the

Franz Zone. Drilling of Franz and FMN has identified mineralized grades, widths and geology similar to the South Zone. All three zones are at roughly the same elevation, and it appears that the paleo-boiling zone favourable to hosting gold mineralization is preserved in the FMN and Franz Zones. Distinct differences from the South Zone include the much higher silver content in FMN and Franz and presence of potassium feldspar within the mineralization. In the South Zone, potassium feldspar occurs in quartz veins below the mineralized zone.

An additional 55 drill holes totalling 26,093 m were completed on other areas of the Property from 2018 to 2021, as far east as the Romeo Zone. These drill holes targeted geophysical features (interpreted magnetic lineaments and alteration zones, CSAMT or DC resistivity responses, etc.) and geochemical anomalies (e.g., gold in soils or arsenic in rocks), or were step-out drilling from the known zones. Drill hole SN20-88 (Mik Zone) returned 2.58 g/t Au over 3.0 m, and drill hole SN20-103 (Tower Zone) returned 1.81 g/t Au over 1.1 m.

During the 2022 exploration program, 142 drill holes totalling 38,191 m were completed at Shovelnose, including the extension of drill holes SN21-194 and SN21-195, where work had been suspended due to forest fires in 2021. Drill core samples were collected from all drill holes, representing 35,010.3 m in 17,818 samples. Most of the drilling targeted the FMN Zone, although some drilling was undertaken at the Franz, Portia and Alpine Zones, and to the southwest and southeast of the South Zone. Drilling was also initiated at two outlying areas, the HYD BX-02 and HYD BX-04 Targets, where hydrothermal brecciation had been identified from past surface mapping and geochemical anomalies.

Westhaven also completed a preliminary 3-D geological model for the FMN Zone, based on 138 drill holes totalling 46,232 m. This geological model was developed as an important tool for understanding the potential controls on gold and silver mineralization, and suggests that the Tower area between the FMN Zone and the South Zone should be explored in more detail.

The 2023 drill program, up to the effective date of this Report, involved completion of three drill holes totalling 516 m at the Franz Zone, four drill holes totalling 1,163 m at the HYD BX 02 target, and six drill holes totalling 2,489 m in the Kirton Target area. Drill holes SN23-336 and SN23-337 were completed on the southeast part of the Franz Zone, whereas SN23-338 was completed on the northwestern part of the Zone. Franz Zone drill hole SN23-336 returned 1.18 g/t Au and 16.85 g/t Ag over 14.04 m from 49.04 m downhole and SN23-337 returned 18.41 g/t Au and 42.64 g/t Ag over 19.75 m from 21.25 m downhole.

## **1.5 SAMPLE PREPARATION, ANALYSES, SECURITY AND VERIFICATION**

Westhaven have implemented a robust quality assurance/quality control (“QA/QC”) program for drilling at the Shovelnose Gold Property. It is recommended that the Company continue with the current QA/QC protocol, which includes the insertion of appropriate certified reference materials (“CRMs”), blanks and duplicates, and to further support this protocol with umpire assaying (on at least 5% of samples) at a reputable secondary laboratory.

Verification of the assay database for the drilling was performed by the Authors against laboratory certificates that were obtained independently from ALS of North Vancouver, BC. Approximately

98% of the entire database was verified for gold and silver. No errors were observed in the assay database.

The Shovelnose Gold Property was visited by Mr. Brian Ray, P.Geo., of P&E, on September 27, 2021, for the purpose of completing a site visit and conducting independent sampling. Mr. Ray, a Qualified Person under the regulations of NI 43-101, collected 23 samples from 12 diamond drill holes from the South Zone. Samples were selected from drill holes completed in 2018, 2019 and 2021. Samples over a range of grades were selected from the stored drill core. Samples were collected by taking a quarter drill core, with the other quarter drill core remaining in the drill core box. Individual samples were placed in plastic bags with a uniquely numbered tag, after which all samples were collectively placed in a larger bag and couriered by Mr. Ray to Actlabs in Kamloops, BC for analysis.

Mr. Alexander Partsch, P.Eng., of P&E, a Qualified Person under the regulations of NI 43-101, conducted a site visit to the Shovelnose Gold Property on July 3, 2023. The purpose of the site visit was to review the site layout and engineering aspects of the Project. Mr. Partsch did not collect any independent drill core samples.

Drill core samples at Actlabs were analyzed for gold and silver by fire assay with gravimetric finish. Gold samples returning grades  $>3$  g/t Au were further analyzed by metallic screen method. Bulk density determinations were also undertaken on all of the samples. The Actlabs' Quality System is accredited to international quality standards through ISO/IEC 17025:2017 and ISO 9001:2015. The accreditation program includes ongoing audits, which verify the QA system and all applicable registered test methods.

The Authors consider that sample preparation, security and analytical procedures for the Shovelnose South Zone to be acceptable and the results are suitable for verification use in the current Mineral Resource Estimate reported in this Technical Report.

## **1.6 MINERAL PROCESSING AND METALLURGICAL TESTING**

Two preliminary metallurgical test programs were conducted in 2021 on samples of Shovelnose Gold Property – South Zone drill core at the ALS Metallurgical facility in Kamloops, British Columbia. Six composite samples weighing a total 97 kg were received at ALS in December 2020, crushed to 6 mesh, homogenized into test charges and assayed. ALS conducted a screened gold content investigation and concluded that “nugget” (coarse) gold was not observed. The gold content of the samples ranged from 2 g/t to 32 g/t. Silver ranged from 12 g/t to 136 g/t in the samples. Organic carbon (TOC) was measured to be very low ( $<0.05\%$ ), and sulphide sulphur content ranged from 0.28% to 0.67%. The very low organic carbon content eliminated any potential concern of “preg-robbing” of silver or gold in leaching. The content of base metals was measured to be low and of no economic interest. The concentration of elements of potential environmental concern in tailings and effluents, specifically As and Se, were also determined to be low.

A Bond ball mill work index test was completed on a composite from remaining fractions of four of the six samples. The BWi index was calculated to be 20 kWh/t, which is a relatively high value.

100 g samples of each composite, ground to a nominal size of 150 µm, were passed through a Nelson Concentrator. The Nelson concentrate was pan upgraded. Only 2% to 8% of the gold and between 1% and 3% of the silver reported to a 0.3% weight pan concentrate. These values are considered to be below those meriting the incorporation of a gravity circuit in a process flowsheet.

Single rougher flotation tests were performed on relatively coarsely ground (P<sub>80</sub> 150 µm) samples of each of the six composites. Gold and silver recoveries to the concentrates were 57% to 85% and 53% to 75%, respectively. The best gold results were achieved with the highest and lowest grade samples. For these two samples, 80% of the gold was recovered in 8% of the mass; for the other four samples, the gold recovery was 60% in 8% of the mass. The rougher flotation tests were repeated in follow-up work at a finer grind (~75 µm). The gold recoveries were somewhat better, averaging 76% at a similar mass pull compared to 67% in the first test program.

Bottle roll cyanide (“CN”) leach tests were conducted on all six samples under two conditions: 1) 150 µm grind, 1 g/L NaCN, O<sub>2</sub>, 72 hours; and 2) 75 µm grind, 1 g/L NaCN, O<sub>2</sub>, 48 hours. For the first tests, between 80% and 89% of the gold, and 78% to 87% of the silver were extracted. For the second set of tests, the gold extraction increased to 87% to 94% (average 89.4%) and silver approximately the same results. Cyanide consumption increased in the second set of tests to range between 1.5 kg/t and 2.1 kg/t, a moderate rate.

The combination of the production of a flotation concentrate and cyanide leaching of flotation tailings was investigated for all six samples. The sum of average recoveries for gold and silver were high at 94.7% and 96.1%, respectively, for the finer ground samples.

Earlier mineralogical studies by Panterra Geoservices in 2019 indicated that the gold content was exclusively in electrum that was closely associated by sulphides and sulpho-salts. Should these findings be confirmed in additional mineralogical studies, the production of a sulphide concentrate and the extraction of gold from this concentrate as well as from flotation tails may be a favourable processing approach.

## **1.7 UPDATED MINERAL RESOURCE ESTIMATE**

The Updated Mineral Resource Estimate presented in this Report has been prepared in accordance with the Canadian Securities Administrators’ National Instrument 43-101 and was estimated in conformity with the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) “Estimation of Mineral Resource and Mineral Reserves Best Practice Guidelines” (2019) and reported using the definitions set out in the 2014 CIM Definition Standards on Mineral Resources and Mineral Reserves. Mineral Resources that are not converted to Mineral Reserves do not have demonstrated economic viability. Confidence in the estimate of Inferred Mineral Resource is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Mineral Resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent Mineral Resource Estimates.

The Updated Mineral Resource Estimate in this Report is for underground mining purposes at an appropriate higher AuEq cut-off grade than the Initial Mineral Resource Estimate that was for open pit purposes. The Updated Mineral Resource Estimate incorporates 17 additional drill holes

completed since the previous Initial Mineral Resource Estimate on Westhaven's Shovelnose South Project in British Columbia.

The Updated Mineral Resource Estimate in this Report was prepared by the Authors using a drill hole database provided by Westhaven. The database compiled by the Authors for this Mineral Resource Estimate consisted of 162 surface drill holes totalling 61,726 m, of which 83 drill holes totalling 32,089 m intersected the Mineral Resource domain wireframes. The Mineral Resource database was validated by checking for inconsistencies in analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, and intervals or distances greater than the reported drill hole length, inappropriate collar locations and surveys, and missing interval and coordinate fields. Some minor errors were identified and corrected in the database. The Authors are of the opinion that the supplied database is suitable for Mineral Resource estimation.

A total of 20 mineralized veins were interpreted and constructed by Westhaven. The Authors reviewed the 3D models and considered the domain wireframes reasonable and suitable for Mineral Resource estimation. Vein models were developed for each vein using the drill core field logs and assays. The vein models represent the continuous gold and silver mineralization. All veins were constrained with a cut-off grade of 1.5 g/t AuEq (Gold Equivalent = Au g/t + Ag g/t / 77.9) to a minimum thickness of 2 m of drill core length. In some cases, samples less than 1.5 g/t AuEq were included to maintain the mineralized continuity and minimum width.

Topographic and overburden surfaces, lithology, dyke, and fault models were also provided by Westhaven. All mineralization veins were clipped by the overburden surface. The constraining domain wireframes were treated separately for the purpose of rock coding, statistical analysis, compositing limits, and definition of the extent of potentially economic mineralization.

In order to regularize the assay sampling intervals for grade interpolation, a 1.0 m compositing length was selected for the drill hole intervals that fell within the constraints of the Mineral Resource wireframes. Grade capping was performed on the 1.0 m composited Au and Ag values in the database within each constraining domain to mitigate possible bias resulting from erratic high-grade assay values in the database. A variography analysis was undertaken using the capped composites as a guide to determine a grade interpolation search distance and ellipse orientation strategy. Continuity ellipses based on the observed ranges were subsequently generated and utilized as the basis for estimation search ranges, distance weighting calculations and Mineral Resource classification criteria.

The Shovelnose block model was constructed using GEOVIA GEMS™ V6.8.4 modelling software with 5 m x 5 m x 5 m blocks. The block model consists of separate model attributes for estimated Au, Ag and AuEq grade, rock type (mineralization domains), volume percent, bulk density and classification. The Au and Ag grades were interpolated into the blocks using Inverse Distance weighting to the third power ("ID<sup>3</sup>"). Nearest Neighbour was run for validation purposes. Multiple passes were executed for the grade interpolation to progressively capture the sample points, to avoid over-smoothing, and preserve local grade variability.

In the opinion of the Authors, all the drilling, assaying and exploration work on the Shovelnose Gold Property – South Zone supports this Mineral Resource Estimate, which is based on spatial continuity of the mineralization within a potentially mineable shape, and are sufficient to indicate

a reasonable potential for economic extraction, thus qualifying it as a Mineral Resource under the 2014 CIM Definition Standards. The Mineral Resource was classified as Indicated and Inferred based on the geological interpretation, variogram performance and drill hole spacing.

The Mineral Resource Estimate for the Shovelnose Gold Property - South Zone was derived by applying AuEq cut-off grades to the block models and reporting the resulting tonnes and grades for potentially mineable areas. The cut-off grade of the underground Mineral Resource Estimate is 1.5 g/t AuEq.

The Updated Mineral Resource Estimate for the Shovelnose Gold Property - South Zone, with an effective date of July 18, 2023, is presented in Table 1.1.

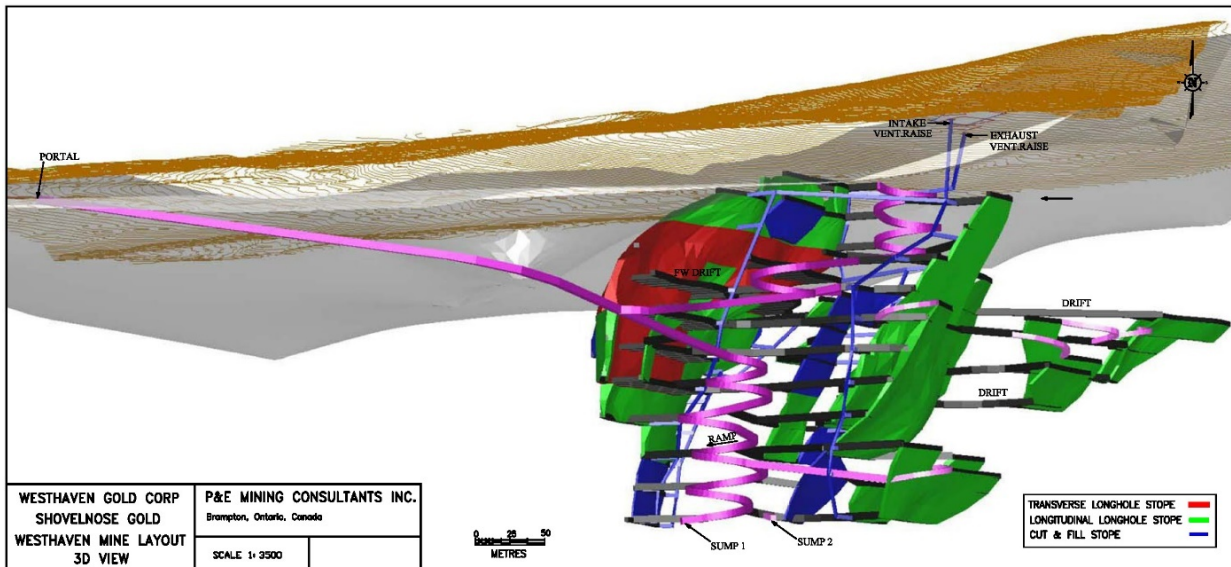
<b>Class-ification</b>	<b>Tonnage (kt)</b>	<b>Au (g/t)</b>	<b>Contained Au (koz)</b>	<b>Ag (g/t)</b>	<b>Contained Ag (koz)</b>	<b>AuEq (g/t)</b>	<b>Contained AuEq (koz)</b>
Indicated	2,983	6.38	612	34.1	3,273	6.81	654
Inferred	1,331	3.89	166	16.9	725	4.10	176

1. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
2. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
3. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could potentially be upgraded to an Indicated Mineral Resource with continued exploration.
4. The Mineral Resources were estimated in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
5. Grade estimation was undertaken with ID<sup>3</sup> interpolation.
6. Au and Ag process recovery used was 95%.
7. US\$ metal prices used were \$1,675/oz for Au and \$21.50/oz for Ag with a CAD\$:US\$ FX of 0.77.
8. CAD\$ operating costs used were \$77/t underground mining, \$18/t processing and \$5/t G&A.
9. AuEq g/t = Au g/t + (Ag g/t / 77.9).

## **1.8 MINING METHODS**

The Shovelnose South Zone will be mined by conventional mechanized trackless underground mining methods. 32% of stoping is planned to be mined by the transverse longhole mining method for stope widths >15 m. Approximately 62% of stoping will be by the longitudinal longhole mining method, on a retreat basis. The balance of stopes (6%) will be mined by the cut and fill mining method. The average vein widths to be mined are 16.2 m, 6.6 m and 3.0 m, respectively. A 3D schematic drawing of the mine design is presented in Figure 1.2.

**FIGURE 1.2 SHOVELNOSE UNDERGROUND MINE DESIGN**



The Zone will be ramp-accessed from surface at 15% gradient. Stopes will generally be 25 m high, floor to back, with both floor and back level access. The Project is planned to produce at a nominal production rate of 1,000 tpd, combined stope and development mineralization, 30,438 tonnes per month for approximately 10.5 years. LOM production will consist of 3,452,400 t mined at average grades of 5.37 g/t Au and 28.6 g/t Ag.

All mine and stope development will be carried out by a mining contractor. Company personnel will carry out all other mining activities including stope drilling and blasting, haulage of mineralized material, backfilling, administration, technical support and personnel, and underground and surface support equipment. Company manpower is estimated at 70 people. The longhole mining method for the Project is estimated to result in external dilution of 20% with a mining recovery (extraction) of 90%. For cut and fill, dilution is estimated at 12% with a mining recovery of 95%. 13.4 km of waste rock mine development and 13.2 km of mineralized development is planned over the LOM. Major mine equipment will include two-boom drill jumbos, top hammer stope drills, 3.2 m<sup>3</sup> load-haul-dump units and 20 t haul trucks.

A total of nine underground mining zones will be mined at Shovelnose. The workings will be serviced by ventilation, electrical and compressed air supply and dewatering systems. Fresh air will be provided through a fresh air raise (“FAR”) and the main ramp, while return air will exhaust upwards a return air raise (“RAR”). The FAR will be equipped with a direct-fired propane mine air heater to heat underground fresh air mine during the winter months. Pump stations will use both electric submersible and centrifugal pumps to move water to the surface through pump lines. High-voltage electrical power will be provided to the ramp portal, then fed at lower voltages down the ramp and/or boreholes to the underground workings.

## 1.9 RECOVERY METHODS

ROM material will be blended by a front-end loader at surface according to production grade planning and fed to a surface-installed jaw crusher. The crushed material will be delivered to a



covered stockpile of approximately 1,500 t capacity. The mill feed will be drawn from this stockpile by at least three feeders. With a potential primary grind size  $P_{80}$  of 150  $\mu\text{m}$ , a SAG size of approximately 7.5 m diameter by 4 m long and a ball mill of 5 m diameter by 9 m long would be adequate. The ball mill will be in a closed circuit with two banks of cyclones in a combined array (one operating, one standby) with cyclone overflow sent to flotation following automatic two-stage slurry sampling for mineral and metal content.

A flotation concentrate is proposed to be made to accumulate a significant proportion of the gold and silver that is associated with sulphides. The flotation concentrate would be thickened in a high-rate thickener and finely ground in an attrition mill such as a tower mill. The ground flotation concentrate would be subject to “intense” leaching at high sodium cyanide concentration with strong oxidation conditions. The pregnant leach solution would be recovered by filtration by plate-and-frame filters (two in parallel). The filter cake would be washed twice with cyanide-containing barren solution. The diluted (due to filtration washing) pregnant leach solution would be sent to a Merrill Crowe circuit. Sulphide flotation tailings containing approximately 25% of the gold and silver present in process feed, with a significant residual gold content, approximately 2.5 g/t Au, would be subject to a standard cyanide leaching approach. Oxidation would be provided by air injection into the first leach vessels, or if confirmed by test results, by oxygen injection. A series of stirred leach vessels would be followed by multi-stage counter-current decantation, and then the pregnant solution would be sent to the Merrill Crowe circuit. A precious metal precipitate would be recovered by pressure filtration, and smelted to produce a slag and a metal (doré) product.

A significant portion of the 1,000 tpd leached tailings will be used as mine paste backfill. The balance will be dry-stacked and placed in a designed surface storage facility. For both, a high degree of cyanide destruction will be needed for mine worker safety and to meet environmental criteria.

## **1.10 SITE INFRASTRUCTURE**

The Project is located 30 km southwest of Merritt and benefits from excellent access to regional resources and infrastructure in the region, due to the proximity to Coquihalla Highway 5. The Project is a greenfield site and has no direct mining related infrastructure in place. Infrastructure currently in place consists of a well-developed network of forestry access roads of variable conditions, and a powerline corridor that leads to a radio/cellular tower installation on Shovelnose Mountain. This infrastructure is not owned by the Company.

Major infrastructure for the Project will include an underground mine, a process plant and laboratory with main substation and electrical power distribution, a tailings management facility, and a waste rock storage facility.

Infrastructure to be installed by the Company includes a main access road and gatehouse, an administration building for senior management and staff, a mechanical parts warehouse, a process plant supplies warehouse, a maintenance building with overhead crane for Company mining equipment, personnel change room facility, water and sewage treatment plants, and a diesel fuel tank farm and fueling station. Buildings will be supplied by well water for showers, toilets, etc. whereas drinking water will be bottled.

Items to be installed by the contractors will include a maintenance building with overhead crane for contract underground mining equipment, a bulk explosives storage facility and magazine, contractor offices, and a contractor supplies warehouse.

### **1.11 MARKET STUDIES AND CONTRACTS**

The Project will produce gold and silver doré bars which are readily saleable. The Authors used the approximate 24-month (2-year) average monthly trailing metal prices as of June 30, 2023, of US\$1,800/oz Au and US\$22/oz Ag for this PEA. The USD/CAD exchange rate was based on US\$0.76 = CAD\$1.00.

No contracts were entered into at the effective date of this Report for mining, facility operations, refining, transportation, handling, sales and hedging, and forward sales contracts or arrangements pertaining to the Shovelnose Project. It is envisaged that Westhaven would sell any future production through contracts with a refiner, or on the spot market, as applicable. It is expected that when any such contracts are negotiated, they would be within industry norms for projects in similar settings in Canada.

### **1.12 ENVIRONMENTAL STUDIES, PERMITS AND SOCIAL OR COMMUNITY IMPACTS**

The Shovelnose Gold Property is located on provincially administered Crown Land and is within the traditional territory and ancestral lands of the Niaka’pamux First Nation. Westhaven has engaged in preliminary consultations and discussions with the Niaka’pamux Nation Tribal Council, individual First Nation communities, and other stakeholders, since 2017. The Property has been intermittently explored since the Fraser River and Caribou gold rushes. Extensive logging activities, ranching, recreational use and forest fires have subsequently modified the terrain.

Baseline environmental studies have been initiated by Westhaven. These include surface and groundwater studies, wildlife and species at risk identification, vegetation inventory and vitality, and climate history. The latter, climate and the effects of anticipated climate changes, will be expected to receive special attention, partially due to the climate extremes encountered in southern BC in the past few years. Ongoing archeological studies of the Shovelnose Property suggest the area has low potential for archeological, historical, or cultural features, primarily due to a lack of physical attributes, and also because the area has been disturbed by forestry access roads, previously logged cut blocks, and ranching pasture lands throughout. No archeological or cultural sites have been identified to date, however, future detailed studies will focus on areas that could be affected by a potential mining project with waste management and project infrastructure. The protection of water resources, the long-term storage of mine waste rock and the protection of the physical environment could be expected to be a major focus of an environmental assessment, of permitting, and in aspects related to social acceptance.

The Project could mine and process 1,000 tpd of mineralized material; a smaller amount of waste rock could be produced and stored on surface. Information will be gained by chemical tests on a wide variety of drill core to determine the potential for acid rock drainage and/or metal leaching. Isolation and interim treatment of drainage from mine openings, as well as seepage from waste rock and tailings storage facilities will be important aspects of a Project design.

Subject to additional metallurgical process investigations, the mineralized material will either be treated in a mineral process facility by (i) grinding and leaching by well-proven cyanide leach technology, (ii) grinding and froth flotation to produce a marketable concentrate and leaching of the flotation tails, or (iii) finely grind and leaching of a flotation concentrate as well as leaching the flotation tails. Gold and silver will be recovered from pregnant leach solution as a doré in brick form on site. Option (iii) is expected to be the selected processing strategy.

Treated mine water is expected to partially provide the process plant's water requirements. Tailings and process plant effluent would be treated to remove all residual cyanide and a small portion of the tailings are expected to be "dry stacked" at an acceptable engineered location. The larger portion of the tailings will be used as mine paste backfill.

Permitting, environmental assessment and approvals for the Shovelnose Project will involve considerable effort. The provincial permit, approval and lease requirements for developing, operating and closing a major mine in British Columbia are extensive. The BC Major Mines Office ("MMO") coordinates the permitting process working with BC ministries and agencies including: Ministry of Energy, Mines and Low Carbon Innovation; Ministry of Environment and Climate Change Strategy; and Ministry of Forests, Lands, Natural Resource Operations and Rural Development. The MMO also acts a contact for key permits and for consultation and collaboration with Indigenous Nations. Example permits and licenses (of many) are: mining lease; effluent discharge permits; taking of water permits; power line license; road construction permits; and construction and operation of a worker's camp and accommodation permits. Federal authorizations include: Fisheries Act provisions (potentially including a Fisheries Habitat Compensation Plan); metal mine effluent specifications for tailings and waste rock facilities; and permits to manufacture and use explosives.

The 1992 Canadian Environmental Assessment Act ("CEAA") was updated to CEAA 2012 which has recently been updated under Federal Legislation C-69. The updated act includes the earlier definition of what aspects may "trigger" a federal Environmental Assessment ("EA"). Under CEAA 2012 and C-69, an EA focuses on issues within federal jurisdiction including: fish, fish habitat and other aquatic species; migratory birds; federal lands and effects of crossing interprovincial boundaries; effects on Aboriginal peoples such as their use of traditional lands and resources; and a physical activity that is designated by the Federal Minister of Environment that can cause adverse environmental effects or result in public concerns. One or more of these issues can be expected to be a "trigger" and result in a requirement of an EA under federal legislation for the Shovelnose Project. The EA could be conducted by responsible Federal and/or Provincial Agencies, or by an expert Review Panel appointed by the respective Ministers of Environment.

The Shovelnose Gold Project will be designed for closure. At end of operations, all structures will be removed, and any underground mine openings would be permanently sealed off as tightly as possible. The mined-out underground openings will be allowed to flood. Subject to hydrological assessments, in the long term, no mine water treatment could be anticipated.

## 1.14 CAPITAL COSTS

All capital cost estimates are shown in Canadian dollars as at Q2 2023, unless otherwise stipulated, and are not adjusted for inflation.

Capital cost estimates include underground mine development, the process plant construction and commissioning, the purchase of underground mining equipment, underground infrastructure, surface infrastructure, and closure bond/salvage credit, including a 20% contingency allowance. Initial capital costs are estimated at \$142.1M. Sustaining capital costs during the production years are estimated at \$104.9M. The LOM total capital cost of the Shovelnose Gold Project is estimated at \$247.0M. A breakdown of these cost estimates is provided in Table 1.2.

**TABLE 1.2**  
**LOM CAPITAL COSTS (\$M)**

<b>Item</b>	<b>Yr -2</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Mine Devel in Waste Rock		18.2	21.6	11.9	2.1	2.5	3.8	4.0	1.4	5.6	2.6		<b>73.8</b>
Process Plant	44.6	22.3		3.3		3.3		3.3		3.3			<b>80.2</b>
Mining Equipment		8.0	12.2	1.9	0.2	1.6	1.7	7.6	1.5	4.6		1.4	<b>40.7</b>
U/G Infrastructure		0.4	2.2	1.1	1.3	0.2	1.3	0.8	1.3	0.2	0.2	0.2	<b>9.1</b>
Surface Infrastructure		45.1	0.2	2.3		0.4	1.6	3.5		0.6			<b>53.6</b>
Closure & Salvage		3.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-17.1	<b>-10.5</b>
<b>Total CAPEX (\$M)</b>	<b>44.6</b>	<b>97.5</b>	<b>36.6</b>	<b>20.9</b>	<b>4.0</b>	<b>8.4</b>	<b>8.7</b>	<b>19.6</b>	<b>4.5</b>	<b>14.6</b>	<b>3.2</b>	<b>-15.6</b>	<b>247.0</b>

*Notes: Table 1.2 includes a 20% contingency; Yr = year*

## 1.15 OPERATING COSTS

Most of the operating costs have been estimated from contractor quotes and first principles, with a minor amount of factoring and estimates from the Author’s experience at other similar mines. The operating cost estimates (“OPEX”) include the cost of supervisory, operating and maintenance labour, operating consumables, materials and supplies, haulage and processing. A 10% contingency has been added to all OPEX costs. The operating cost is estimated to average \$132.15/t processed over the LOM. A summary of the average operating cost estimates for the Shovelnose Project is provided in Table 1.3.

<b>Description</b>	<b>Total (\$/t)</b>
Stope Development in Mineralization	17.15
Longitudinal LH Stoping	6.17
Transverse LH Stoping	3.19
Cut and Fill Stoping	1.12
Mine G&A	15.27
Paste Backfill	8.20
Process Plant	39.08
U/G Mineralization Haulage	20.71
Stockpile Re-handling	2.75
Administration G&A	18.53
<b>Total OPEX/tonne (with Contingency)<sup>1</sup></b>	<b>132.15</b>

*Note: 1 Total may not sum due to rounding. Table 1.3 includes a 10% contingency.*

Diesel fuel has been based on a cost of \$1.10/L and electricity has been based on connection to grid power at \$0.085/kWhr.

A 2% NSR royalty on the Shovelnose Gold Property is currently held by Osisko Gold Royalties Ltd. Westhaven has the option to buy down the royalty to 1% NSR for \$0.5M. There is also a 2% NSR royalty held across all of Westhaven’s properties, including Shovelnose, by Franco-Nevada Corporation. Westhaven has the option to buy down the royalty to 1.5% NSR for US\$3M. It is assumed that the royalties will be bought down to 1% + 1.5% = 2.5% at the commencement of production. The estimated cost to buy down the royalties is \$4.45M. Total costs associated with the two NSR royalties over the LOM are estimated at \$37.9M including the \$4.45M buy down costs.

Cash costs over the LOM, including royalties, are estimated to average \$871/oz AuEq (US\$662/oz AuEq). All-In Sustaining Costs (“AISC”) over the LOM are estimated to average \$1,056/oz AuEq (US\$803/oz AuEq) and include closure costs.

## 1.16 FINANCIAL EVALUATION

**Cautionary Statement** – The reader is advised that the PEA summarized in this Report is intended to provide only an initial, high-level review of the Project potential and design options. The PEA mine plan and economic model include numerous assumptions and the use of Inferred Mineral Resources. Inferred Mineral Resources are considered to be too speculative to be used in an economic analysis except as allowed by NI 43-101 in PEA studies. There is no guarantee the Project economics described herein will be achieved. This Report is considered by the Authors to meet the requirements of a PEA as defined in Canadian NI 43-101 Standards of Disclosure for Mineral Projects. Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be classified as Mineral Reserves, and there is no certainty that the PEA will be realized. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that Westhaven will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise for the Project to be placed into production.

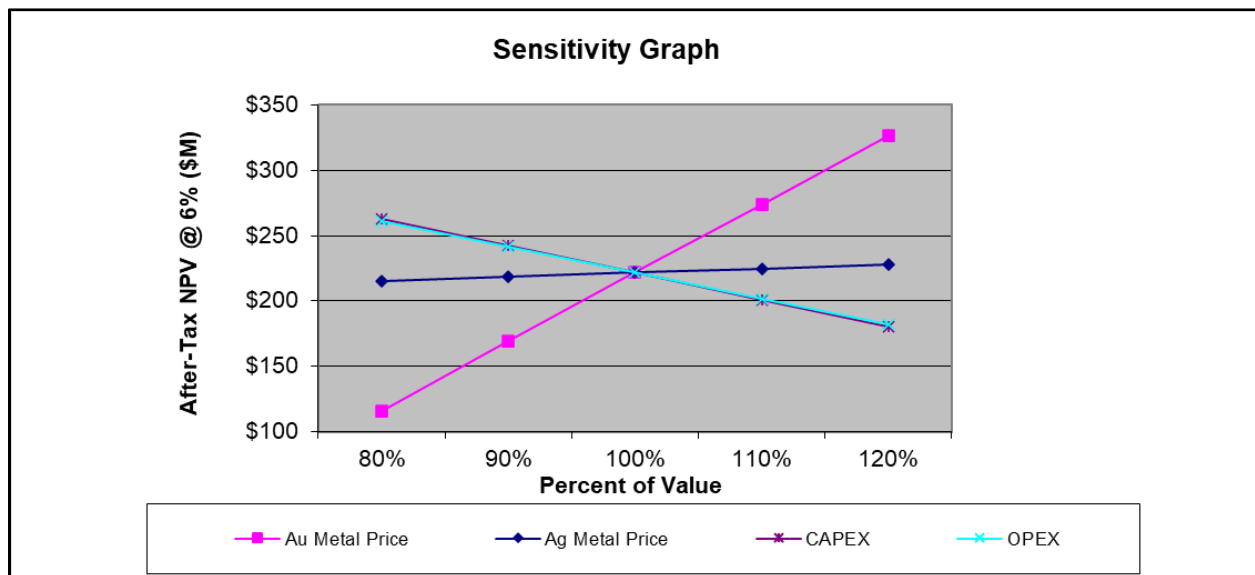
Table 1.4 presents a summary of the key economic assumptions and results. Under baseline scenarios (6% discount rate, US\$1,800/oz Au, US\$22/oz Ag, OPEX and CAPEX as set out above), the overall after-tax NPV of the Project is estimated at \$222M (\$359M pre-tax), with an after-tax IRR of 32.3% (41.4% pre-tax). This results in an after-tax payback period of approximately 2.6 years.

<b>TABLE 1.4</b>	
<b>KEY ECONOMIC PARAMETERS</b>	
<b>Parameter</b>	<b>Amount</b>
Production mine life (years)	9.5
Production rate (tpd)	1,000
Production rate (ktpa)	365
Total production (kt)	3,452
Gold grade (g/t)	5.37
Silver grade (g/t)	28.6
Gold process recovery (%)	91.5
Silver process recovery (%)	92.9
Gold smelting/refining (%)	98
Silver smelting/refining (%)	92
Gold payable (koz)	534
Silver payable (koz)	2,715
Gold Equivalent payable (koz)	567
Net Revenue (\$M)	1,343.7
Initial Capital Cost (\$M)	142.1
Sustaining Capital Costs (\$M)	104.9
Operating Cost (\$/t processed)	132.15
Operating Cost (\$M)	456.3

TABLE 1.4 KEY ECONOMIC PARAMETERS	
Parameter	Amount
Royalties (\$M)	37.9
Operating Cash Cost (US\$/oz AuEq)	662
All-in Sustaining Cost (US\$/oz AuEq)	803
Pre-Tax Cash Flow (\$M)	602.5
Pre-Tax NPV (6% discount) (\$M)	358.8
Pre-Tax IRR (%)	41.4
Income Taxes (\$M)	216.6
After-Tax Cash Flow (\$M)	385.9
After-Tax NPV (6% discount) (\$M)	221.6
After-Tax IRR (%)	32.3
After-Tax Payback Period (years)	2.6

After-tax NPV sensitivity to  $\pm 20\%$  changes in metal prices, OPEX and CAPEX is presented in Figure 1.3.

**FIGURE 1.3 AFTER-TAX NPV SENSITIVITY GRAPH**



The Project is most sensitive to items directly affecting the gold price, followed by CAPEX and OPEX. The silver price has the least overall impact on the Project after-tax NPV.

It is the opinion of the Authors that the Shovelnose Gold Project has potential to be financially viable. Therefore, it is recommended to advance the Project to the next phase of study.



## 1.17 ADJACENT PROPERTIES

The Elk Gold Project lies approximately 20 km east of the Shovelnose Property. Gold Mountain Mining Corp. (“Gold Mountain”) has a 100% interest subject to a 2% NSR royalty, with an additional 1% NSR royalty payable on the Agur claim option block. Gold mineralization occurs within quartz-sulphide veins and stringers most commonly within phyllic and silica altered Osprey Lake intrusive rocks, and rarely within adjacent phyllic and silica altered Nicola volcanic rocks. Pyrite is the most common sulphide within the quartz veins, ranging from 5% to 80% with higher percentages commonly associated with chalcopyrite and tetrahedrite. A Mineral Resource Estimate issued in December 2021 reported 4.4 Mt of Measured and Indicated Mineral Resource at 5.8 g/t AuEq and 1.5 Mt of Inferred Mineral Resource at 5.4 g/t AuEq.

In February, 2022, Gold Mountain delivered its first gold mineralized mined material shipment to New Gold Inc. Exploration in 2022 continued to intersect high-grade gold mineralization. In the year ending January 31, 2023, production at Elk Mountain totalled 5,644 oz gold from 44,809 tonnes grading 4.07 g/t Au.

The New Afton Project (the “New Afton Property”, or “New Afton”) is in south-central British Columbia, 10 km west of Kamloops. The New Afton Property consists of 61 mineral claims covering 12,450.4 ha, controlled by New Gold and its subsidiaries (New Gold, 2021). New Afton comprises part of a larger copper-gold porphyry district situated within the prolific Quesnel Trough Island-Arc Terrane, host to many of British Columbia’s major copper and gold districts. Country rocks consist of intermediate to mafic volcanic rocks of the Triassic Nicola Formation. The bulk of the New Afton mineralization occurs as a tabular, nearly vertical, southwest-plunging body measuring at least 1.4 km along strike by approximately 100 m wide, with a down-plunge extent of over 1.5 km. The deposit remains open to the west and at depth. Mineralization is characterized by copper sulphide veinlets and disseminations localized at brecciated margins between altered porphyry intrusives and Nicola volcanic country rocks. Copper occurs primarily as chalcopyrite and minor bornite, with secondary chalcocite and native copper present in the upper, nearer-surface parts of the deposit. Gold occurs as sub-micrometre size grains associated with copper sulphides.

The process plant at New Afton has been in operation since 2012. A process plant expansion was completed in 2015 to add a tertiary stage of grinding and additional flotation cleaning capacity. This allowed throughput to increase to a peak average of 16,420 tpd in 2017. Combined open pit and underground mining production in the year 2022 was 41,551 oz Au and 31.1 Mlb Cu. Mineral Reserves at December 31, 2022, reported by New Gold (2022) were 37.0 Mt of Proven and Probable at 0.68 g/t Au, 1.7 g/t Ag and 0.74% Cu. Measured and Indicated Mineral Resources were 66.5 Mt at 0.57 g/t Au, 2.1 g/t Ag and 0.71% Cu, and Inferred Mineral Resources were 16.1 Mt at 0.38 g/t Au, 1.2 g/t Ag and 0.38% Cu.

## 1.18 RISKS AND OPPORTUNITIES

Risks and opportunities have been identified for the Project. The most significant potential risk for impact on the Project is that the mine plan consists of approximately 31% Inferred Mineral Resources. Infill drilling is required to potentially convert Inferred to Indicated Mineral Resources and increase the confidence in the Mineral Resource Estimate. Further metallurgical testing is required to optimize metal recovery, process plant design and Project revenue.

Opportunities consist of a Mineral Resource that is open along strike and down dip, and the Property contains at least nine other mineralized zones that remain relatively unexplored. There is an opportunity for further zone definition with additional drilling and surface exploration.

## 1.19 CONCLUSIONS

Westhaven's Shovelnose Property is a gold and silver property composed of 32 contiguous mineral claims totalling 17,625 ha within the Nicola and Similkameen Mining Divisions of British Columbia (Canada). The mineral claims are currently 100% owned by Westhaven, subject to a combined 4.0% net smelter return royalty.

Structurally controlled low-sulphidation epithermal gold-silver mineralization has been found in nine zones on the Property. Seven of those zones are structurally linked along a 4-km northerly trend that is open to the north and south. Soil geochemistry, magnetic surveys and, to a smaller extent, IP and DC Resistivity surveys have been instrumental in defining structural zones and linear trends along which exploration has focused and the mineralized zones discovered. Westhaven's data are of good quality and satisfactory for use in the Mineral Resource Estimate reported in this Technical Report. Preliminary metallurgical testing suggests the mineralization appears to be non-refractory and amenable to recovery by a standard industry process flowsheet.

The Property benefits significantly from close proximity to the City of Merritt, the nearest full-service community. The main industries there are forestry, ranching and tourism/hospitality. Road access to and weather conditions at the Shovelnose Gold Property – South Zone allow for exploration and development work throughout most of the year.

At a cut-off of 1.5 g/t AuEq, the Mineral Resource Estimate consists of: 2,983 kt grading 6.38 g/t Au and 34.1 g/t Ag, or 6.81 g/t AuEq in the Indicated classification; and 1,331 kt grading 3.89 g/t Au and 16.9 g/t Ag, or 4.10 g/t AuEq in the Inferred classification. Contained metal contents are 612 koz Au and 3,273 koz Ag, or 654 koz AuEq in the Indicated classification and 166 koz Au and 725 koz Ag, or 176 koz AuEq in the Inferred classification.

The Shovelnose South Zone Project is planned to be a conventional mechanized trackless underground mining operation with a contractor responsible for all mine and stope development activities. Company personnel will carry out all other mining activities including stope drilling and blasting, haulage of mineralized material, backfilling, administration, technical support, and underground and surface support equipment. 32% of stoping is planned to be mined by the transverse longhole mining method for stope widths >15 m. Approximately 62% of stoping will be by the longitudinal longhole mining method, on a retreat basis. The balance of stopes (6%) will be mined by the cut and fill mining method.

One year of pre-production development mining is planned, followed by 10.5 years of production to deliver 1,000 tpd to the process plant, equivalent to 3,452,400 t mined at average grades of 5.37 g/t Au and 28.6 g/t Ag over the LOM.

The process plant will be constructed in two years of pre-production and is comprised of crushing, grinding (SAG, ball mill), fine grind of a flotation concentrate subject to "intense" leaching, and

Merrill Crowe precipitation. Flotation tailings would be subject to cyanide tank leaching and sent to the Merrill Crowe circuit. A precious metal precipitate would be recovered by pressure filtration and smelted to produce a slag and a metal (doré) product. A significant portion of the 1,000 tpd leached tailings will be used as mine paste backfill. The balance will be dry-stacked and placed in a designed facility. The process plant will contain a laboratory. Water supply to the process plant will be provided by a nearby surface water source and high voltage grid power will be provided by the local utility.

Employees and contractors will commute from nearby communities. The Company will construct infrastructure for staff offices, warehousing, change rooms, equipment maintenance, diesel fuel tankage and fueling, and water and sewage treatment. The mining contractor will establish infrastructure for offices, warehousing, maintenance and explosives storage and magazine.

The Shovelnose Gold Property is located on provincially administered Crown Land and is within the traditional territory and ancestral lands of the Niaka'pamux First Nation. Westhaven has engaged in preliminary consultations and discussions with the Niaka'pamux Nation Tribal Council and individual First Nation communities since 2017. Environmental baseline studies have been initiated by Westhaven. An extensive list of Provincial and Federal permits, environmental assessment and approvals will be required before mining can commence.

Underground mining costs have been estimated to average \$74.54/t processed, including stockpile rehandling, over the production years. Process costs (\$39.08/t processed, including tailings) and site G&A (\$18.53/t processed) contribute to a total LOM average cost estimated at \$132.15/t processed and include a 10% contingency. Total costs associated with the two NSR royalties over the LOM are estimated at \$37.9M including \$4.45M for buy down costs. The average operating cash cost over the production years, including royalties, is estimated at \$871/oz AuEq (US\$662/oz AuEq), and the average all-in sustaining cost is estimated at \$1,056/oz AuEq (US\$803/oz AuEq) and include closure costs.

Initial capital costs to construct and commission the process plant, develop underground mine workings to enable production, and install surface infrastructure are estimated at \$142M and include a 20% contingency. Sustaining capital costs during the production years are estimated at \$105M. The LOM total capital cost of the Shovelnose Gold Project is estimated at \$247.0M.

Under baseline scenarios (6% discount rate, US\$1,800/oz Au, US\$22/oz Ag, OPEX and CAPEX as set out above), the overall after-tax NPV of the Project is estimated at \$222M (\$359M pre-tax), with an after-tax IRR of 32.3% (41.4% pre-tax). This results in a post-tax payback period of approximately 2.6 years. Federal and provincial income tax is levied at applicable rates on net taxable income. Project economics are most sensitive to the gold price. Project economics are more sensitive to overall capital costs than operating costs. The silver price has the least overall impact on the Project after-tax NPV.

It is the opinion of the Authors that the Shovelnose Gold Project has potential to be financially viable. Therefore, it is recommended to advance the Project to the next phase of study.

## 1.20 RECOMMENDATIONS

Additional exploration and project development study expenditures are warranted to advance the Shovelnose Project towards a Pre-Feasibility Study (“PFS”). For exploration, the Authors recommend step-out and exploration drilling, in-fill drilling, geological, geophysical and geochemical studies. Recommendations for project development work include metallurgical testwork, environmental baseline studies, geotechnical and hydrogeological studies, and stakeholder consultation.

Recommendations to advance the Shovelnose Project are made in two parts. The first is in support of the discovery and delineation of new mineralized zones, and definition drilling on the South Zone to convert Inferred Mineral Resources within the underground mine design to Indicated Mineral Resources. The Authors also recommend the continuation of geological, geophysical and geochemical studies to assist in ongoing exploration activities.

The second set of recommendations is to facilitate a PFS and includes metallurgical testing and continued environmental baseline studies, with geotechnical and hydrology drilling and studies.

The Authors consider that the recommended work program would cost approximately \$10.6M (Table 1.5). The work program should be completed in two phases. Phase 1 is estimated to cost \$7.9M and is for exploration and in-fill drilling, leading to an Updated Mineral Resource Estimate. The Phase 2 program is estimated at \$2.7M and would be contingent on the results of Phase 1. Phase 2 is for engineering work leading to completion of a PFS.

**TABLE 1.5  
SHOVELNOSE RECOMMENDED WORK PROGRAM BUDGET**

<b>Program</b>	<b>Description</b>	<b>Budget (\$)</b>
<b>Exploration</b>		
Step-out and Exploration Drilling	10,000 m at \$275/m (includes staff and assays)	2,750,000
Surface Exploration Programs	mineral prospecting, mapping, sampling, etc.	150,000
Specialized Geochemical Studies	multi-element interpretive and modelling work	100,000
In-fill Drilling	13,400 m at \$275/m	3,685,000
Updated Mineral Resource Estimate		200,000
Contingency (15%)		1,033,000
<b>Subtotal Phase 1</b>		<b>7,918,000</b>
<b>PFS Work</b>		
Metallurgical Testwork		200,000
Environmental Studies		250,000
Geotechnical and Hydrogeological Studies		600,000
Stakeholder Consultation		100,000
Pre-Feasibility Study		1,200,000
Contingency (15%)		352,000
<b>Subtotal Phase 2</b>		<b>2,702,000</b>
<b>Total</b>		<b>10,620,000</b>

## 2.0 INTRODUCTION AND TERMS OF REFERENCE

### 2.1 TERMS OF REFERENCE

This National Instrument (“NI”) 43-101 Technical Report has been prepared by P&E Mining Consultants Inc. (“P&E”) to provide an Updated Mineral Resource Estimate and Preliminary Economic Assessment (“PEA”) on the gold and silver mineralization contained in the South Zone of the Shovelnose Gold Deposit, British Columbia, Canada (the “Project” or the “Property”). The Property is 100% owned by Westhaven Gold Corp. (“Westhaven” or “the Company”) and is located approximately 30 km south of the City of Merritt. The Property hosts a low sulphidation epithermal gold-silver deposit.

Westhaven is a public company trading on the TSX Venture Exchange (“TSX-V”) with the trading symbol WHN. Westhaven’s head office is located at 1056-409 Granville Street, Vancouver, British Columbia, Canada, V6C 1T2.

This Technical Report has an effective date of July 18, 2023. There has been no material change to the Shovelnose Gold Property between the effective date and the signature date of this Technical Report.

This Report provides an Updated Mineral Resource Estimate for the mineralization contained in the South Zone of the Shovelnose Gold Deposit. Other gold zones on the Property are not included in this Mineral Resource Estimate. An Initial Mineral Resource Estimate for the Shovelnose Gold Property – South Zone was prepared by P&E with an effective date of January 1, 2022, and was built using an open pit constrained cut-off grade of 0.35 g/t AuEq. Since that time there has been additional drilling on the Property, additional mining potential evaluation, and P&E now considers the mineralization at the South Zone to be potentially amenable to underground mining methods. The Updated Mineral Resource Estimate has been built using a 1.50 g/t AuEq cut-off grade.

The Property consists of 32 mineral claims covering approximately 17,625 ha. The Updated Mineral Resource Estimate reported herein is based on up-to-date drilling results and appropriate metal pricing, and is fully conformable to the “Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) Standards on Mineral Resources and Reserves – Definitions and Guidelines” (2014), as referred to in National Instrument (“NI”) 43-101, Form 43-101F, Standards of Disclosure for Mineral Projects and CIM Best Practices Guidelines (2019).

Westhaven accepts that the qualifications, expertise, experience, competence and professional reputation of P&E’s Principals and Associate Geologists and Engineers are appropriate and relevant for the preparation of this Report. The Company also accepts that P&E’s Principals and Associates are members of professional bodies that are appropriate and relevant for the preparation of this Technical Report. P&E understands that this Report will support the public disclosure requirements of Westhaven, will be used for internal decision-making purposes, and will be filed on SEDAR as required under NI 43-101 disclosure regulations and TSX regulations. The Report may also be used to support public equity or private placement financings.

This NI 43-101 Technical Report and PEA will be referred to as the “Report”. Authors and co-Authors of Report sections will be referred to as the “Authors”.

## 2.2 SITE VISIT

Mr. Brian Ray, P.Geo., of P&E, a Qualified Person under the regulations of NI 43-101, conducted a site visit to the Shovelnose Gold Property on September 27, 2021. The purpose of the site visit was to review drill core, check site access, and verify drill core processing and storage facilities. As part of the site visit, confirmation samples from selected drill core intervals were taken and couriered to Activation Laboratories Ltd. in Kamloops, B.C. Mr. Ray was accompanied on the Property by Mr. Robin Hopkins, a Technical Advisor to Westhaven.

Mr. Alexander Partsch, P.Eng., of P&E, a Qualified Person under the regulations of NI 43-101, conducted a site visit to the Shovelnose Gold Property on July 3, 2023. The purpose of the site visit was to review the site layout, Property access and engineering aspects of the Project.

## 2.3 SOURCES OF INFORMATION

The data used in this Report were provided to the Authors by Westhaven. The Property was the subject of an NI 43-101 Technical Report (Laird, 2021) titled “National Instrument 43-101 Technical Report on the Spences Bridge Group of Properties (“SBG Group”), Nicola and Kamloops Mining Divisions, British Columbia” dated February 25, 2021 (effective date of February 7, 2021), and is filed on SEDAR under Westhaven’s profile. Parts of Sections 4 to 10 in this Report have been summarized and updated from Laird (2021). P&E prepared an NI 43-101 Technical Report on the Property (P&E, 2022) titled “Technical Report and Initial Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia” dated January 19, 2022 (effective date of January 1, 2022) and is filed on SEDAR under Westhaven’s profile.

In addition to the site visits, the Authors held numerous discussions with technical personnel from the Company regarding all pertinent aspects of the Project and carried out a review of available literature and documented results concerning the Property. The reader is referred to those data sources, which are listed in Section 27 (the References section) of this Report, for further detail.

Table 2.1 presents the Authors and Co-Authors of each section of this Report, who in acting as independent Qualified Persons as defined by NI 43-101, take responsibility for those sections of this Report as outlined in the “Certificate of Author” included in Section 28 of this Report.

<b>TABLE 2.1 QUALIFIED PERSONS RESPONSIBLE FOR THIS REPORT</b>		
<b>Qualified Person</b>	<b>Contracted By</b>	<b>Sections of Technical Report</b>
Andrew Bradfield, P.Eng.	P&E Mining Consultants Inc.	2, 3, 24 and Co-Author 1, 25, 26, 27
Jarita Barry, P.Geo.	P&E Mining Consultants Inc.	11 and Co-Author 1, 12, 25, 26, 27
D. Grant Feasby, P.Eng.	P&E Mining Consultants Inc.	13, 17, 20 and Co-Author 1, 25, 26, 27

**TABLE 2.1**  
**QUALIFIED PERSONS RESPONSIBLE FOR THIS REPORT**

<b>Qualified Person</b>	<b>Contracted By</b>	<b>Sections of Technical Report</b>
Alexander Partsch, P.Eng.	P&E Mining Consultants Inc.	18 and Co-Author 1, 5, 25, 26, 27
James L. Pearson, P.Eng.	P&E Mining Consultants Inc.	15, 16, 19, 21, 22 and Co-Author 1, 25, 26, 27
Eugene Puritch, P.Eng.	P&E Mining Consultants Inc.	Co-Author 1, 14, 25, 26, 27
Brian Ray, P.Geo.	P&E Mining Consultants Inc.	Co-Author 1, 12, 25, 26, 27
William Stone, Ph.D., P.Geo.	P&E Mining Consultants Inc.	4, 6 to 10, 23, and Co-Author 1, 5, 25, 26, 27
Yungang Wu, P.Geo.	P&E Mining Consultants Inc.	Co-Author 1, 14, 25, 26, 27
Antoine Yassa, P.Geo.	P&E Mining Consultants Inc.	Co-Author 1, 14, 25, 26, 27

## 2.4 UNITS AND CURRENCY

In this Report, all currency amounts are stated in Canadian dollars (“\$”) unless otherwise stated. At the time of this Report, the 24-month trailing average exchange rate between the US dollar and the Canadian dollar is 1 US\$ = 1.32 CAD\$ or 1 CAD\$ = 0.76 US\$.

Commodity prices are typically expressed in US dollars (“US\$”) and will be noted where appropriate. Quantities are generally stated in Système International d’Unités (“SI”) metric units including metric tons (“tonnes”, “t”) and kilograms (“kg”) for weight, kilometres (“km”) or metres (“m”) for distance, hectares (“ha”) for area, grams (“g”) and grams per tonne (“g/t”) for metal grades. Gold and silver grades may also be reported in parts per million (“ppm”) or parts per billion (“ppb”). Quantities of gold and silver may also be reported in troy ounces (“oz”). The terms and their abbreviations used in this Report are listed in Table 2.2. Units of measurement and their abbreviations are listed in Table 2.3. Grid coordinates for maps are given in the UTM NAD 83 Zone 10N or as latitude and longitude.

**TABLE 2.2**  
**TERMINOLOGY AND ABBREVIATIONS**

<b>Abbreviation</b>	<b>Meaning</b>
\$	dollar(s)
°	degree(s)
°C	degrees Celsius
°F	degrees Fahrenheit
<	less than
>	greater than
%	percent
σ	standard deviation
µm	micron(s) or micrometre(s)
3-D	three-dimensional
AAS	atomic absorption spectrometry



**TABLE 2.2**  
**TERMINOLOGY AND ABBREVIATIONS**

Abbreviation	Meaning
Acme	Acme Analytical Laboratories Ltd.
Actlabs	Activation Laboratories Ltd.
Ag	silver
AGAT	AGAT Laboratories Ltd.
AISC	all-in sustaining costs
ALS	ALS Minerals Limited
AOA	Archaeological Overview Assessment
Ar	argon
AR/ICP	argon inductively coupled plasma
ARD	acid rock drainage
As	arsenic
asl	above sea level
Au	gold
AuEq	gold equivalent
Avg. or avg	average
BC	British Columbia
BCEAA	British Columbia Environmental Assessment Act
boiling zone	fluid produces boiling
BTU	British thermal unit(s)
BWi	bond ball mill work index
C&F	cut and fill
CAD\$	Canadian Dollar
CAPEX	capital expenses
CCD	counter-current decantation
CDN	Canadian Resource Laboratories
CEAA	Canadian Environmental Assessment Act
CFM or cfm	cubic feet per minute
CIM	Canadian Institute of Mining, Metallurgy, and Petroleum
cm	centimetre(s)
CN	cyanide
CN	Canadian National Railway
CNA	Citxw Nlaka'pamux Assembly
Company, the	Westhaven Gold Corp.
CoV	coefficient of variation
CoV <sub>AV</sub>	average coefficients of variation
CP	Canadian Pacific Railway
CRM(s)	certified reference material(s)
CSAMT	controlled-source audio-frequency magnetotellurics
Cu	copper
cu. ft	cubic foot/feet
°C	degree Celsius

**TABLE 2.2**  
**TERMINOLOGY AND ABBREVIATIONS**

Abbreviation	Meaning
°F	degrees Fahrenheit
DC	direct current
deg	degree(s), °
Deposit, the	Shovelnose Gold Deposit
dia	diameter
\$M	dollars, millions
dm	decimetre
E	east
EA	Environmental Assessment
EAO	Environmental Assessment Office
Elk Property	Elk Gold Project
EM	electromagnetic
Exploration Permits	Notices of Work authorizations
FA	fire assay
FA/ICP	fire assay/ inductively coupled plasma
FAR	fresh air raise
Fairfield	Fairfield Minerals Ltd.
FMN	Forget Me Not (Zone)
FSR	Forest Service Road
ft	foot/feet
FW or F/W	footwall
g	gram
g/t	grams per tonne
G&A	general and administration
Gold Mountain	Gold Mountain Mining Corp.
GRAV	gravimetric
ha	hectare(s)
HFR	Heritage Field Reconnaissance
Hg	mercury
HP	horsepower
hr or hrs	hour(s)
HW or H/W	hanging wall
ICP	inductively coupled plasma
ICP-AES	inductively coupled plasma-atomic emission spectroscopy
ICPES or ICP-ES	inductively coupled plasma-emission spectroscopy
ICPMS or ICP-MS	inductively coupled plasma-mass spectrometry
ICP-OES	inductively coupled plasma-optical emission spectroscopy
ID	identification
ID <sup>3</sup>	Inverse Distance Cubed
in	inch(es)
IP	induced polarization

**TABLE 2.2**  
**TERMINOLOGY AND ABBREVIATIONS**

Abbreviation	Meaning
IRR	internal rate of return
IRS	intact rock strength
ISO	International Organization for Standardization
ISO/IEC	International Organization for Standardization/ International Electrotechnical Commission
k	thousand(s)
K <sub>80</sub>	80% passing feed size
kg	kilograms(s)
km	kilometre(s)
koz	thousands of ounces
kt	thousands of tonnes or kilo tonnes
kV	kilovolt(s), thousand volts
kW	kilowatt(s)
kWh or kWhr	kilowatt-hour
L or l	level
lb	pound(s)
level	mine working level referring to the nominal elevation (m RL), e.g. 4285 level (mine workings at 4285 m RL)
LHD	load, haul, dump
LiDAR	Light Detection and Ranging
LOM	life of mine
M	million(s)
m	metre(s)
m <sup>2</sup>	square metre(s), metre(s) squared
m <sup>3</sup>	cubic metre(s)
Ma	millions of years
m asl	metres above sea level
mag	magnetic
MINFILE	mineral inventory database
ML	metal leaching
Mlb	million pounds
mm	millimetre
MMO	Major Mines Office
mpd	metres per day
Mt	million tonnes or megatonnes
N	north
N	population size in statistics
n	sample size in statistics
NaCN	sodium cyanide
NAD	North American Datum

**TABLE 2.2**  
**TERMINOLOGY AND ABBREVIATIONS**

<b>Abbreviation</b>	<b>Meaning</b>
New Afton or New Afton Property	New Afton Project
New Gold	New Gold Inc.
NFN	Niaka'pamux First Nation
NI	National Instrument
NIR	near infrared
NN	Nearest Neighbour
NNTC	Nlaka'pamux Nation Tribal Council
NTS	National Topographic System
NPV	net present value
NSR	net smelter return
O <sub>2</sub>	oxygen
OPEX	operating expenses
OREAS	OREAS North America Inc.
Osisko	Osisko Gold Royalties Ltd.
oz	ounce(s)
P <sub>80</sub>	80% passing particle grind size
P&E	P&E Mining Consultants Inc.
Pb	lead
PEA	Preliminary Economic Assessment
P.Eng.	Professional Engineer
PFR	Preliminary Field Reconnaissance
PFS	Pre-Feasibility Study
P.Geo.	Professional Geoscientist
PLS	pregnant leach solution
ppb	parts per billion
ppm	parts per million
Project, the	the Shovelnose Gold Project that is the subject of this Report
Property, the	the Shovelnose Gold Property that is the subject of this Report
psi	pounds per square inch
Q1, Q2, Q3, Q4	first quarter, second quarter, third quarter, fourth quarter
QA	quality assurance
QA/QC or QAQC	quality assurance/quality control
QC	quality control
QMS	quality management system
R <sup>2</sup>	coefficient of determination
RAR	return air raise
Rb	rubidium
Rev.	revenue
ROFR	right of first refusal
ROM	run of mine

**TABLE 2.2**  
**TERMINOLOGY AND ABBREVIATIONS**

Abbreviation	Meaning
RQD	rock quality designation
Sable	Sable Resources Ltd.
SABC	SAG and ball mill combination
SAG	semi-autogenous grinding (mill)
SBG Group	Spences Bridge Group of Properties
S	south
S	sulphur
Se	selenium
SEDAR	System for Electronic Document Analysis and Retrieval
Sr	strontium
Strongbow	Strongbow Exploration Inc.
t	metric tonne(s)
Talisker	Talisker Resources Ltd.
Te	tellurium
Technical Report, or Report	this NI 43-101 Technical Report
TF	total field
Titan	Titan Diamond Drilling Ltd.
TOC	total organic carbon
t/m <sup>3</sup>	tonnes per cubic metre
tpd	tonnes per day
TSX	Toronto Stock Exchange
TSX-V	TSX Venture Exchange
US	United States
US\$	United States dollar(s)
UTM	Universal Transverse Mercator grid system
VZ1F	Vein Zone 1 Fault
W	west
W x H	width by height
Westhaven	Westhaven Gold Corp.
XRF	X-ray fluorescence
Yr or yr	year
Zone, the	South Zone
Zn	zinc

**TABLE 2.3**  
**UNIT MEASUREMENT ABBREVIATIONS**

<b>Abbreviation</b>	<b>Meaning</b>	<b>Abbreviation</b>	<b>Meaning</b>
µm	microns, micrometre	m <sup>3</sup> /s	cubic metre per second
\$	dollar	m <sup>3</sup> /y	cubic metre per year
\$/t	dollar per metric tonne	mØ	metre diameter
%	percent sign	m/h	metre per hour
% w/w	percent solid by weight	m/s	metre per second
¢/kWh	cent per kilowatt hour	Mt	million tonnes
°	degree	Mtpy	million tonnes per year
°C	degree Celsius	min	minute
cm	centimetre	min/h	minute per hour
d	day	mL	millilitre
dm	decimetre	mm	millimetre
ft	feet	MV	medium voltage
GWh	Gigawatt hours	MVA	mega volt-ampere
g/t	grams per tonne	MW	megawatts
h	hour	oz	ounce (troy)
ha	hectare	Pa	Pascal
hp	horsepower	pH	Measure of acidity
k	kilo, thousands	ppb	part per billion
kg	kilogram	ppm	part per million
kg/t	kilogram per metric tonne	s	second
km	kilometre	t or tonne	metric tonne
kPa	kilopascal	tpd	metric tonne per day
kV	kilovolt	t/h	metric tonne per hour
kW	kilowatt	t/h/m	metric tonne per hour per metre
kWh or kWhr	kilowatt-hour	t/h/m <sup>2</sup>	metric tonne per hour per square metre
kWh/t	kilowatt-hour per metric tonne	t/m	metric tonne per month
L	litre	t/m <sup>2</sup>	metric tonne per square metre
L/s	litres per second	t/m <sup>3</sup>	metric tonne per cubic metre
lb	pound(s)	T	short ton
M	million	tpy	metric tonnes per year
m	metre	V	volt
m <sup>2</sup>	square metre	W	Watt
m <sup>3</sup>	cubic metre	wt	weight
m <sup>3</sup> /d	cubic metre per day	wt%	weight percent
m <sup>3</sup> /h	cubic metre per hour	yr	year

### **3.0 RELIANCE ON OTHER EXPERTS**

The Authors of this Report have assumed, and relied on the fact, that all the information and existing technical documents listed in the References section of this Report are accurate and complete in all material aspects. Although the Authors have carefully reviewed all the available information presented to us, they cannot guarantee its accuracy and completeness. The Authors reserve the right, however, will not be obligated, to revise the Report and conclusions if additional information becomes known to the Authors subsequent to the effective date of this Report.

Copies of the tenure documents, operating licenses, permits, and work contracts were not reviewed. Information on land tenure was obtained from Westhaven. The Authors relied on tenure information from Westhaven and have not completed an independent detailed legal verification of title and ownership of the Shovelnose Gold Property. Ownership of the mining claims was independently verified by the Authors on July 18, 2023, utilizing the information available through the web page of the Mineral Titles Branch, Ministry of Energy, Mines and Low Carbon Innovation of the Government of British Columbia, located at:

[https://www.mtonline.gov.bc.ca/mtov/map/mto/cwm.jsp?site=mem\\_mto\\_min-view-title](https://www.mtonline.gov.bc.ca/mtov/map/mto/cwm.jsp?site=mem_mto_min-view-title)

Furthermore, this British Columbia government agency records tenure information for all mineral claims in the province.

The Authors have relied on Hannah Chow of Sadhra & Chow LLP, Chartered Professional Accountants, for assistance with the taxation calculations in the economic analysis as presented in section 22 of this Report.

The Authors have not verified the legality of any underlying agreement(s) that may exist concerning the land tenure, or other agreement(s) between third parties, however, have relied on and consider they have a reasonable basis to rely on Westhaven to have conducted the proper legal due diligence.

Select technical data, as noted in the Report, were provided by Westhaven and the Authors have relied on the integrity of such data. A draft copy of this Report has been reviewed for factual errors by Westhaven and the Authors have relied on Westhaven's knowledge of the Property in this regard. All statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the effective date of this Report.

## **4.0 PROPERTY DESCRIPTION AND LOCATION**

### **4.1 LOCATION**

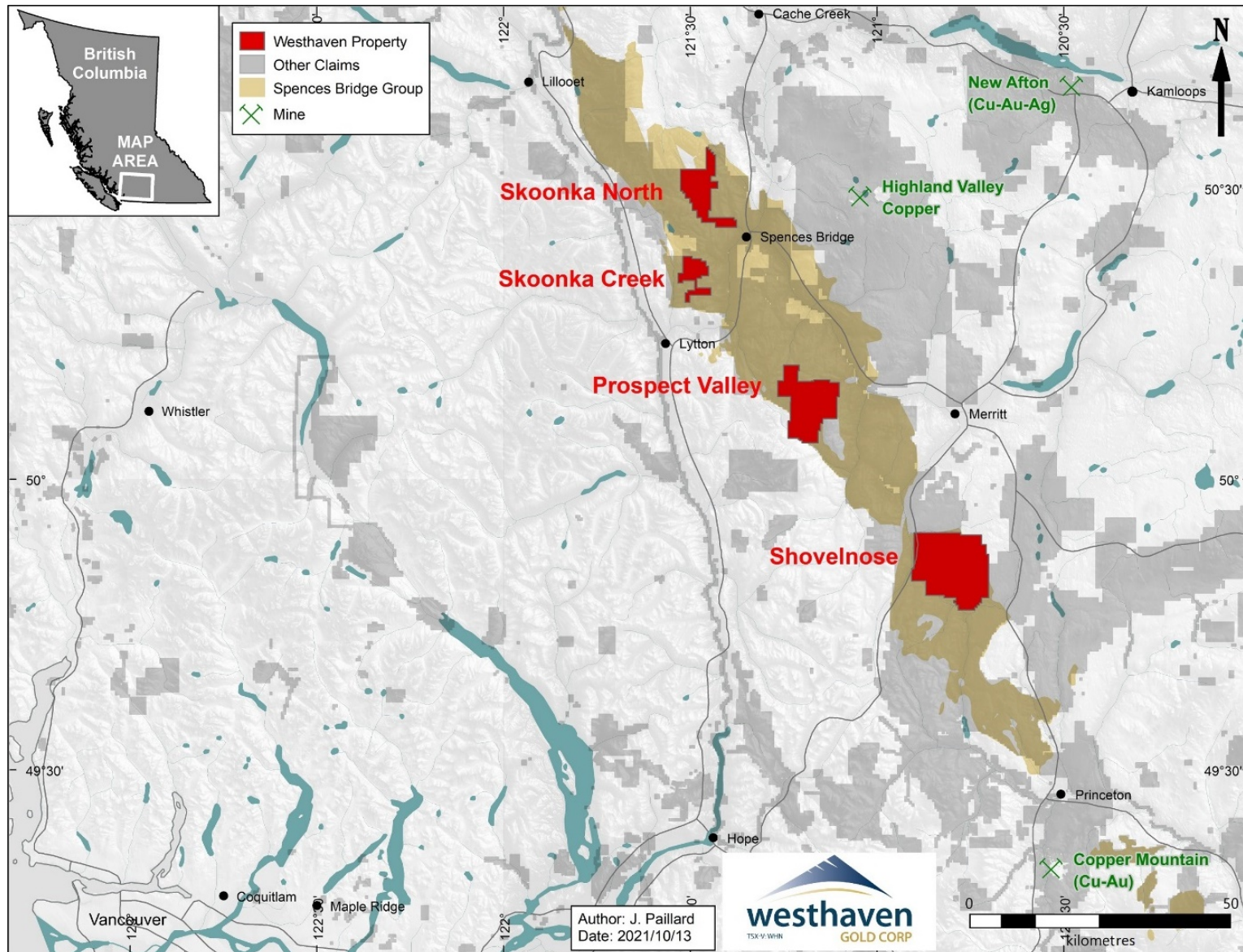
The Shovelnose Property (the “Property” or the “Project”) is located at latitude 49°51’25” N and longitude 120°48’25” W (UTM NAD83 Z10N: 657,700 m E, 5,522,600 m N), approximately 30 km south of the City of Merritt and immediately east of Coquihalla Highway 5, in south-central British Columbia (Figure 4.1). The Property area is situated within the 1:50,000 scale National Topographic System (“NTS”) map sheet 92H/15, in the Nicola and Similkameen Mining Divisions.

### **4.2 LAND TENURE**

The Shovelnose Property consists of 32 contiguous mineral claims encompassing 17,625 ha (Figure 4.2) and all are owned 100% by Westhaven. All the claims are in good standing at the effective date of this Report (Table 4.1). The Mineral Resource Estimate described in Section 14 of this Report is covered by mining claims 521061, 521063 and 521064, all of which are in good standing until May 19, 2033.

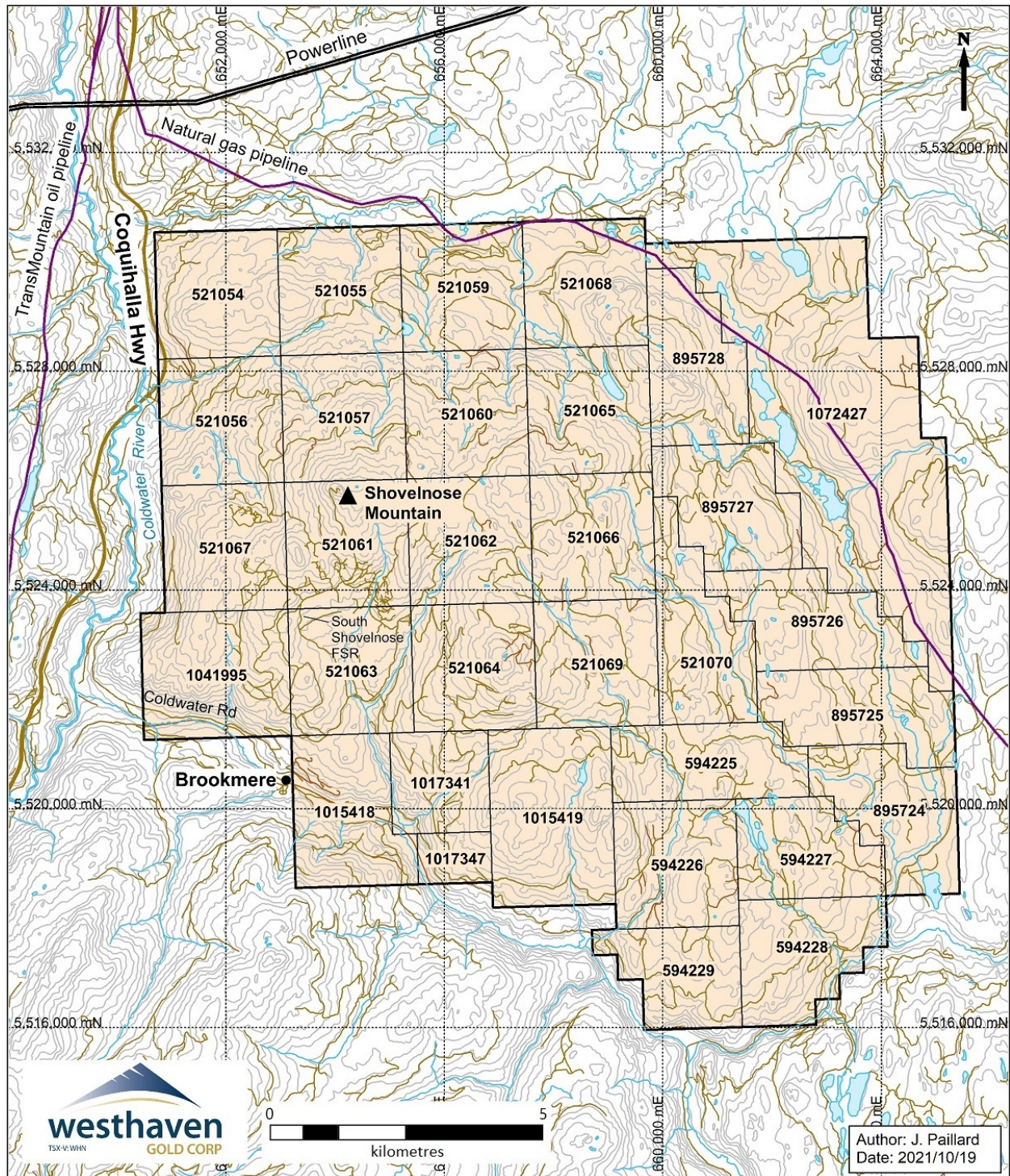


**FIGURE 4.1 SHOVELNOSE PROPERTY LOCATION MAP**



Source: Westhaven (December 2021)

**FIGURE 4.2 SHOVELNOSE PROPERTY MINERAL CLAIM MAP**



Source: Westhaven (December 2021)  
 Coordinates in UTM NAD83 Z10N

**TABLE 4.1**  
**SHOVELNOSE PROPERTY LAND TENURE <sup>1</sup>**

<b>Tenure ID</b>	<b>Claim Name</b>	<b>Tenure Type</b>	<b>Tenure Subtype</b>	<b>Issue Date</b>	<b>Expiry Date</b>	<b>Area (ha)</b>	<b>Owner Name</b>	<b>Ownership (%)</b>
521054	SHOVEL-1	Mineral	CLAIM	2005-10-12	2033-05-19	520.30	Westhaven Gold Corp.	100
521055	SHOVEL-2	Mineral	CLAIM	2005-10-12	2033-05-19	520.30	Westhaven Gold Corp.	100
521056	SHOVEL-3	Mineral	CLAIM	2005-10-12	2033-05-19	520.52	Westhaven Gold Corp.	100
521057	SHOVEL-4	Mineral	CLAIM	2005-10-12	2033-05-19	520.52	Westhaven Gold Corp.	100
521059	SHOVEL-5	Mineral	CLAIM	2005-10-12	2033-05-19	520.31	Westhaven Gold Corp.	100
521060	SHOVEL-6	Mineral	CLAIM	2005-10-12	2033-05-19	520.53	Westhaven Gold Corp.	100
521061	SHOVEL-7	Mineral	CLAIM	2005-10-12	2033-05-19	520.74	Westhaven Gold Corp.	100
521062	SHOVEL-8	Mineral	CLAIM	2005-10-12	2033-05-19	520.75	Westhaven Gold Corp.	100
521063	SHOVEL-9	Mineral	CLAIM	2005-10-12	2033-05-19	520.97	Westhaven Gold Corp.	100
521064	SHOVEL-10	Mineral	CLAIM	2005-10-12	2033-05-19	520.97	Westhaven Gold Corp.	100
521065	SHOVEL-11	Mineral	CLAIM	2005-10-12	2033-05-19	520.53	Westhaven Gold Corp.	100
521066	SHOVEL-12	Mineral	CLAIM	2005-10-12	2033-05-19	520.75	Westhaven Gold Corp.	100
521067	SHOVEL-13	Mineral	CLAIM	2005-10-12	2033-05-19	520.74	Westhaven Gold Corp.	100
521068	SHOVEL-14	Mineral	CLAIM	2005-10-12	2033-05-19	520.31	Westhaven Gold Corp.	100
521069	SHOVEL-15	Mineral	CLAIM	2005-10-12	2033-05-19	520.97	Westhaven Gold Corp.	100
521070	SHOVEL-16	Mineral	CLAIM	2005-10-12	2033-05-19	520.93	Westhaven Gold Corp.	100
594225	SHOVEL-17	Mineral	CLAIM	2008-11-13	2033-05-19	479.46	Westhaven Gold Corp.	100
594226	SHOVEL-18	Mineral	CLAIM	2008-11-13	2033-05-19	521.32	Westhaven Gold Corp.	100
594227	SHOVEL-19	Mineral	CLAIM	2008-11-13	2033-05-19	437.91	Westhaven Gold Corp.	100
594228	SHOVEL-20	Mineral	CLAIM	2008-11-13	2033-05-19	500.63	Westhaven Gold Corp.	100
594229	SHOVEL-21	Mineral	CLAIM	2008-11-13	2033-05-19	396.35	Westhaven Gold Corp.	100
895724	SHOVEL-22	Mineral	CLAIM	2011-08-31	2033-05-19	521.25	Westhaven Gold Corp.	100
895725	SHOVEL-23	Mineral	CLAIM	2011-08-31	2033-05-19	500.23	Westhaven Gold Corp.	100
895726	SHOVEL-24	Mineral	CLAIM	2011-08-31	2033-05-19	500.08	Westhaven Gold Corp.	100
895727	SHOVEL-25	Mineral	CLAIM	2011-08-31	2033-05-19	499.87	Westhaven Gold Corp.	100

**TABLE 4.1**  
**SHOVELNOSE PROPERTY LAND TENURE <sup>1</sup>**

<b>Tenure ID</b>	<b>Claim Name</b>	<b>Tenure Type</b>	<b>Tenure Subtype</b>	<b>Issue Date</b>	<b>Expiry Date</b>	<b>Area (ha)</b>	<b>Owner Name</b>	<b>Ownership (%)</b>
895728	SHOVEL-26	Mineral	CLAIM	2011-08-31	2033-05-19	499.64	Westhaven Gold Corp.	100
1015418	SHOVEL-33	Mineral	CLAIM	2012-12-20	2033-05-19	542.07	Westhaven Gold Corp.	100
1015419	SHOVEL-34	Mineral	CLAIM	2012-12-20	2033-05-19	729.73	Westhaven Gold Corp.	100
1017341	SHOVEL-35	Mineral	CLAIM	2013-03-01	2033-05-19	333.55	Westhaven Gold Corp.	100
1017347	SHOVEL-36	Mineral	CLAIM	2013-03-01	2033-05-19	125.11	Westhaven Gold Corp.	100
1041995	BROOK1	Mineral	CLAIM	2016-02-12	2033-05-19	625.16	Westhaven Gold Corp.	100
1072427		Mineral	CLAIM	2019-11-04	2033-05-19	2082.27	Westhaven Gold Corp.	100

**Notes:**

<sup>1</sup> Land tenure information effective July 18, 2023

### **4.3 OPTION AND PURCHASE AGREEMENT**

In 2011, Westhaven optioned the Shovelnose Gold Property from Strongbow Exploration Inc. (“Strongbow”). In 2015, Westhaven completed a purchase agreement with Strongbow to acquire 100% interest in the Property by issuing shares and granting a 2% net smelter return (“NSR”) royalty to Strongbow. Westhaven retained the right to reduce the NSR to 1% by paying Strongbow CAD\$500,000 at any time. In 2015, Strongbow sold the 2% NSR to Osisko Gold Royalties Ltd. Currently, Westhaven owns 100% interest in the Shovelnose Property, less the NSR. From 2012 to 2019, Westhaven staked an additional six claims (4,438 ha) and allowed 11 claims (3,225 ha) to lapse.

In 2018, Sable Resources Ltd (“Sable”) staked a 194,038 ha land package covering over 70% of the Spences Bridge Gold Belt and adjoining most of Westhaven’s Properties. On October 16, 2018 Westhaven announced a strategic alliance with Sable. Under the strategic alliance, Sable entered into an agreement whereby any ground staked by Sable within five km of Westhaven’s existing Properties (see Figure 4.1) would be subject to a 2.5% NSR royalty in perpetuity, as long as the claims are held. Additionally, Westhaven had a 30-day right of first refusal (“ROFR”) for a three-year period, for any properties within the same five km radius. However, that ROFR expired October 16, 2021. On April 22, 2019, a new company, Talisker Resources Ltd (“Talisker”), was created by Sable that included all BC properties held at that time by Sable. The previous agreement between Westhaven and Sable is binding with Talisker. Talisker’s reported work to date is limited to grassroots prospecting and soil and stream sediment sampling.

More recently, Westhaven closed a financing arrangement with Franco-Nevada Corporation (“Franco-Nevada”) on October 6, 2022. Westhaven completed the grant and sale of a 2% net smelter return royalty (the “NSR”) to Franco-Nevada for US\$6M. The NSR applies to all Westhaven properties, including the Shovelnose Property, in southwestern BC. Westhaven has an option to buy-down 0.5% of the NSR for US\$3M for a period of five years from the closing of the transaction. In addition, Franco-Nevada subscribed for 2,500,000 shares of Westhaven at CAD\$0.40 per share for gross proceeds of CAD\$1M.

### **4.4 PROPERTY AND TITLE IN BRITISH COLUMBIA REGULATIONS**

In British Columbia, a valid Free Miners' license is required to prospect for minerals, record a claim or acquire a recorded claim or interest in a recorded claim by transfer. Company licenses are available to any registered corporation in good standing. A Free Miners’ license is valid for one year and it must be renewed yearly to be kept current. The cost of obtaining a Corporate Free Miners License is \$500 to issue and \$500 to renew.

Mineral Titles in British Columbia are acquired and maintained through Mineral Titles Online, a computerized system that provides map-based staking. Acquisition costs for claims are \$1.75 per ha. This confers ownership of the claim for one year beyond the date of staking. In order to hold the claims beyond the first year, the owner must complete a required amount of work per year, either physical or technical, on the Property or pay cash in lieu of that work to the Provincial Government. Work is reported in a Statement of Work, and supported by an assessment report filed with the government. These assessment reports remain confidential for one year, and then

become available for public access. If assessment work or cash in lieu is not filed by the required date, the claims will automatically lapse.

The schedule of work requirements or cash in lieu payments in BC is outlined below:

- **Mineral Claim - Work Requirement**
  - \$5 per ha for anniversary years 1 and 2;
  - \$10 per ha for anniversary years 3 and 4;
  - \$15 per ha for anniversary years 5 and 6; and
  - \$20 per ha for subsequent anniversary years.
  
- **Mineral Claim - Cash-in-lieu of Work**
  - \$10 per ha for anniversary years 1 and 2;
  - \$20 per ha for anniversary years 3 and 4;
  - \$30 per ha for anniversary years 5 and 6; and
  - \$40 per ha for subsequent anniversary years.

With the exception of two Shovelnose claims, 1041995 at \$15/ha/yr and 1072427 at \$10/ha/yr, all the remaining Property claims require \$20/ha/yr work.

In response to the COVID-19 pandemic, on March 27, 2020, the Chief Gold Commissioner of British Columbia extended the time limit for registering a statement of exploration and development, registering payment instead of exploration and development, registering a revised expiry date, or registering a rental payment, until December 31, 2021, for all claims due to expire before December 31, 2021 (Chief Gold Commissioner, 2020). Work commitments continue to accrue during that time. In effect, all expiry dates prior to this date would be moved forward in time. At that time the Shovelnose claims had expiry dates in 2031 and consequently there was no impact on the due dates. Westhaven has subsequently advanced the claims such that the expiry dates are in 2033.

#### **4.5 SURFACE RIGHTS**

The surface rights in the Project area are not currently owned by Westhaven. The land parcels in the immediate Project site are classified as Crown Provincial and Untitled Provincial Land by Owner Type in website ParcelMapBC. A right-of-way exists for the power line to Shovelnose Mountain owned by the province of British Columbia. Although Westhaven does not own the surface rights in the Project area, it is expected that the surface rights can likely be obtained for future use, as the land is mostly provincial crown land.

#### **4.6 FIRST NATIONS COMMUNICATIONS**

First Nations land claims are still unresolved in this area, although no current or historical settlements, or archaeologically significant sites, are documented within the Shovelnose claim group. Westhaven maintains ongoing dialogue and a close relationship with local First Nations communities, and has contracted a series of cultural and archeological surveys at various locations on the Shovelnose Gold Property up to the effective date of this Report (Table 4.2).

**TABLE 4.2  
CULTURAL AND ARCHEOLOGICAL STUDIES**

<b>Property</b>	<b>Year</b>	<b>Contractor</b>	<b>Study Performed</b>
Shovelnose	2012	Esh-kn-am Cultural Resources Management Services of Merritt, BC	Preliminary Field Reconnaissance (“PFR”) survey over the area that was the focus of exploration
	2019	Esh-kn-am Cultural Resources Management Services of Merritt, BC	PFR survey of proposed drill sites
		Archaeology Branch of the Ministry of Forest, Lands, Natural Resource Operations and Rural Development of Victoria, BC	Archaeological Inventory search
		Professional Archeologists Bjorn Simonsen and John Somogyi-Cszimazia; Archaeological and Cultural Resource Consultant (Victoria, BC)	Archaeological Overview Assessment (“AOA”) and PFR of proposed drill and trenching sites within the Shovelnose mining claim near Merritt B.C.
	2020	Esh-kn-am Cultural Resources Management Services of Merritt, BC	PFR Report: Westhaven Ventures - 38 Drill sites FILE No. 1920-319
		Esh-kn-am Cultural Resources Management Services of Merritt, BC	PFR Report: Westhaven Ventures - 21 Drill sites FILE No. 1920-319
		Esh-kn-am Cultural Resources Management Services of Merritt, BC	PFR Report: Westhaven Ventures - 29 Drill sites FILE No. 1920-319
	2022	A.E.W. LP on behalf of the Nlaka’pamux Nation Tribal Council	Cultural Heritage Overview Report Shovelnose Mountain Project Multi-Year Area Based Permit NOW – 100352660
		Esh-kn-am Cultural Resources Management Services	Gap Analysis for Westhaven Ventures; May 2022
		4 Season Heritage Consulting and K’en T’em Management Corp.	Shovelnose Mountain, Archaeological and Cultural Heritage, PFR Report 2022
	2023	A.E.W. LP on behalf of the Nlaka’pamux Nation Tribal Council	Westhaven Shovelnose May 3 to 5, 2023, HFR Summary Report
		Terra Archeology and K’en T’em Management Corp.	Archaeological and Cultural Heritage, PFR Report, Franz Area
		Terra Archeology and K’en T’em Management Corp.	Shovelnose Archaeological and Cultural Heritage, PFR Report, Proposed Drill Collars

No cultural and archeological surveys were undertaken in 2021, due in part to unavailability of the preferred First Nations contractor.

#### **4.7 ENVIRONMENTAL AND PERMITTING**

In addition to the archeology work, Westhaven has completed a significant amount of environmental baseline work, starting in 2021 and continuing through 2022 and 2023. The purpose of this environmental program is to support future permitting on the Property, with a focus on long-term, multi-year programs. The program is led by SLR Environmental, in collaboration with K'en T'em Environmental. K'en T'em is an arm of the Citxw Nlaka'pamux Assembly, which has future ramifications for Project development. The environmental program is summarized in Section 20 of this Report.

The Shovelnose Property is on provincially administered Crown Land, and within the traditional territory and ancestral lands of the Nlaka'pamux peoples. Westhaven is engaged in ongoing dialogue, consultations and discussions with representatives of the Nlaka'pamux Nation Tribal Council (“NNTC”), Citxw Nlaka'pamux Assembly (“CNA”), individual Nlaka'pamux bands, local stakeholders and other agencies. In collaboration with local First Nation groups and consultants, Westhaven continues its Preliminary Field Reconnaissance (“PFR”), Heritage Field Reconnaissance (“HFR”), and environmental baseline programs. PFRs and HFRs are completed prior to any ground disturbance, to assist in locating sites of potential cultural and (or) historical value, in order that they can be avoided. Environmental baseline studies help ensure that the Company, First Nation groups, and local communities have access to meaningful and accurate information to assist in decision making in a responsible, inclusive, and ethical manner. No archeological sites have been identified on the Shovelnose Property and there are no known environmental issues concerning the claims.

In British Columbia, Notices of Work authorizations (“Exploration Permits”) are required when surface disturbance is a consequence of the exploration activity. All work to date by Westhaven has been conducted with valid permits, and Westhaven currently possesses multi-year Exploration Permits and related amendments for proposed work at Shovelnose covering the period from September 01, 2019 to September 01, 2024. An application for a new multi-year Exploration Permit covering more extensive activities within the Property was submitted on July 30, 2021 (tracking number 100352660), with minor amendments (dated August 3 and September 8, 2021) as requested by the BC Ministry of Energy Mines and Low Carbon Innovation during the review process. All subsequent requests for additional information from the Ministry and other entities have been addressed, as received, on an ongoing basis. Issuance of the new Exploration Permit has been delayed by the Ministry. However, Westhaven’s exploration activities can continue under the current permit until September 1, 2024.

#### **4.8 OTHER SIGNIFICANT FACTORS AND RISKS**

The Authors are not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform work on the Shovelnose Gold Property that has not been discussed in this Report.

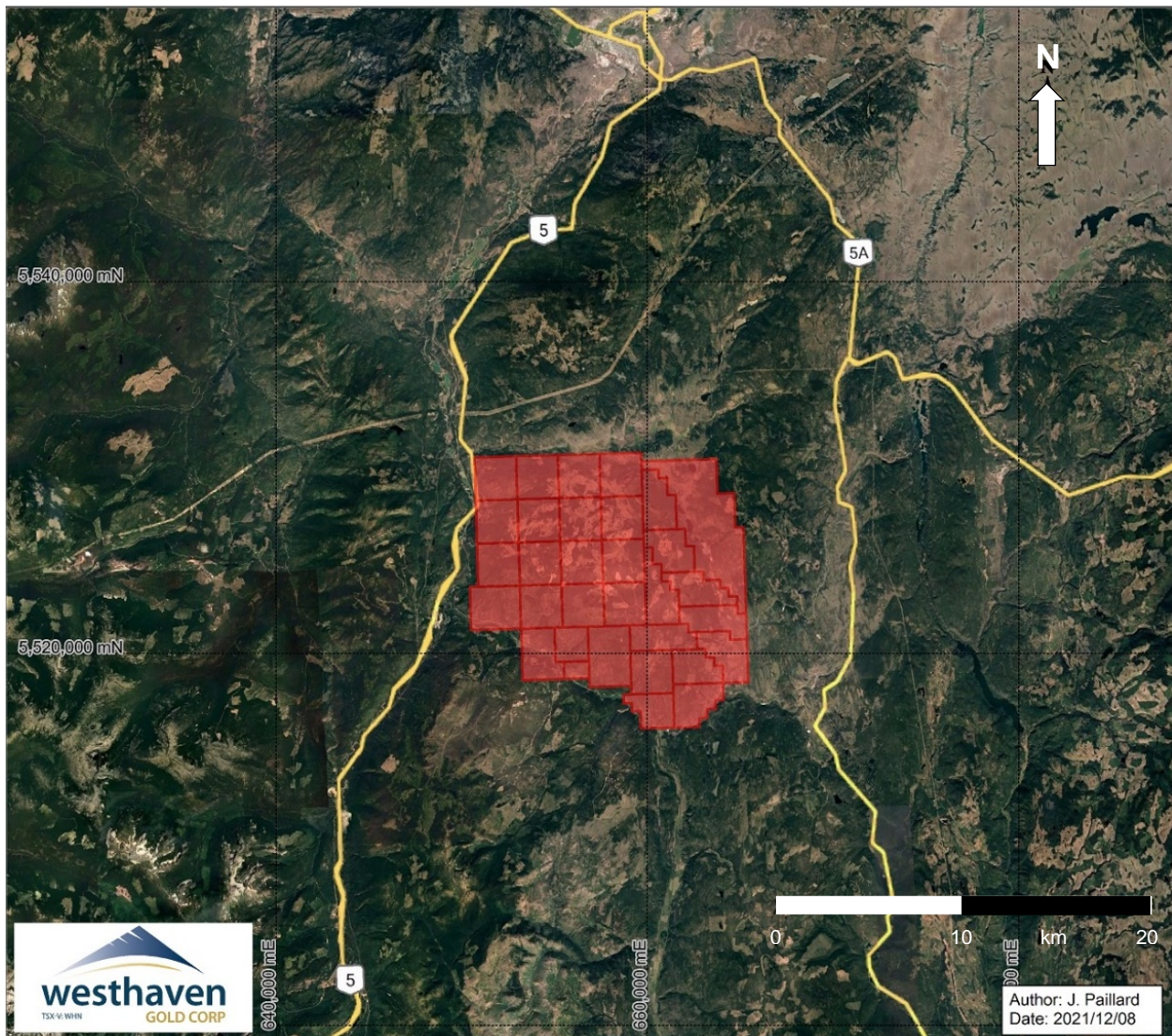


## 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 ACCESS

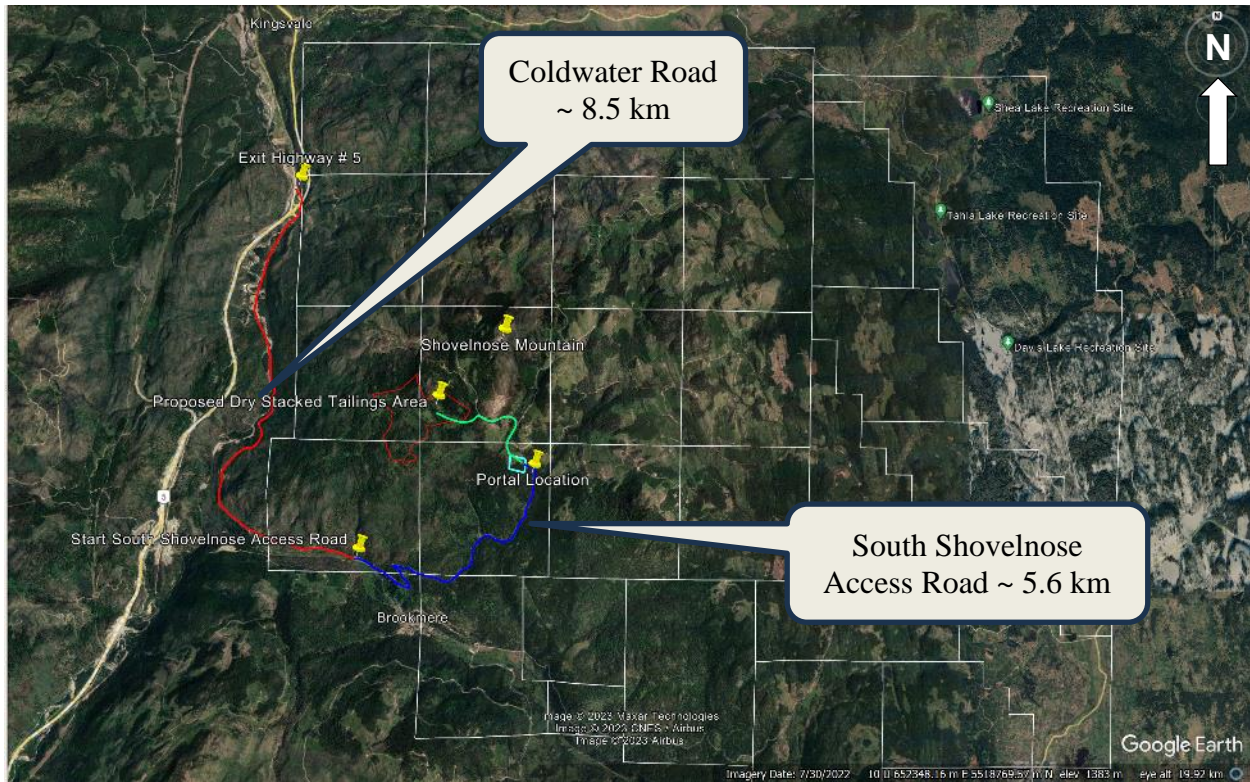
The Shovelnose Gold Property is located by road approximately 30 km south of the City of Merritt, BC (Figure 5.1) and 270 km northeast of Vancouver. The Shovelnose Project site can be accessed from several directions, with the main access route via Coquihalla Highway 5 Exit 256, following the Coldwater Road south towards Brookmere and then ascending the South Shovelnose Access Road to the Project site (Figure 5.2).

**FIGURE 5.1 SHOVELNOSE GOLD PROPERTY ACCESS**



*Source: Westhaven (December 2021)*

**FIGURE 5.2 SHOVELNOSE GOLD PROPERTY PRIMARY ACCESS ROUTE**



Source: Google Earth (August 2023)

### 5.1.1 Merritt to Highway 5 Exit 256

The section of road from Merritt to Coquihalla Highway 5 Exit 256 is a divided highway and is in good condition (Figure 5.3). The highway passes over several bridges along the way that are not of concern for transporting plant and mobile equipment. The road width, height and load capacities appear to be sufficient for the Project requirements. The distance from Merritt to the Coldwater Road turn-off is approximately 35 km, a 20-minute drive.

**FIGURE 5.3 HIGHWAY 5 COQUIHALLA TURN-OFF (EXIT 256) AT COLDWATER ROAD**



*Source: P&E (2023)*

### **5.1.2 Coldwater Access Road from Highway 5 Exit 256 to South Shovelnose Access Road**

The Coldwater Road to Brookmere (Figure 5.4) follows the Coldwater River and crosses the river on two occasions. The road is a two-lane road approximately 6 m wide, mostly paved with some newer sections that were replaced following recent flooding in November 2021. The road rises over 8.5 km from 850 m asl to 971 m asl at the turn-off to the South Shovelnose Access Road.

**FIGURE 5.4 COLDWATER ROAD TO BROOKMERE**



*Source: P&E (2023)*

The access road is in reasonable condition. Some improvements to the road are recommended due to the expected increase in traffic with the mine development. It is assumed that the mine site will not have a camp, therefore personnel and equipment will travel frequently on that road under all weather conditions. The road crosses the Coldwater River via two bridges. The load capacities on

the access road could not be verified, however, it appears that there is sufficient capacity for transporting heavy loads into the Project area via the proposed route (Figure 5.5).

**FIGURE 5.5 BRIDGE NO.1 ON THE COLDWATER ROAD**



*Source: P&E (2023)*

Several gravel sources are found along the access road and could be utilized for road and site construction (Figure 5.6).

**FIGURE 5.6 GRAVEL PIT ALONG THE COLDWATER ROAD**



*Source: P&E (2023)*

A power line supplying Brookmere and the radio/cellular tower on Shovelnose Mountain runs along the access road (Figure 5.7). This powerline corridor could be the potential power supply route for the Project if the line can be upgraded to the higher power requirements of the mine site.

**FIGURE 5.7**      **POWERLINE ALONG THE COLDWATER ROAD**



*Source: P&E (2023)*

Travel distance from the Westhaven town location in Merritt to the turn-off of the South Shovelnose Access Road is 42 km and takes approximately 30 minutes.

### **5.1.3 South Shovelnose Access Road (Coldwater Access Road Turn-Off to Project Site)**

The final access road to the Project site, the South Shovelnose Access Road (Figure 5.8), starts 8.5 km from the Highway 5 Coldwater Exit 256. This access road is currently an unpaved forestry road that requires a 4x4 vehicle. This access road will need to be upgraded to be safely used for the site construction and operation under all-weather conditions and allow transport of heavy equipment and process plant equipment.

This road reaches all Project site locations including the top of Shovelnose Mountain where a radio/cellular tower is located.

**FIGURE 5.8**      **TYPICAL ROAD AREA OF SOUTH SHOVELNOSE ROAD**



*Source: P&E (2023)*

The South Shovelnose Road crosses several creeks on the way to the Project site (Figure 5.9). The creeks showed minimal water flow during the Author’s site visit in the summer of 2023. However, culvert sizes and capacities for safe drainage in the spring should be reviewed and potentially larger culverts installed.

**FIGURE 5.9**      **SOUTH SHOVELNOSE ROAD CROSSING UPPER SPEARING CREEK**



*Source: P&E (2023)*

The total distance on the South Shovelnose Access Road to the underground portal site is approximately 5.6 km with an increase in elevation from 971 m asl to 1,265 m asl at the portal location. Travel duration for the 5.6 km is between 15 and 20 minutes depending on the road conditions. When the access road has been upgraded to operating standards, a travel speed of 20 to 30 km/hr should be achievable.

#### **5.1.4 Roads on the Project Site**

The Project area contains a network of forestry roads over 400 km in length. The roads on the Project site are in comparable condition to the South Shovelnose Access Road. Roads required for operation will be upgraded depending on the intended use and the site locations for the process plant, dry stack tailings facility, waste rock storage and other site infrastructure.

#### **5.1.5 Other Access Roads**

To access the northern portion of the Property, turn off the Coquihalla Highway 5 at the Coldwater exit and drive approximately three km north to the Kane Valley Road, and take forestry access roads to the Project locations. For the south and central portions of the Property, including the focus areas of drilling from 2011 through 2021, turn off the Coquihalla Highway 5 onto the Coldwater Road, and either travel eastwards up the Shouz Creek Forest Service Road (“FSR”) (Figure 5.10) or southeast towards the Community of Brookmere. Follow the Coldwater Road southeast to the Kilometre 41 marker and turn north onto the South Shovelnose FSR (Figure 5.11).

Overall, the accessibility of the Project site is considered very good with multiple emergency egress routes if required. Exploration activities are possible throughout most of the year. However, access to the Property can be subject to very muddy road conditions during spring rains and hampered by snow accumulations in winter, particularly at higher elevation.

**FIGURE 5.10 SHOUZ CREEK FOREST SERVICE ROAD ACCESS TO SHOVELNOSE GOLD PROPERTY**



*Source: Westhaven (October 2021)*

*Figure Description: Shouz Creek Forest Service Road accessing the western edge of the Shovelnose Gold Property viewed from the northbound Coquihalla/Coldwater Exit (256) ramp looking east across the Coldwater Road. Location: 650,619 m E, 5,527,621 m N and 836 m elevation.*



**FIGURE 5.11 SOUTH SHOVELNOSE FOREST SERVICE ROAD ACCESS TO SHOVELNOSE GOLD PROPERTY**



*Source: Westhaven (October 2021)*

**Figure Description:** South Shovelnose Forest Service Road accessing the southern edge of the Shovelnose Gold Property viewed from the south side of the Coldwater Road (km marker 41), looking northeast. Approximately 1 km west of the Community of Brookmere. Location: 651,961 m E, 5,521,528 m N, and 977 m elevation.

## 5.2 LOCAL RESOURCES

The close proximity to both the City of Merritt and the Coquihalla Highway 5 provides the Property with logistical support, access, and an excellent transportation and power supply corridor.

Three 500 kV high-voltage transmission lines (BC Hydro Lines 5L81, 5L82 and 5L83) running from the Interior of BC to the Lower Mainland cross the highway about five km north of the Coldwater Road exit (see Figure 5.1). A connection from these lines would be approximately 12 km long. A 138 kV power transmission line (BC Hydro 1L251) follows Highway 5A to Princeton. A powerline connection from this line would be approximately 20 km long. The Trans Mountain oil pipeline (Edmonton to Vancouver) and the Enbridge main natural gas transmission line (Fort Nelson to the US border) each run south along the highway service corridor just west of the Property.

The City of Merritt is the nearest full-service community to the Shovelnose Property with a population of 7,179 (2023) persons, 30% of whom are under the age of 25 (City of Merritt, 2021).

The main industries are forestry, ranching and tourism/hospitality. Merritt lies at the cross-roads of the Coquihalla Highway 5 between Vancouver and Kamloops, the Okanogan Connector Highway (No. 97C) between Merritt and Kelowna, and Highway 8 between Merritt and Spences Bridge. Merritt has a wide range of suppliers and contractors available for mineral exploration and mining, including a bulk fuel supplier, heavy equipment contractors, a helicopter base, and labour. Other resources in Merritt include a ready-mix concrete plant (Norgaard), a precast concrete plant (Barkman), multiple industrial facilities and equipment repair shops, multiple hotels, banks, supermarkets (Walmart, Canadian Tire) and industrial suppliers.

Merritt is served by a 69 kV electrical transmission line. Mainlines for the CP and CN railroads follow the Fraser River, located approximately 35 km to the west, and the CPR formerly had a spur line into Merritt.

Merritt is currently a hub for construction of the Transmountain Pipeline which is routed through the area, however, does not cross the Property. Due to the workload of the Transmountain Pipeline, temporary workcamps for the construction of the pipeline were established in the vicinity of Merritt. Overall, the region has seen an increase in business activity with the pipeline project.

The small community of Brookmere at the Shovelnose South Access Road may offer infrastructure solutions for the site during development and operations such as housing of staff and communal services such as garbage collection. Overall, access to resources and personnel is considered favourable for this Project. Any resources not directly available in Merritt can likely be sourced from other community centers within 1 to 1 ½ hours drive away or from Vancouver (approximately 3 hours drive).

### **5.3 INFRASTRUCTURE**

A Fortis BC natural gas supply pipeline to Princeton/Osoyoos leaves the Enbridge mainline, and runs east-southeast across the northern part of the Shovelnose Gold Property, and then turns south-southeast within the eastern edge for another 10 km. Fortis BC considers the entire Shovelnose Gold Property to be within their service area (Fortis BC, 2021). A radio/cellular tower is located on the top of Shovelnose Mountain, which provides excellent communication throughout the Property.

Approximately 400 km of active and deactivated logging roads and trails facilitate easy access to most of the Property using four-wheel drive vehicles.

### **5.4 CLIMATE**

The climate in the Merritt area is dry with little precipitation (annual mean total of 321 mm (Environment Canada)), mild winters (approx. -3°C), and temperate spring and fall seasons (~7°C). It is one of the warmest places in the Thompson-Nicola region, with warm and sunny summers (~26°C) and 2,030 hours per year of sunshine (Environment Canada, 2021; City of Merritt, 2021). Higher elevations at Shovelnose Mountain result in more extreme temperature and precipitation ranges.

The Project area is in at the transition zone from coastal to interior climatic conditions and is divided into two watershed regions, the Nicola and the Similkameen watershed (Table 5.1).

<b>Item</b>	<b>Nicola Watershed</b>	<b>Similkameen Watershed</b>
Mean temperature (°C)	5.6	5.0
Frost days (days)	176 (range 158 to 185)	186 (range 167 to 194)
Annual Precipitation (mm)	556	720
Maximum 1-day total precipitation (mm)	21	25

*Source: <https://climatedata.ca/>*

Weather data is available from a weather station in Brookmere at 980 m asl. The weather conditions at the Project site elevation of approximately 1,250 to 1,450 m asl are more extreme in temperature range and precipitation. A BC government snow survey station is located on Shovelnose Mountain and provides data on snow coverage in the area.

## **5.5 PHYSIOGRAPHY**

The western and northern parts of the Shovelnose Property lie within the Coldwater River drainage basin (Nicola drainage), whereas streams in the central, eastern and southern parts flow into the Similkameen River drainage. The Property is situated on a plateau with several small steep rolling hills, including Shovelnose Mountain (Figure 5.12). Shovelnose Mountain lies within a broad transition from coastal to interior climatic zones.

## FIGURE 5.12      PHYSIOGRAPHY OF THE SHOVELNOSE GOLD PROPERTY AREA



*Source: Westhaven (October 2021)*

**Figure Description:** Shovelnose Gold Property on the east side of the Coldwater Road (photo right), the Coquihalla Highway (photo left), and the Coldwater Road Exit (256) viewed from the southeast side of the northbound Coquihalla Highway. View looking northeast and includes the Coldwater River (lower right), Coldwater Road (center right), Shovelnose Mountain (upper right) and the Shouz Creek FSR (centre). Location: 649,961 m E, 5,526,989 m N and 868 m elevation.

The area has been logged repeatedly and contains extensive forest access roads, recreational ATV trails, and numerous cattle pastures. Tree planting activities have been ongoing locally over the past few years (including 2020 and 2021). Small-scale tree harvesting operations utilizing various access roads to the Property area have been ongoing intermittently through 2019 and into 2023. Western extremities of the Shovelnose Property, including some areas of current drilling activity, were impacted by forest fires in August and September of 2021. Effects of the burns are apparent in Figures 5.10 to 5.12.

Property elevations range from 860 m asl on its lower western margin at the Coldwater River to 1,680 m asl at the peak of Shovelnose Mountain (Figure 5.13). Forests are generally mixed pine with open grassy areas to wetlands, particularly at lower elevations to the north and east. Northern slopes tend to be more densely overgrown. Bedrock is scattered and sparse with some exposures in road-cuts at lower and higher elevations. Unknown and highly variable thicknesses of soil, till and glaciofluvial cover are extensive on lower slopes.

**FIGURE 5.13**      **VIEW FROM SHOVELNOSE MOUNTAIN TOWARDS THE SOUTHEAST**



*Source: P&E (2023)*

The immediate Project area does not have any significant waterbodies, lakes or streams if the Coldwater River is not considered in the immediate area. Due to the low rainfall and the dry conditions, the surface runoff in the creeks is reduced to minimal flow in the summer and is unlikely to sustain fish habitat in the immediate area.

On the far eastern side of the Property several recreational areas are located (Tahla Lake Recreation Site, Davis Lake Recreation Site and Boss Lake). These areas are approximately 8 km straight-line distance from the Project site and will not be impacted by the development of the Project.

## 6.0 HISTORY

### 6.1 EARLY EXPLORATION HISTORY

The discovery of placer gold ignited the Fraser and Thompson Rivers gold rush in the late 1800s and early 1900s. Placer gold was mined from gravel bars on major tributaries in the Ashcroft-Lytton-Lillooet District. In particular, the Nicoamen River, located 23 km northwest from Shovelnose Mountain, played a role in initiating the gold rush in the Merritt Region. However, no specific mention of, or evidence for, placer operations within the Shovelnose Gold Property has been found to date.

In 1994, a government-sponsored regional silt sample survey anomaly in an east-west trending creek southeast of Kingsvale, on the northwestern flank of Shovelnose Mountain and within the current Property, returned an anomalous value of 68 ppb Au (BC RGS 40 or GSC Open File 2666; 1994).

In 2001-2002, Fairfield Minerals Ltd (“Fairfield”), a predecessor company to the current Almadex (nee Almaden), completed regional-scaled prospecting and reconnaissance geochemical sampling programs targeting the Spences Bridge Group of rocks guided by BC government-sponsored regional stream sediment sampling to prioritize areas (BC RGS 40 or GSC Open File 2666). Almadex collected 41 silt samples, 14 soil samples and 22 rock samples. Results from this work identified several areas with potential for gold mineralization.

### 6.2 2005 TO 2010 STRONGBOW EXPLORATION INC.

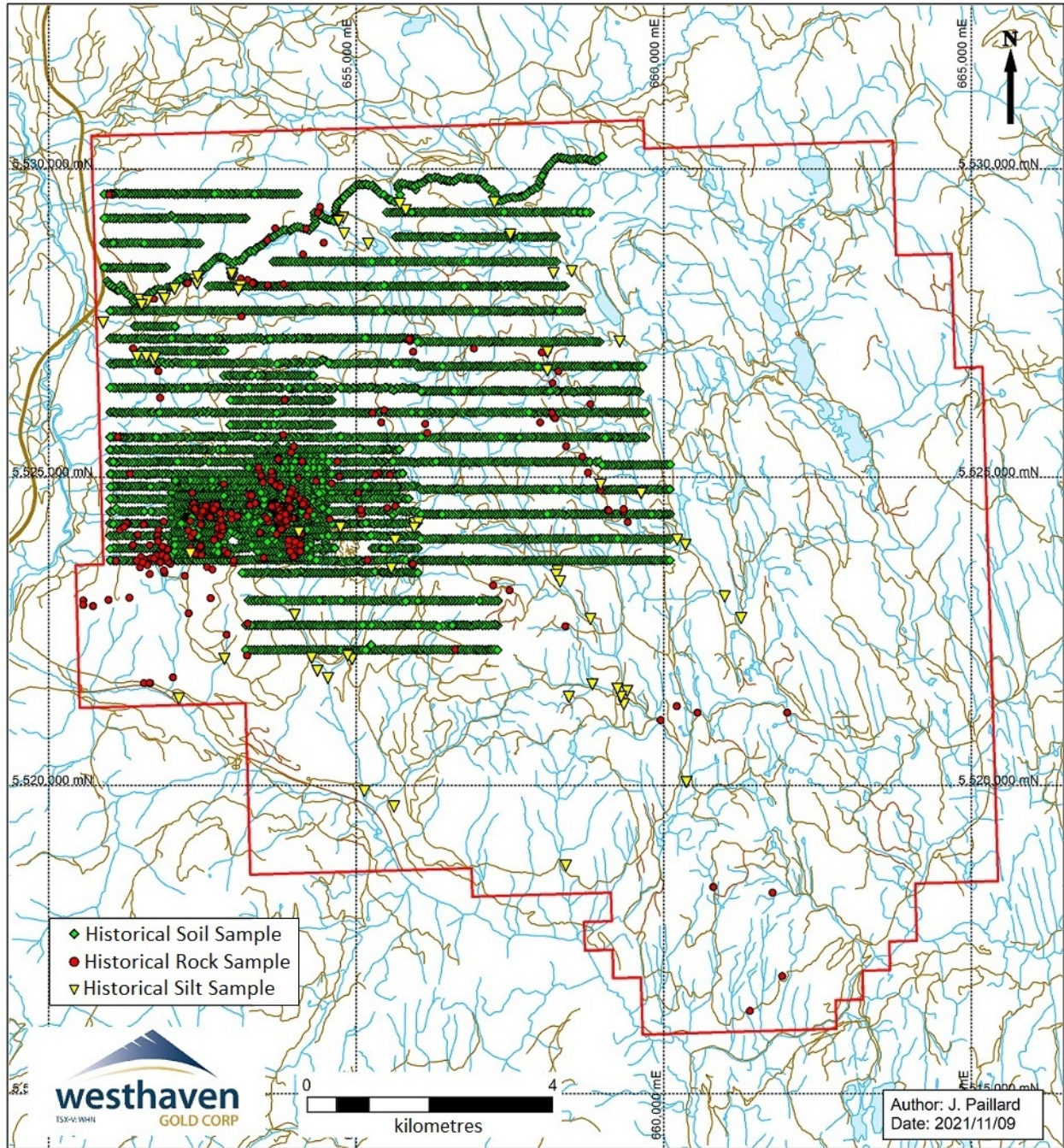
Strongbow Exploration Inc. (“Strongbow”) undertook gold exploration programs on the northwest portion of the current Property between 2005 and 2010 (Table 6.1). In October 2005, Strongbow staked the original Shovelnose claims, based on the 1994 government regional silt sample anomaly that returned 68 ppb Au (BC RGS 40, 1994). Between 2006 and 2010 Strongbow actively explored the Shovelnose Gold Property, resulting in the discovery of four surface gold occurrences (Mik, Line 6, Tower, and Brookmere) and the recognition of other potential soil geochemical targets.

Year	Mapping	Sampling			Geophysics (line-km)		Trench
		Silt	Soil	Rock	Airborne Mag	Ground Mag	
2006	1:10,000	52	57	57			
2007	1:10,000/1:2,500		3,838	162	308		3-17 m
2008	1:10,000/1:2,500		272	243			7-189 m
2009	1:10,000		14	193			18-338 m
2010			363	43		23.2	
<b>Total</b>		<b>52</b>	<b>4,544</b>	<b>698</b>	<b>308</b>	<b>23.2</b>	<b>28-544 m</b>

Source: Westhaven (October 2021)

Strongbow's 2006 exploration program on the Property included reconnaissance silt sampling (52), soil sampling (57) and rock sampling (57) as shown in Figure 6.1, and mineral prospecting and bedrock mapping. A total of 15 rock samples returned assays of >100 ppb Au, the highest rock grab sample assay returned 505 ppb Au.

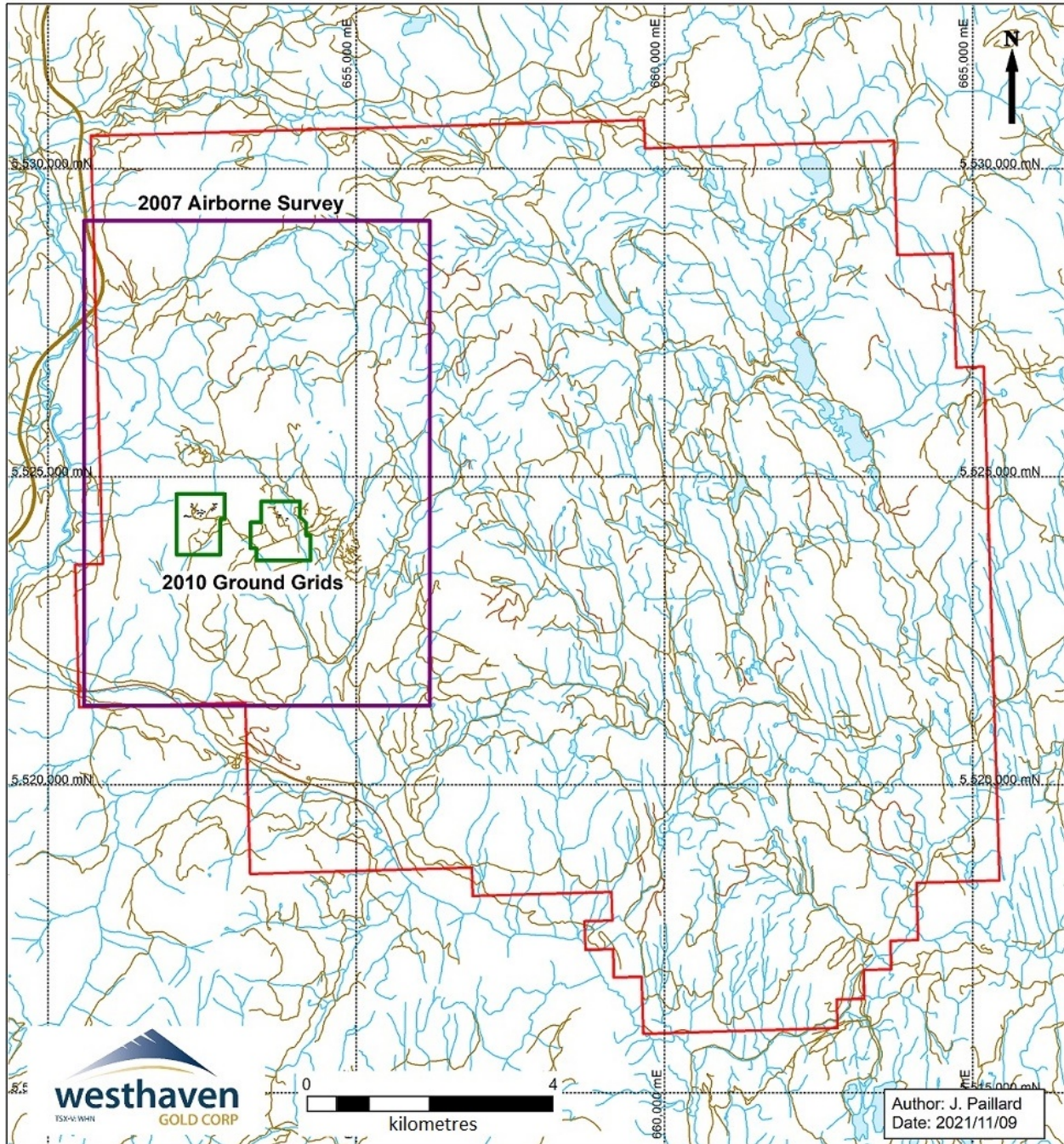
**FIGURE 6.1 HISTORICAL SURFACE GEOCHEMICAL SAMPLING**



Source: Westhaven (December 2021)  
Coordinates in UTM NAD83 Z10N

In 2007, Strongbow completed both regional and detail scale soil (3,838) and rock (162) sampling, and prospecting and airborne geophysics (308 line-km) over the Shovel-1 through Shovel-16 claims (Figure 6.2). Follow-up surface work led to discovery of the Line 6, Mik and Tower Zones.

**FIGURE 6.2 STRONGBOW GEOPHYSICAL SURVEYS**



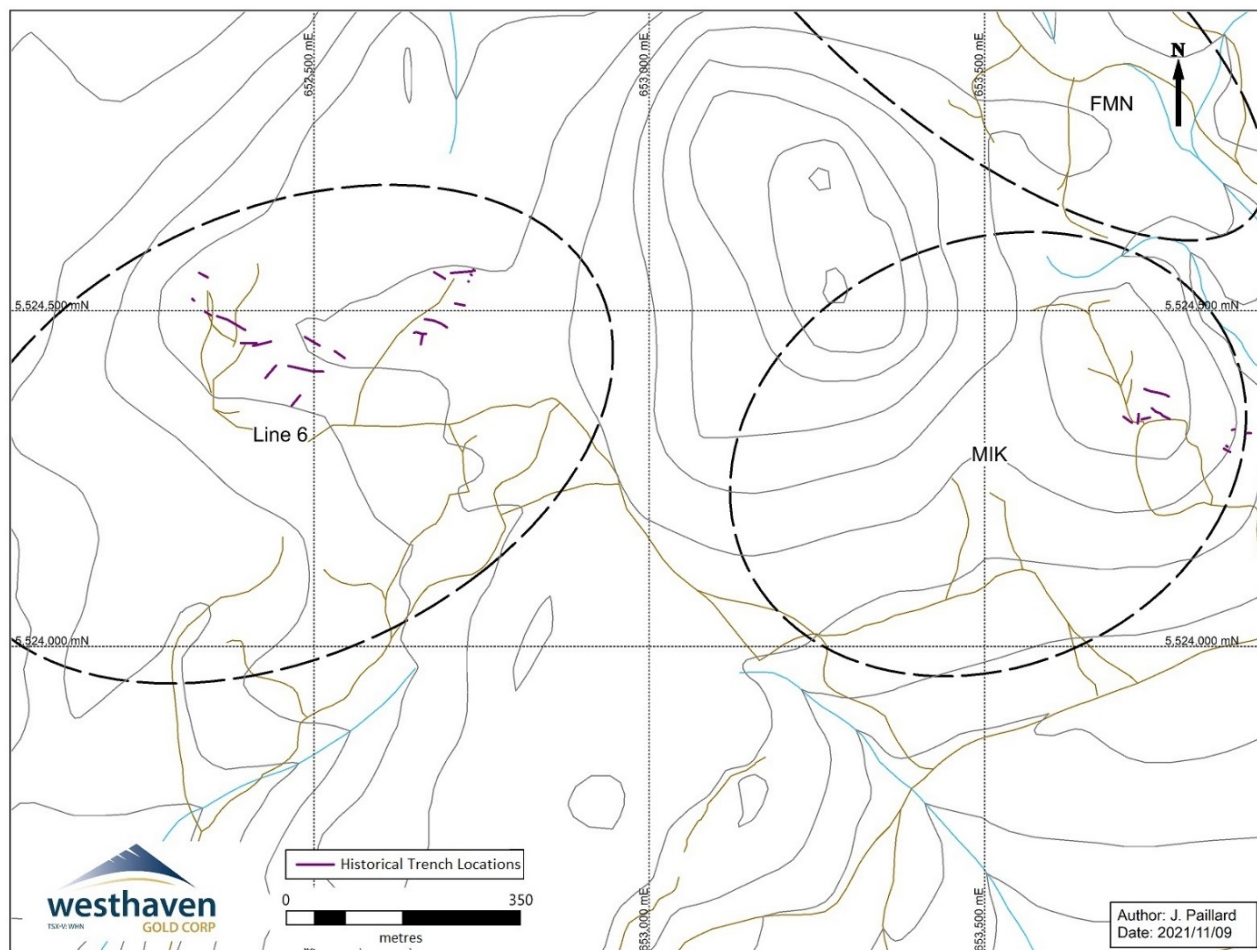
*Source: Westhaven (December 2021)  
Coordinates in UTM NAD83 Z10N*

Exploration in 2008 consisted of select infill and detailed grid soil sampling (272), rock sampling (243), detailed and reconnaissance prospecting, bedrock mapping over the southwestern portion



of the Property, and mechanized trenching at seven locations (~189 m) over the Mik and Line 6 Zones (Figure 6.3).

**FIGURE 6.3 STRONGBOW TRENCHING**



*Source: Westhaven (December 2021)  
Coordinates in UTM NAD83 Z10N*

Exploration in 2009 focused mainly on expanding the previously discovered mineralized zones and soil geochemical anomalies (14 soil samples and 193 rock samples). Work consisted of follow-up prospecting and mapping in the Mik and Line 6 Zones. Additional mechanical trenching was conducted to extend the Mik Zone to the southwest. Discovery of more quartz veins in the Line 6 Zone prompted the excavation of two hand trenches, followed by mechanical trenching. A total of approximately 338 m of trenching was completed at 18 sites (Figure 6.3).

In 2010, Strongbow completed ground magnetics (23.2 line-km) at two locations (Figure 6.2), prospecting (43 rock samples), and infill auger soil sampling (363 samples). The focus of the 2010 exploration was to better define and expand the known areas of mineralization and identify new gold targets in the southeast portion of the claims that formed the original property. No drilling was undertaken at anytime by Strongbow, and its historical work is summarized in Table 6.1.

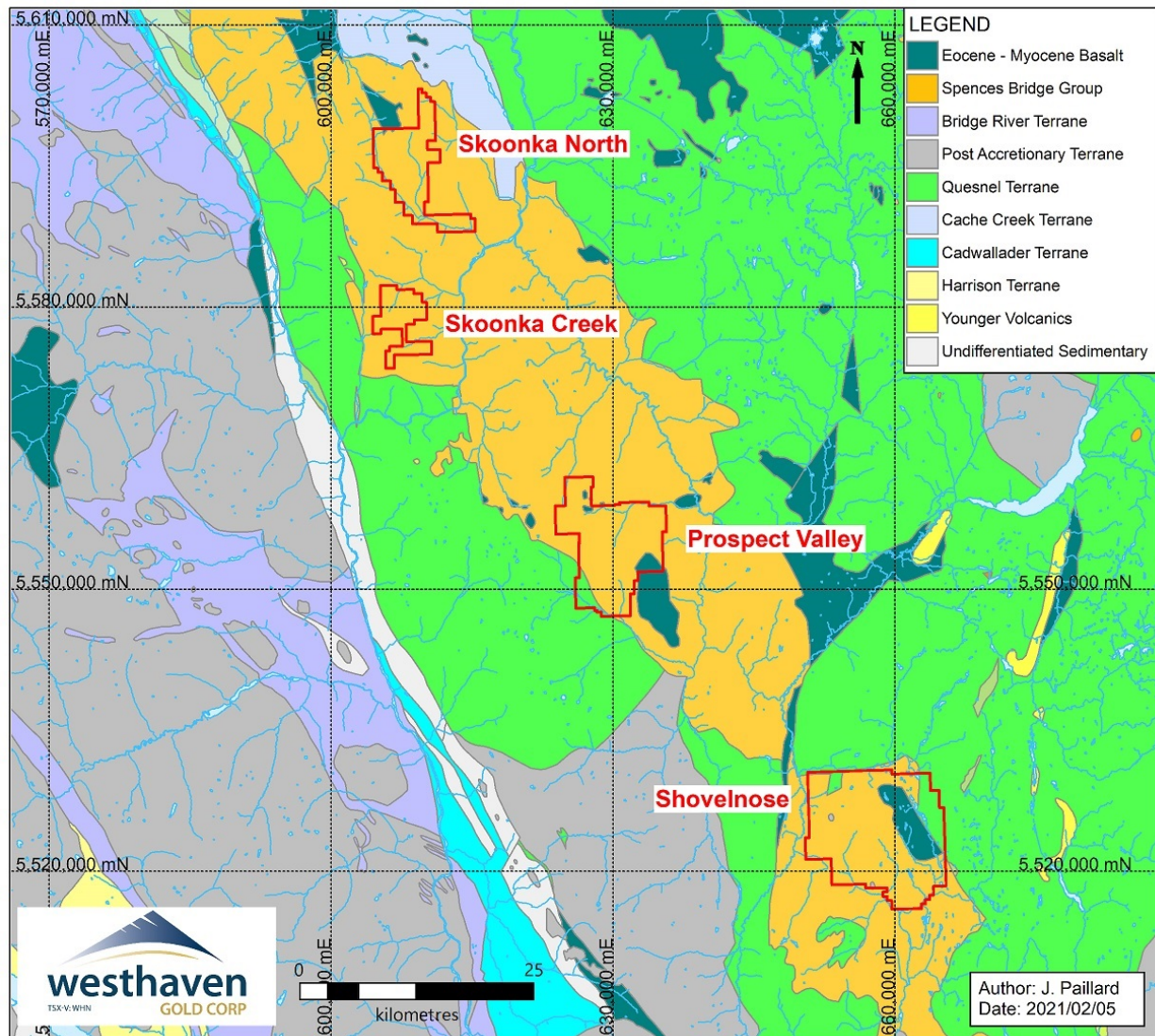
In 2011, Strongbow optioned the Shovelnose Gold Property to Westhaven.

## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 REGIONAL GEOLOGY

Westhaven's mineral properties are underlain mainly by the Spences Bridge Group, a mid-Cretaceous subaerial volcanic succession (Thorkelson and Rouse, 1989; Diakow and Barrios, 2008) that overlaps several terranes within the Intermontane Belt (Thorkelson and Smith, 1985). The Spences Bridge Group, located east of the Fraser Fault System, forms a 215 km north-northwest trending belt (400 km<sup>2</sup>) extending from 50°46'N near the northern settlement of Pavilion to almost 49°N, south of Princeton, BC. Regional geology in the vicinity of Westhaven's landholdings, including the extent of the Spences Bridges Group, is shown in Figure 7.1, with the Shovelnose Gold Property situated at the south end of the trend.

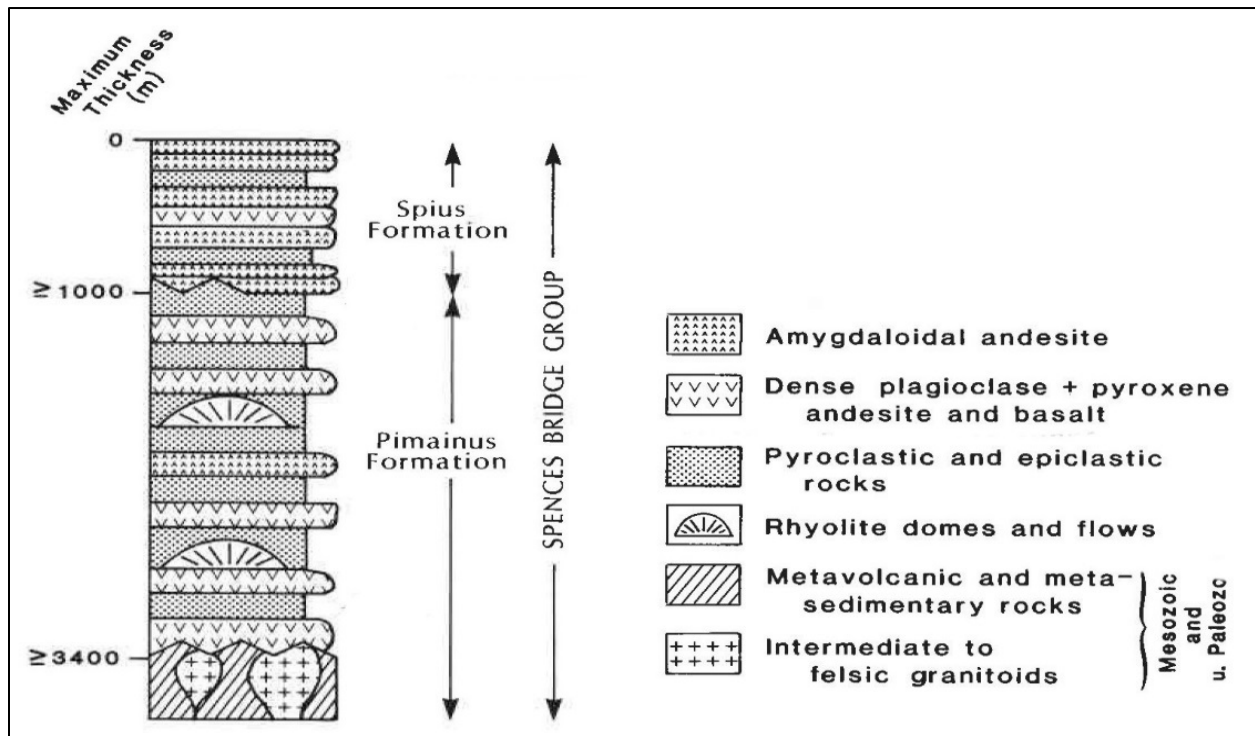
**FIGURE 7.1 REGIONAL GEOLOGICAL SETTING**



*Source: Laird (2021), after Cui et al., (2017)*  
Coordinates in UTM NAD83 Z10N

The Spences Bridge Group consists of two principal lithostratigraphic units based on work by Thorkelson and Rouse (1989), as illustrated by the stratigraphic column of Figure 7.2. The Pimainus Formation comprises the lower unit, 2.5 km thick, and consists of basalt to rhyolite lavas intercalated with pyroclastic rocks. The Spius Formation, forming the upper unit, is 1 km thick and consists mostly of amygdaloidal andesite and basalt with some scoria and minor pyroclastic and epiclastic rocks. These two volcanic units were deposited subaerially, concurrent with folding and faulting, and share a contact that varies from gradational to unconformable and is locally faulted.

**FIGURE 7.2 STRATIGRAPHIC COLUMN OF THE SPENCES BRIDGE GROUP**



Source: Laird (2021), after Thorkelson and Rouse (1989)

Age dating of the Spences Bridge Group volcanic rocks using Rb-Sr (whole rock), U-Pb on zircon, K-Ar on hornblende and biotite, paleobotany (fossil leaves), and palynology indicates that the volcanic rocks are late Albian in age, ranging from 96.8 Ma to 104.5 Ma (Thorkelson and Rouse, 1989; Thorkelson and Smith, 1985).

The Spences Bridge Group and equivalent strata unconformably overlie several rock units of the Quesnelia and Cache Creek terranes. Southeast of Spences Bridge, the Cretaceous succession overlies volcanic rocks of the Upper Triassic Nicola Group (Quesnelia) and plutonic rocks of the Lower Jurassic Guichon batholith, the lower Mesozoic Mount Lytton Plutonic Complex, and other felsic to intermediate intrusions. North of Spences Bridge, basement rocks consist of sedimentary and volcanic formations of the Pennsylvanian to Lower Jurassic Cache Creek Group.

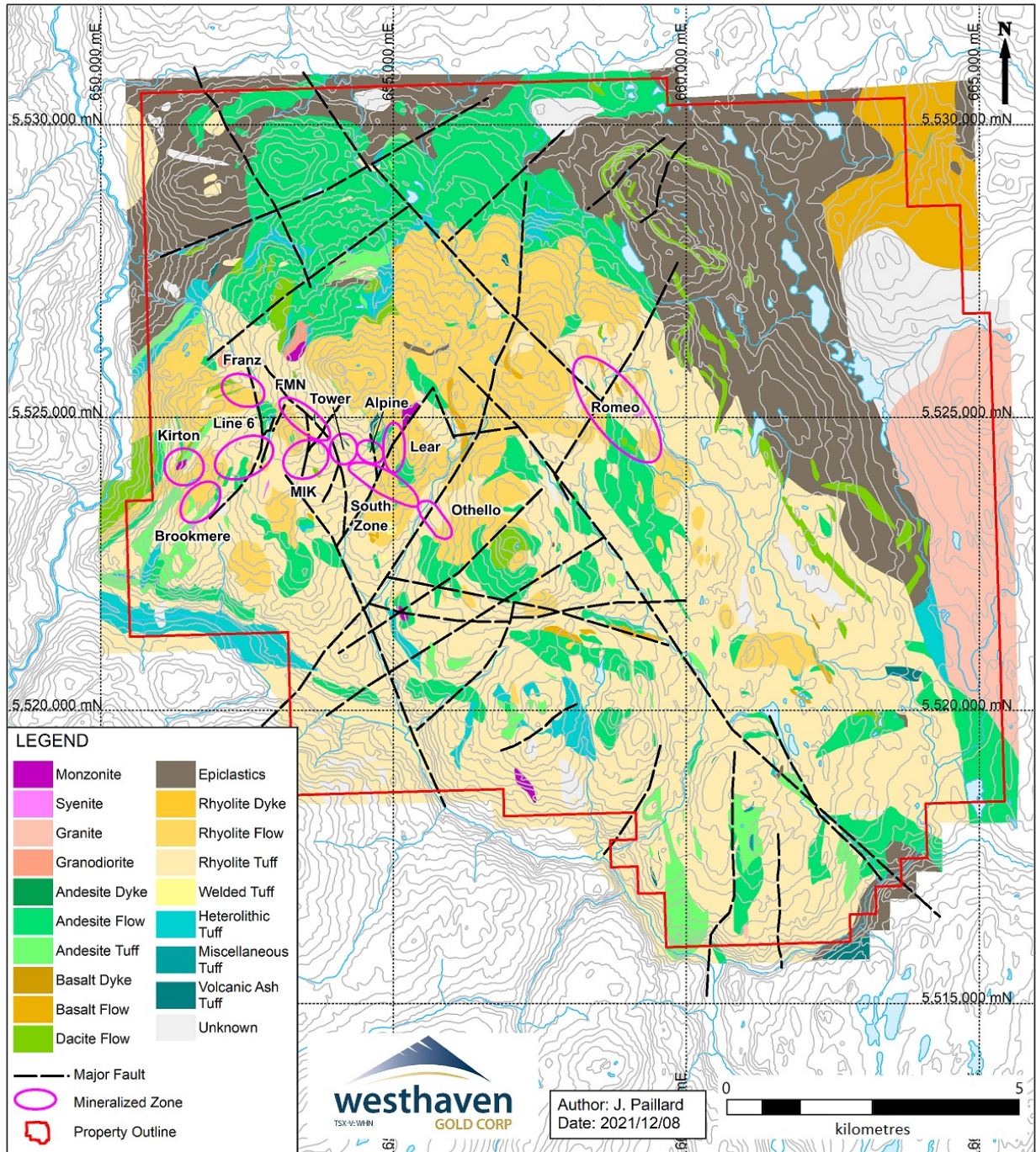
Spences Bridge Group volcanic rocks are locally overlain by Eocene-aged volcanic and sedimentary units of the Princeton and Kamloops Groups (Monger and McMillan, 1989; Diakow and Barrios, 2008) and Miocene-aged Chilcotin Group basalts. These younger units consist of basalt, andesite, dacite and rhyolite flows, with minor tuffs and clastic sedimentary rocks.

Locally thick deposits of Pleistocene materials and recent glacial till and alluvium are prevalent in all of the major creeks and river valleys. Much of the region was overridden during the last Pleistocene glaciation by ice moving south to southeastwards (Nicoamen Plateau; Ryder, 1975), with local variations induced by physiography and topography.

## **7.2 PROPERTY GEOLOGY**

The geology of the Shovelnose Gold Property is represented in Figure 7.3. The Property is underlain by late Triassic Nicola Group volcanic and equivalent-aged intrusive rocks and early-late Cretaceous Spences Bridge Group volcanic rocks of the Pimainus Formation, unconformably overlain by resistive mafic volcanic rocks of the Eocene Princeton Group exposed to the northeast. A series of small potassium feldspar-phyric syenite bodies and mafic dykes intrude into and crosscut the volcanic stratigraphy. Outcrops are generally small and most abundant on topographic highs.

**FIGURE 7.3 SHOVELNOSE GOLD PROPERTY GEOLOGY AND GOLD MINERALIZED ZONES**



Source: Westhaven (December 2021)  
 Coordinates in UTM NAD83 Z10N

The characteristics of the three main lithostratigraphic groups are summarized as follows:

- **Nicola Group:** The oldest rocks on the Property are represented by limited occurrences of strongly altered and deformed intermediate volcanic rocks and weathered granite mapped in the eastern and northern portion of the Property.
- **Princeton Group:** On the eastern margin of the Property, several small, round-topped hills host the erosional remnants of fine-grained weakly amygdaloidal and weakly porphyritic basalt flows.
- **Spences Bridge Group:** Unconformably overlying the Nicola Group rocks is the Spences Bridge Group, consisting of locally carbonate altered andesitic flows and flow-top breccias, with intervening volcanoclastic debris flows and rhyolite flows of the Pimainus Formation, which host the gold-silver mineralization. Alteration facies include pervasive chlorite, propylitic, hematitic and pervasive silicification alteration. Carbonate is abundant, particularly near the margins of crosscutting andesite dykes. These rocks are offset by north-northeast trending normal faults and are cut locally by northeast-trending syenite dykes in the southwest part of the Property.

A conspicuous upper unit of crystal lithic rhyolite tuffs overlies and is commonly interbedded with rhyolite flows. These rocks generally exhibit a crudely developed planar sub-horizontal fabric interpreted to have formed from compaction and flow while the rocks were still hot, shortly after eruption and deposition. Many lithic clasts within this unit are flattened, representing fiamme formed by compacted pumice fragments. Clasts range from rhyolitic near surface to heterolithic and andesitic with depth and rarely exceed pebble sizes. Crystal fragments in this crystal lithic rhyolite tuff consist of broken coarse-grained feldspars. The porosity of this unit acted as a permeable unit when in contact with epithermal mineralization and is the main host to the gold-bearing quartz veins in surface outcroppings at the Mik, Line 6, and Tower Zones on the Property.

Syenite dykes have been mapped on the Property as northeast-trending, bright orange to red units up to 200 m wide and contain up to 30% coarse-grained potassium feldspar. Mafic dykes are typically dark greenish-brown, aphanitic and moderately- to strongly-magnetic, with minor anhedral black mafic phenocrysts (<1 mm). The dykes crosscut the Princeton Group rhyolite flow and tuffaceous lithologies, suggesting a subsequent volcanic event.

Recent mapping on the Property outlined northeast-trending, west-side down normal faults that offset the underlying Nicola Group and Spences Bridge Group rocks. Less abundant northwest-trending structures have also been mapped. These northwest-trending faults, most notably in the South Zone, appear to vertically offset lithologies. In the northwest part of the Property, where only limited mapping has been conducted, several east-northeast parallel faults have been observed to cut Nicola Group and Spences Bridge rocks. However, it is uncertain if these faults offset the Princeton Group rocks too and how they relate to the older, northeast and northwest trending faults.

## 7.3 DEPOSIT GEOLOGY

The Shovelnose Gold Property hosts high-grade low sulphidation epithermal gold and silver mineralization within subaerial volcanics of the 215 km long north-northwest trending mid-Cretaceous Spences Bridge Group. Diamond drilling and mineral prospecting on the Property have identified at least ten mineralized zones: South, Lear, Alpine, Brookmere, Line 6, Mik, Tower, Forget Me Not (“FMN”), Franz, and Romeo Zones (Figure 7.4). Mineralization occurs in these Zones as gold-silver bearing quartz vein zones, largely hosted in a rhyolite dome, with the primary vein system extending for >4 km (Figure 7.5). The mineralization in the South Zone is the focus of this Report.

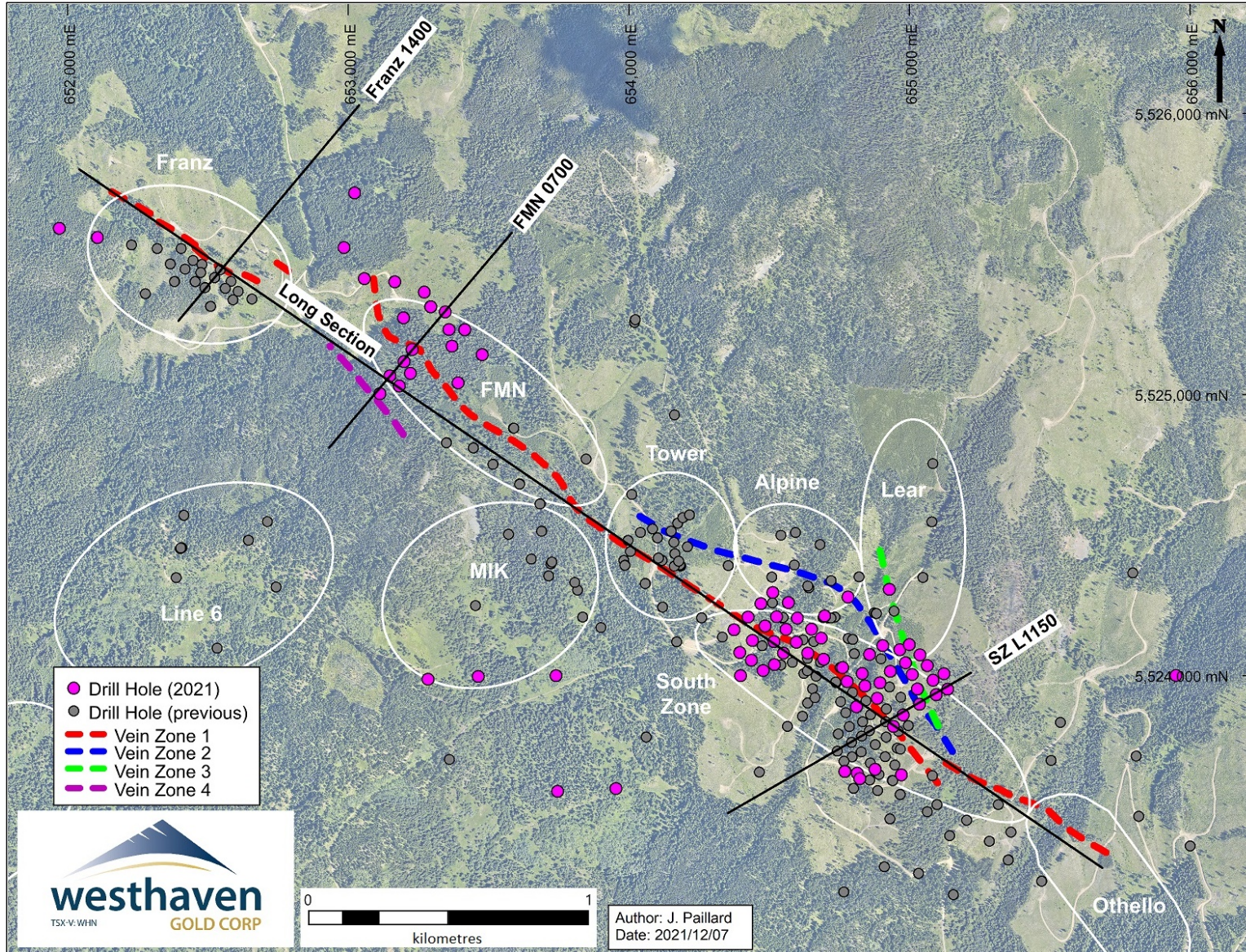
### 7.3.1 South Zone

The South Zone is located near the southeast end of the main mineralized trend on the Property (Figure 7.4 and Figure 7.5). Host lithologies are rhyolite tuffs and flows, and mafic basement rocks (heterolithic tuff, andesite tuff and andesite flow). The highest-grade gold mineralization occurs over a 300 m vertical range in a shallow paleo-horizon (approximately 1,050 m to 1,325 m asl) of boiling that features colloform-cruciform banded quartz veins containing adularia bands and selvages, bladed quartz after calcite, ginguero, and electrum. Deeper veining (below approximately 1,050 m asl) features barren massive to weakly banded quartz with crystalline potassium feldspar.

The main mineralization is delineated between two steeply-dipping faults, with four subparallel vein systems identified: Vein Zones 1, 2, 3 and 4 (Figure 7.6 and Figure 7.7). Vein Zones 1, 2 and 3, primarily in the South Zone, and also extending into the adjacent Othello, Lear and Alpine Zones, are included in the Mineral Resource Estimate described in Section 14 of this Report. Vein Zone 4 has been traced in the gap between the FMN and Franz Zones (see Figure 7.4).

Each of the Vein Zones internally demonstrates multiple crosscutting periods of vein formation and brecciation. Veins are multi-phase quartz-adularia with remnants of early bladed carbonate and an earlier stage of cherty quartz ± adularia with sub-micrometre size pyrite grains. Vein Zones 1 and 3 tend to contain more pyrite and elevated molybdenum, whereas Vein Zone 2 contains more pathfinder elements, such as arsenic and antimony. The highest gold grades are associated with dark ginguero bands, and in more diffuse bands and clots of sulphides/sulphosalts at the transition from adularia to quartz bands. Wall rock alteration is dominantly pervasive adularia and disseminated pyrite. There is no significant retrograde overprinting.

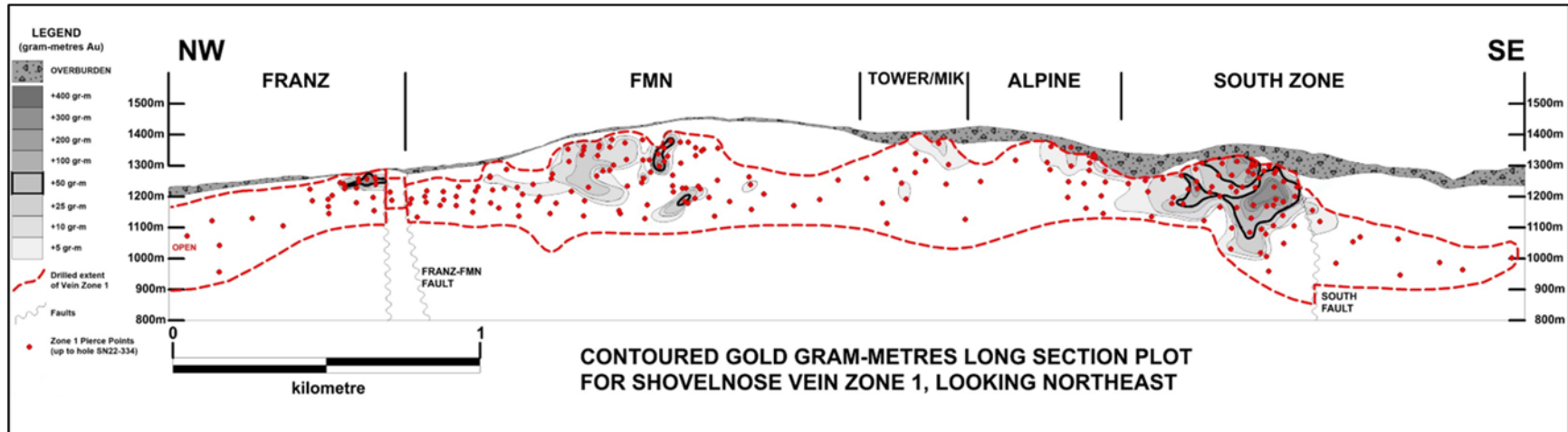
**FIGURE 7.4 SHOVELNOSE GOLD PROPERTY MINERALIZED TREND**



Coordinates in UTM NAD83 Z10N

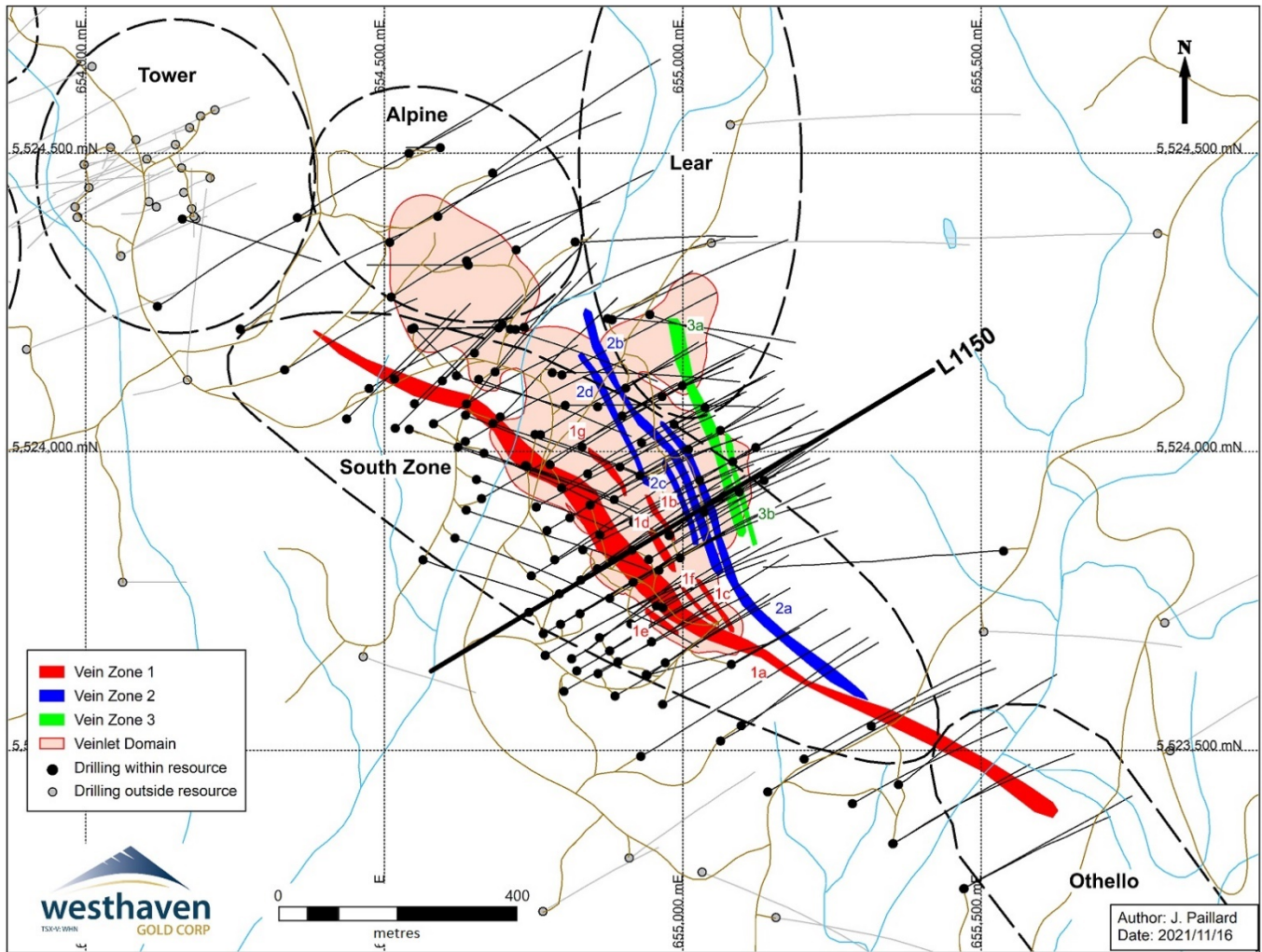


**FIGURE 7.5 SHOVELNOSE GOLD PROPERTY LONGITUDINAL PROJECTION**



Source: Westhaven (March 2023)

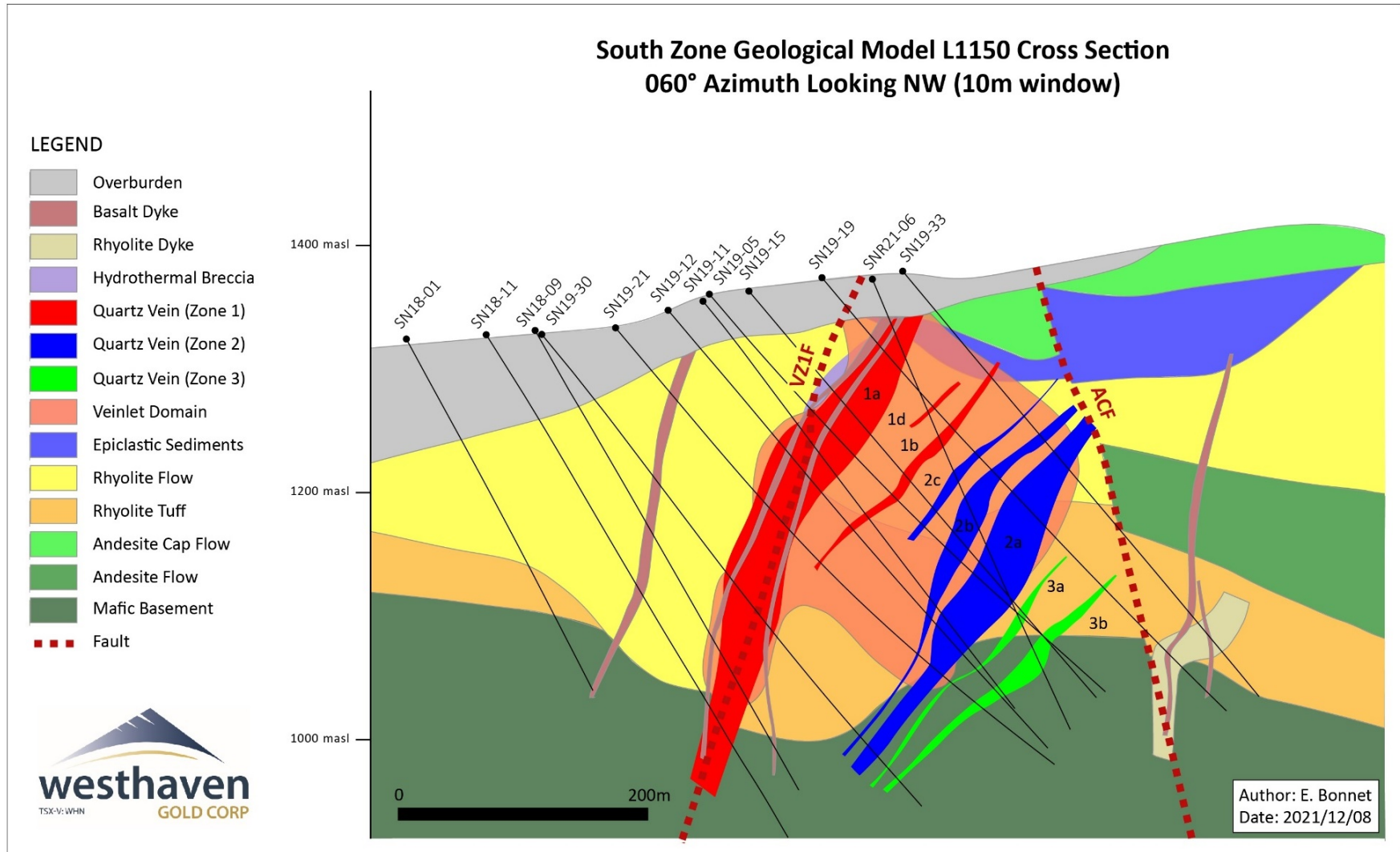
**FIGURE 7.6 MAIN MINERALIZED VEIN ZONES 1, 2 AND 3 IN PLAN VIEW OF THE SOUTH ZONE AREA**



Source: ARIS (2023)  
Coordinates in UTM NAD83 Z10N

**Figure Description:** Plan view of quartz veining for each of the three vein systems comprising the South Zone mineralization (red for Vein Zones 1a to 1g, blue for Vein Zones 2a to 2d and green for Vein Zones 3a and 3b) and the associated Veinlet Domain (pink). This is an idealized schematic showing the relative position and strike of the veins, and does not represent dip or depth/position relative to surface. Outline of the Veinlet Domain has been projected vertically to surface. Representative cross-section L1150 is shown in Figure 7.7. Areas of exploration interest used by Westhaven in past disclosure documents are also shown (black ellipses) and may be the target of further exploration (see Section 7.5). Drill hole projections used for the geological modelling and Mineral Resource estimation process are shown in solid black, with other drill holes in grey.

**FIGURE 7.7 CROSS-SECTIONAL PROJECTION THROUGH VEIN ZONES 1, 2 AND 3 AT SOUTH ZONE**



*Source: Westhaven (December 2021)*

**Figure Description:** Cross sectional projection (L1150 at 060°) through the South Zone geological model looking north-northwest and showing drill hole control, bounding faults (VZ1F and ACF), individual mineralized veins (1a, 1b, etc.), the Veinlet Domain and basalt dykes (post-mineralization). Not all veins are shown due to variability along strike (refer to Figure 7.6).

### 7.3.1.1 Vein Zone 1

Vein Zone 1, the largest vein system at the South Zone (Figure 7.8) trends northwest along Vein Zone 1 Fault (“VZ1F”), dipping roughly 70° to the southwest. Vein Zone 1 is hosted predominantly in a rhyolite flow and in an underlying rhyolite tuff horizon. The veins are cut by several post-mineralization basalt dykes and one rhyolite dyke.

The main vein zone, Vein Zone 1a, ranges in thickness from 30 m to 50 m and thins to 15 m to 20 m in the northwest. Drill hole intersections include brecciated vein with clasts composed of veining material sitting in a silicified matrix, with local occurrences of wall rock entrained within vein material. Vein Zone 1a is associated with a hydrothermal breccia envelope along strike at shallower depths, consists of predominantly m-size white chalcedony veins displaying very well-defined banded texture and hosting beige adularia and mm-scale ginguro bands (Figure 7.9 and Figure 7.10). Minor dark grey chalcedony veining with a massive texture also occurs locally on a dm to cm scale.

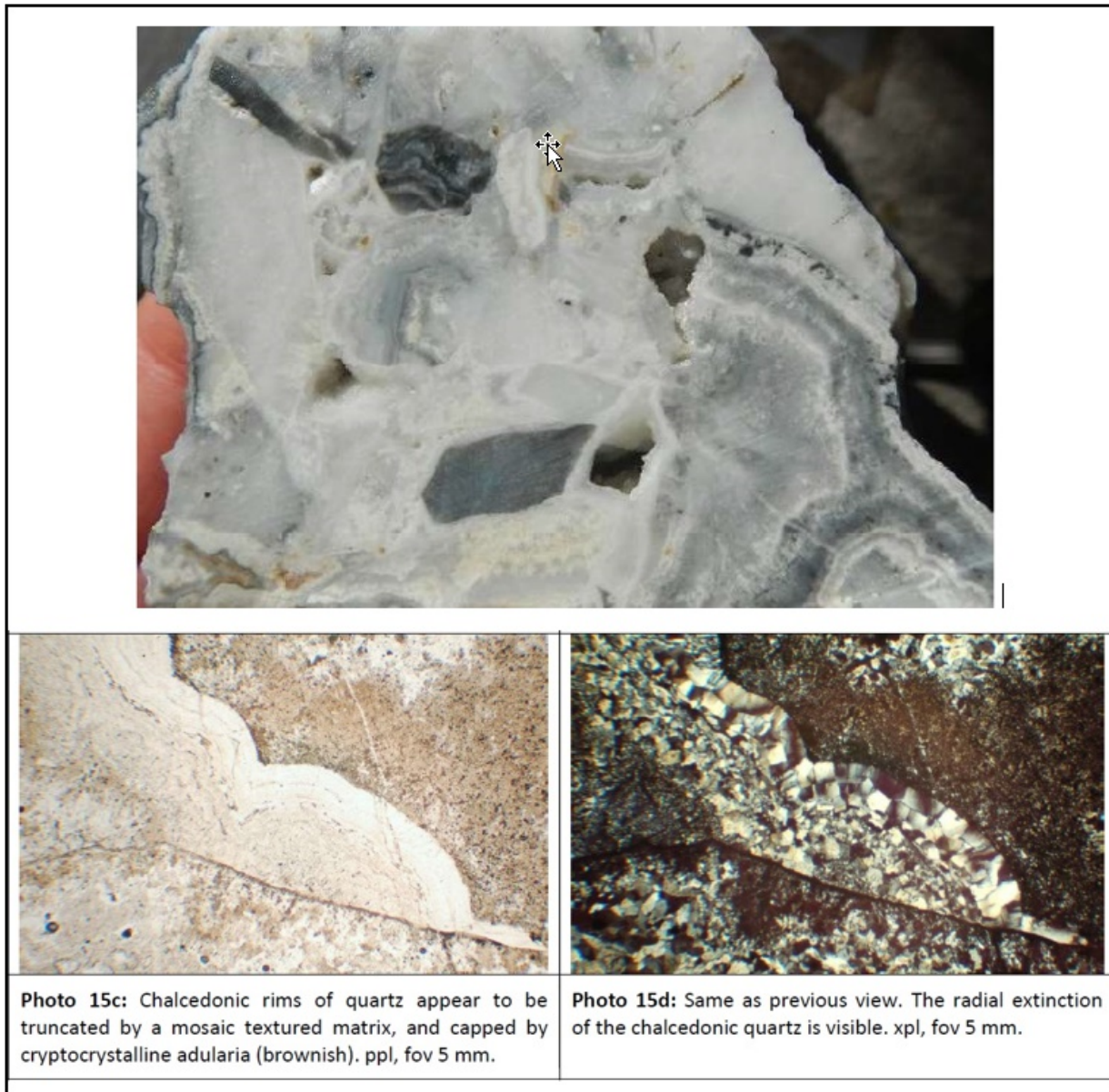
**FIGURE 7.8 VEIN ZONE 1A IN DRILL HOLE SN18-15 (178.92 M TO 192.36 M)**



*Source: Westhaven (November 2021)*

**Figure Description:** Part of Vein Zone 1a as represented in drill hole SN18-15 (boxes 13-15, 178.92 m to 192.36 m, samples X510308-X510324). The 10.0 m interval between 183.0 m and 193.0 m (samples X510313 to X5103324) assays at a weighted average of 3.80 g/t Au and 27.4 g/t Ag (range of 0.443 g/t Au to 18.3 g/t Au and 2.1 g/t Ag to 119.0 g/t Ag), including the lower grade 1.93 m interval of rhyolite breccia from 187.82 m to 189.8 m.

**FIGURE 7.9 VEIN ZONE 1A IN DRILL HOLE SN18-15 (AT 205.0 M)**



*Source: Westhaven (November 2021, after Ross (2019))*

**Figure Description:** Quartz-adularia breccia vein with crustiform vein fragments in a cockade textured matrix, with bands of cryptocrystalline to fine-grained quartz (some chaledonic) and adularia. Trace amounts of <10 um pyrite, electrum and chalcopyrite are disseminated in some of the cloudy quartz-adularia bands. SN18-15 at 205.0 m - Vein Zone 1a.

**FIGURE 7.10 VEIN ZONE 1A IN DRILL HOLE SN18-21 (AT 256.9 M)**



*Source: Westhaven (November 2021, after Ross (2019))*

**Figure Description:** Multi-stage quartz-adularia vein with crustiform bands cutting an older breccia. Very fine-grained pyrite occurs in the breccia fragments and are sharply crosscut by veins with distinct dark grey bands and minute metallic crystals. There are also sulphide rims, including 1 mm to 2 mm chalcopryrite around fragments. This mineralized vein is crosscut by white quartz and minor adularia-carbonate veins. SN18-21 at 256.9 m - Vein Zone 1a.

In addition to Vein Zone 1a, there are a series of smaller zones/offshoots sub-parallel to Zone 1a. Vein Zone 1e is a small zone located in the Vein Zone 1a footwall, and Vein Zones 1c, 1d, 1f and 1g are offshoots from the Vein Zone 1a footwall. Vein Zone 1b is a small chalcedony-bearing vein situated between Vein Zone 1a and Zone 2a/2b.

### **7.3.1.2 Vein Zone 2**

Vein Zone 2 trends northwest, parallel to VZ1F and dips 50° to 60° to the southwest (Figure 7.7). There are two main vein sub-zones, 2a and 2b, that are sub-parallel and in very close proximity to each other. Thickness of both vein sub-zones varies vertically and along strike, ranging from 20 m to 50 m for the most part, thinning to 5 m to 10 m at depth and in the northwest. There is a small Vein Zone 2c in the Vein Zone 2b hanging wall, and a poorly mineralized Vein Zone 2d at depth with m-scale, predominantly white chalcedony. Stockwork veining of massive dark grey chalcedony with banded white chalcedony hosting minor beige adularia and mm-scale ginguero bands occurs predominantly at cm to dm scales. There is also a significant increase in dark grey chalcedony veining compared to Vein Zones 1 and 3 (Figure 7.11 and Figure 7.12). Vein Zones

2a, 2b and 2c are predominantly hosted in the rhyolite flow and underlying rhyolite tuff horizon, and in mafic basement at depth (heterolithic tuff, andesite tuff and andesite flow), which hosts Vein Zone 2d.

**FIGURE 7.11 VEIN ZONE 2A IN DRILL HOLE SNR21-05 (245.49 M TO 258.34 M)**



*Source: Westhaven (November 2021)*

**Figure Description:** Part of Vein Zone 2a as represented in drill hole SNR21-05 (boxes 46 to 48, 245.49 m to 258.34 m, samples C265221-C265236). The 11.33 m interval between 246.0 m and 257.33 m (samples C26522 to C265233) assays at a weighted average of 4.39 g/t Au and 11.7 g/t Ag (range of 0.10 g/t Au to 16.35 g/t Au, and 0.4 g/t Ag to 51.7 g/t Ag).

**FIGURE 7.12 VEIN ZONE 2A IN DRILL HOLE SN18-18 (AT 285.8 M)**



*Source: Westhaven (November 2021, after Ross (2019))*

**Figure Description:** Breccia textured vein that is dominantly various stages of quartz and rhyolite fragments with cockade textured quartz-adularia rims. Minute pyrite crystals occur in the rhyolite and in some of the bands, and as more breccia textured portions of the vein. Very fine-grained pyrite occurs in trace amounts with extremely fine-grained electrum in the crustiform bands within the microcrystalline quartz, and adjacent to the fibrous adularia. SN18-18 at 285.8 m - Vein Zone 2a.

### **7.3.1.3 Vein Zone 3**

Vein Zone 3 is the third main zone in the South Zone. It consists of two separate sub-parallel features, Vein Zones 3a and 3b, composed of dm to m-size white chalcedony veining with a weakly defined banded texture (Figure 7.13). Vein Zones 3a and 3b are generally thinner than Vein Zones 1 and 2, trend north-northwest, and dip to the southwest at 35° to 45°, slightly shallower than the other two vein zones (see Figure 7.7). The thickness of Vein Zones 3a and 3b tends to be more consistent both vertically and along strike than Vein Zones 1 and 2. Weakly to moderately banded white chalcedony locally hosts mm-scale ginguro bands, and with virtually no dark grey chalcedony veining (which differentiates it from Vein Zone 2). The mineralized zones are hosted in rhyolite tuff and mafic basement rocks, the latter composed of heterolithic tuff, andesite tuff and andesite flow. There is weak development of a footwall veinlet zone.



**FIGURE 7.13 VEIN ZONE 3B IN DRILL HOLE SNR21-04 (357.00 M TO 370.18 M)**



*Source: Westhaven (November 2021)*

**Figure Description:** Part of Vein Zone 3b as represented in drill hole SNR21-04 (boxes 73-75; 357.00 m to 370.18 m, samples C265034-C265053). The 5.32 m interval between 362.02 m and 367.34 m (samples C265037 to C265048) assays at a weighted average of 3.30 g/t Au and 101.1 g/t Ag (range from 0.11 g/t Au to 8.11 g/t Au, and 6.0 g/t Ag to 262.0 g/t Ag).

#### **7.3.1.4 Veinlet Domain**

The Veinlet Domain is a broad zone containing a number of irregularly distributed sheeted veins that are commonly in the range of 2 cm to 10 cm thick, and can exceed 15 cm to 20 cm (Figure 7.14). Veins within the domain consist of white to grey chalcedony veins, some well mineralized and hosting mm-scale ginguero bands. Individual veins and veinlets within this domain do not demonstrate lateral continuity, at least as currently understood. The Veinlet Domain occurs predominantly between the main vein zones (concentrated between Vein Zones 1 and 2, and between Vein Zones 2 and 3) (Figure 7.14), and is also observed in the hanging wall of Vein Zone 1a, to the northwest of the main Vein Zones (Figure 7.6) and to a smaller extent in the Vein Zone 3a/3b footwall.

**FIGURE 7.14 VEINLET DOMAIN IN DRILL HOLE SN19-15 (309.50 M TO 322.86 M)**



*Source: Westhaven (November 2021)*

**Figure Description:** Representative example within the Veinlet Domain in drill hole SN19-15 (boxes 61-63; 309.5 m 322.86 m. samples X514064-X514082). The 8.91 m interval between 312.27 m and 321.18 m (samples X514068 to X514077) assays at a weighted average of 0.43 g/t Au and 2.5 g/t Ag (range of 0.06 g/t Au to 2.44 g/t Au, and 0.6 g/t Ag to 16.8 g/t Ag).

## 7.4 MINERALIZATION

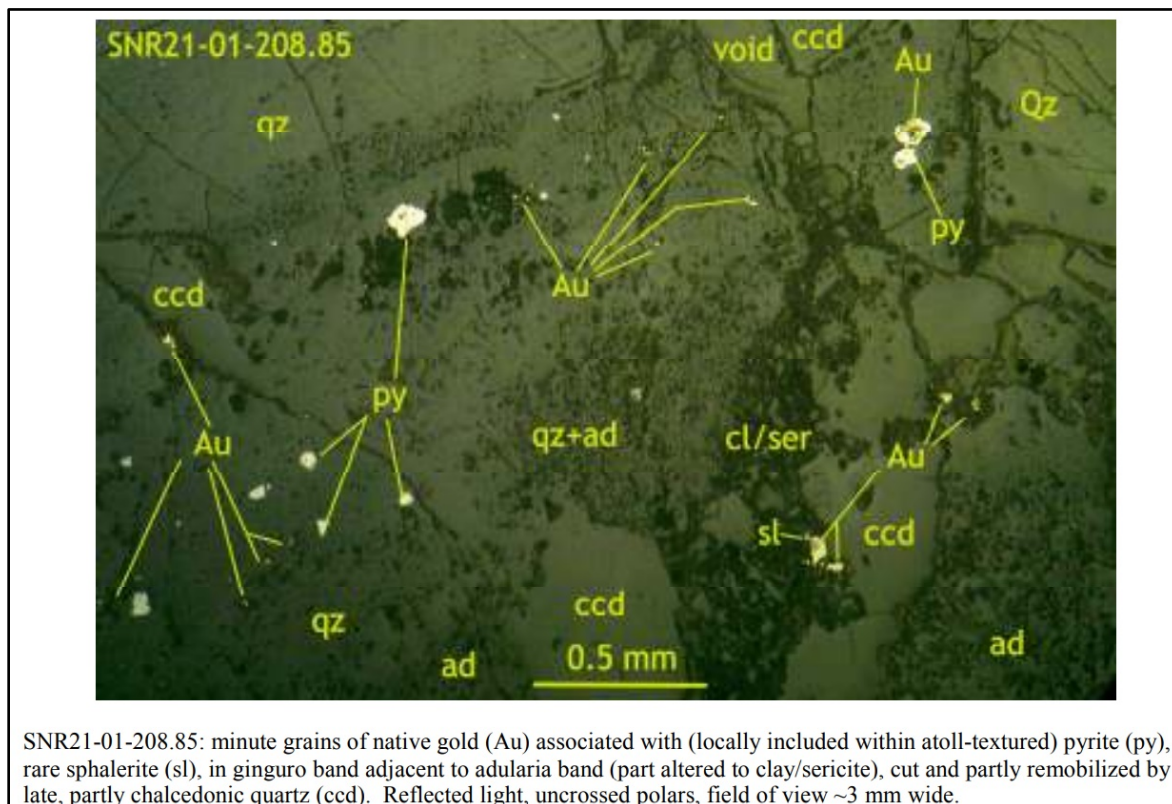
Mineralization in the Vein Zones of the South Zone is dominated by ginguero, a cryptocrystalline, unsorted, amalgamated sulphide dust that precipitates as black, mm-scale bands along crustiform and colloform bands in vein zones (Izawa *et al.*, 1990). Ginguero typically occurs as black bands, and locally may be discreet amalgamations of crystals. Sulphides present are chalcopyrite, electrum, naumannite, sphalerite, galena, pyrite and marcasite, with minor amounts of acanthite, aguilarite, tetrahedrite, greenockite (or hawleyite), Au-Ag selenide, hessite, pyrrargite and miargyrite. Pyrite ± marcasite occur in association with veining and are generally observed peripheral to main vein zones and limited in extent. Visible massive or crystalline sulphides are very rare at the South Zone. Gold grades in ginguero-rich zones at the South Zone commonly exceed 30 g/t; for example, drill hole SN19-01 intersected 39.3 g/t Au over 12.66 m.

Mineralization textures observed at the South Zone are typical of epithermal vein systems with crustiform-colloform chalcedony and quartz textures. Crustiform components are the successive bands oriented parallel to vein walls, defined and distinguished by contrasting mineralogy, texture,

and (or) colour. This banding is due to fluctuating contents of metals in solution and fluctuating fluid conditions during precipitation, caused by periodic boiling. The colloform components are fine rhythmic bands with a lobed, reniform (kidney-shaped) surface, and commonly an internally radiating form. Strong surface tension of the silica gel is responsible for the lobed, reniform external surface that is characteristic of colloform veins. Cockade textures are also observed locally and the terminology is restricted to crustiform bands that surround isolated rock (breccia) fragments. The comb texture is manifest by open-space growth and unidirectional growth of individual crystals nucleated on vein wall(s), giving rise to syntaxial or monotaxial veins. Moss texture is a recrystallization texture, whereby an original spheroidal gel texture recrystallized to chalcedony or quartz, and is indicative of very high degrees of silica supersaturation.

A preliminary SEM study of the mineralization (Ross, 2019) suggests that the native gold has variable (unquantified) Au:Ag ratios, and appears to be Ag-rich (Figure 7.15). In addition to native gold, the only other gold-bearing phase identified is electrum (Figure 7.16). The electrum is intergrown with pyrite, chalcopyrite, sphalerite, galena and a variety of sulphosalts in trace amounts. The silver selenide naumannite ( $\text{Ag}_2\text{Se}$ ) is the most common sulphosalt observed with electrum. Aguilarite ( $\text{Ag}_4\text{SeS}$ ) was also observed. Native silver was observed enclosing electrum. These minerals all occur as complex composite grains generally <50  $\mu\text{m}$  in size and commonly much finer grained. Numerous grains <1  $\mu\text{m}$  in size occur around larger grains, in the ginguro bands, and in the more diffuse clots.

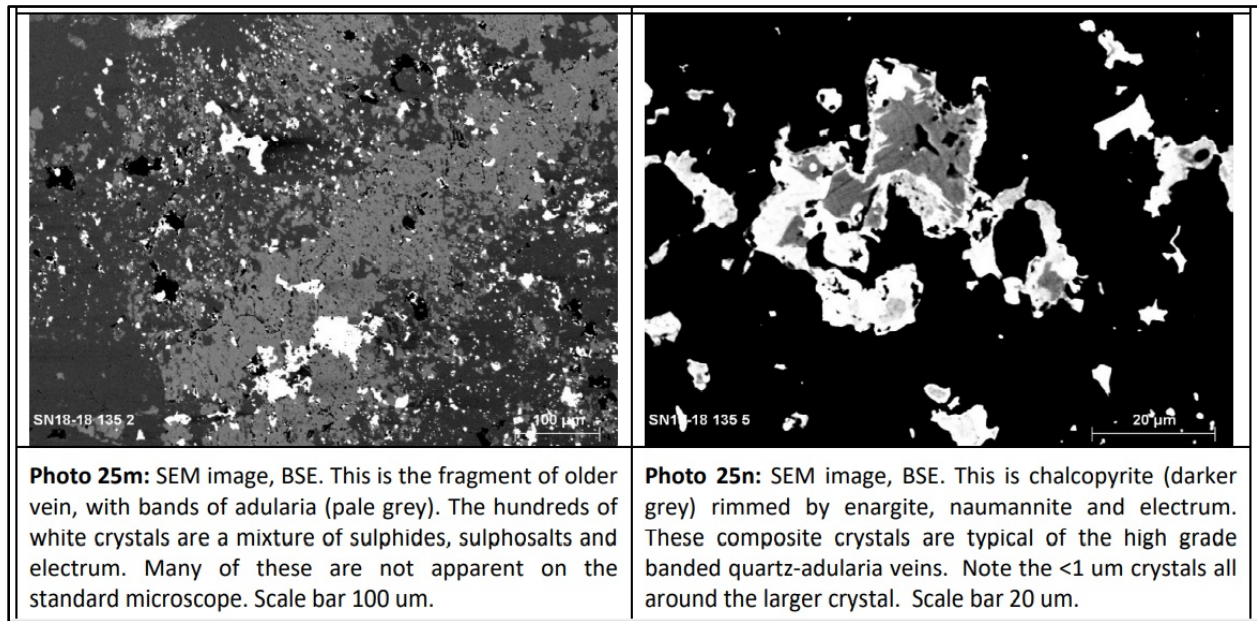
**FIGURE 7.15 SOUTH ZONE MINERALIZATION – NATIVE GOLD**



*Source:* Westhaven website (November 2021)

*Figure Description:* SNR21-01, 208.85 m (Vein 1a) – Native gold in polished thin section (South Zone cross-section 1125).

## FIGURE 7.16 SOUTH ZONE MINERALIZATION – ELECTRUM



*Source:* Ross (2019)

*Figure Description:* SN18-18, 135 m (Vein 1a) SEM image with electrum and associated mineral phases (South Zone cross-section 1100).

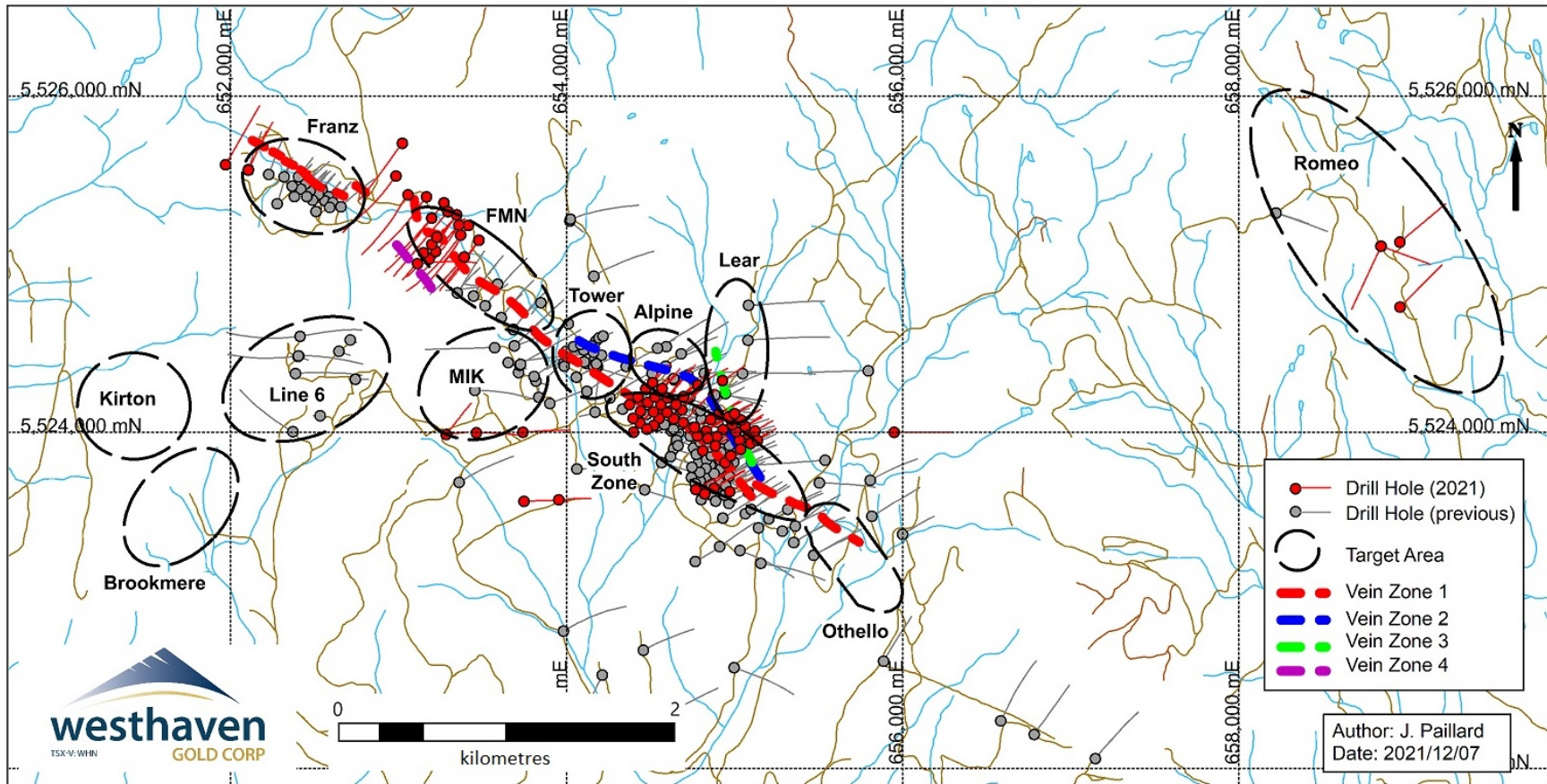
Galena can contain a small amount of silver, or possibly includes a silver phase too fine-grained to observe. Enargite ( $\text{Cu}_3\text{AsS}_4$ ) is the main sulphosalt phase. Eckerite ( $\text{Ag}_2\text{CuAsS}_3$ ) and a silver telluride, possibly hessite ( $\text{Ag}_2\text{Te}$ ), were also observed.

In addition to the precious metal mineral phases, fluorapatite was observed to be intimately intergrown with sulphides, specifically pyrite in several samples. Selenium, mostly the arsenic end-member with minor antimony substitution in a few analyses, occurs in naumannite and agularite with electrum throughout the system. Vein carbonate is ferroan dolomite, with very minor Mn content. Clay and sericite occur as <10 μm size masses of scaly flakes interstitial to quartz in cloudy bands.

### 7.5 OTHER MINERALIZED ZONES AND SHOWINGS OF INTEREST

The numerous Shovelnose mineralized zones not included in the current Mineral Resource Estimate are shown in Figure 7.4 and Figure 7.17, and described below. With additional exploration and drilling, some or all of these zones could be potentially included in future Mineral Resource estimations.

**FIGURE 7.17 LOCATION OF OTHER ZONES OF INTEREST**



Source: Westhaven (December 2021)

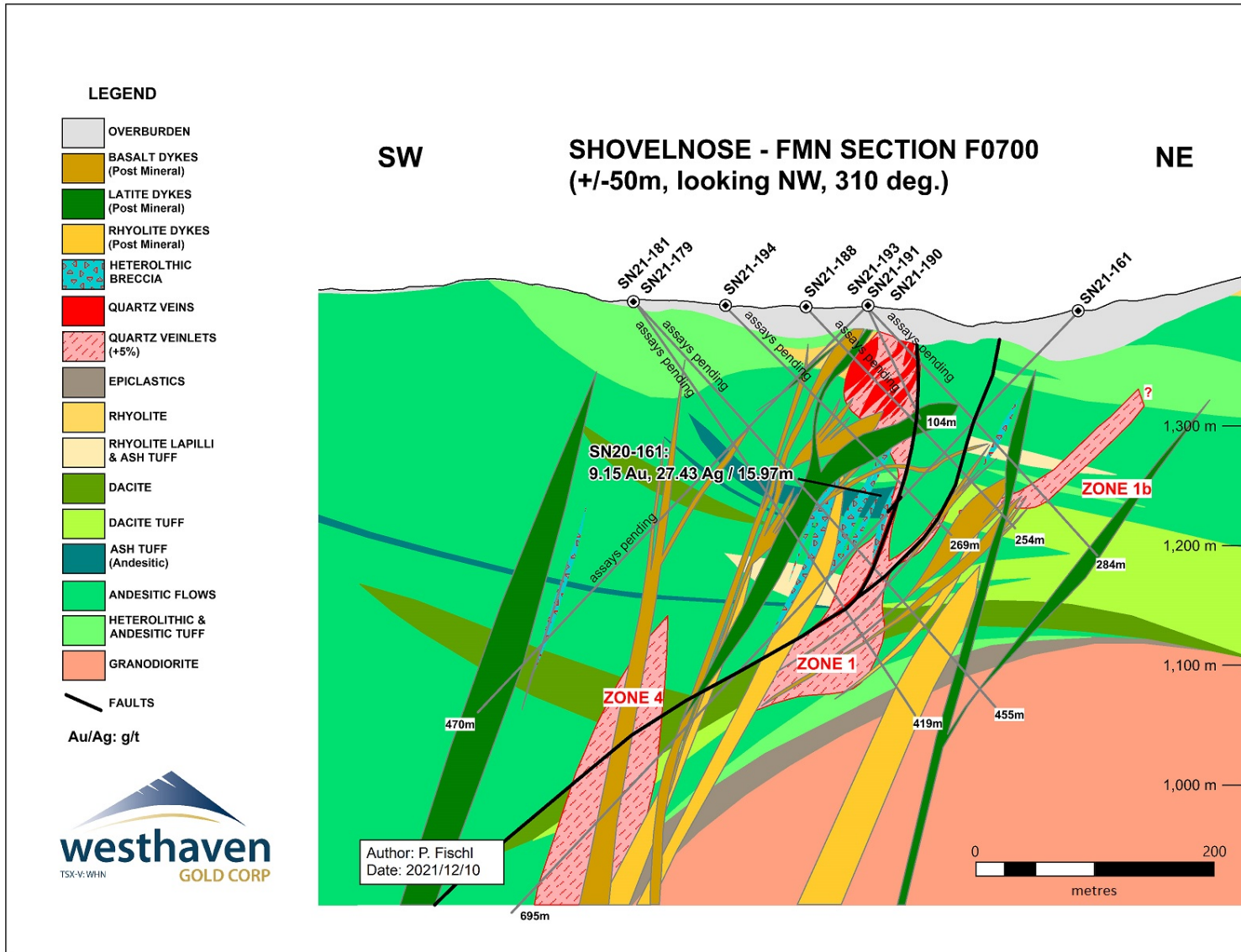
### **7.5.1 Tower Zone**

The Tower Zone is located northwest of the South Zone and west of the Alpine Zone (Figure 7.17), approximately 1,200 m south of the cell/radio tower on the summit of Shovelnose Mountain. The Tower Zone consists of a near-surface flat-lying permeable lithology consisting of limonite-stained felsic crystal lithic tuffs that have been intensely silicified from surface to a depth of approximately 60 m. These tuffs are underlain by non-mineralized heterolithic tuffs and rhyolite flows. Silicification is pervasive and (or) localized along fractures and vuggy/drusy cavity fillings to the west and occurs within stockwork and veins to the east. Pyritic quartz veins, occurring in the southern portion of the Tower Zone and exposed at surface, have returned a maximum assay value of 0.51 g/t Au (sample 38289; Stewart and Gale, 2006).

### **7.5.2 FMN Zone**

The FMN (Forget Me Not) Zone is located northwest of the Tower Zone (Figure 7.17). The FMN Zone was identified initially during prospecting activities undertaken by a past operator (Strongbow) as being of potential exploration interest based on local weak soil anomaly. Westhaven drilling in 2020 at the FMN Zone returned 19.9 m of 2.62 g/t Au with 139.75 g/t Ag (271.2 m to 291 m) from drill hole SN20-139. Interpreted cross-section 0700 is shown in Figure 7.18. Additional drilling was completed in 2021 and FMN was the focus of the 2022 drill program, as described in Section 10 of this Report.

**FIGURE 7.18 FMN CROSS-SECTIONAL PROJECTION 0700**



Source: Westhaven (December 2021)

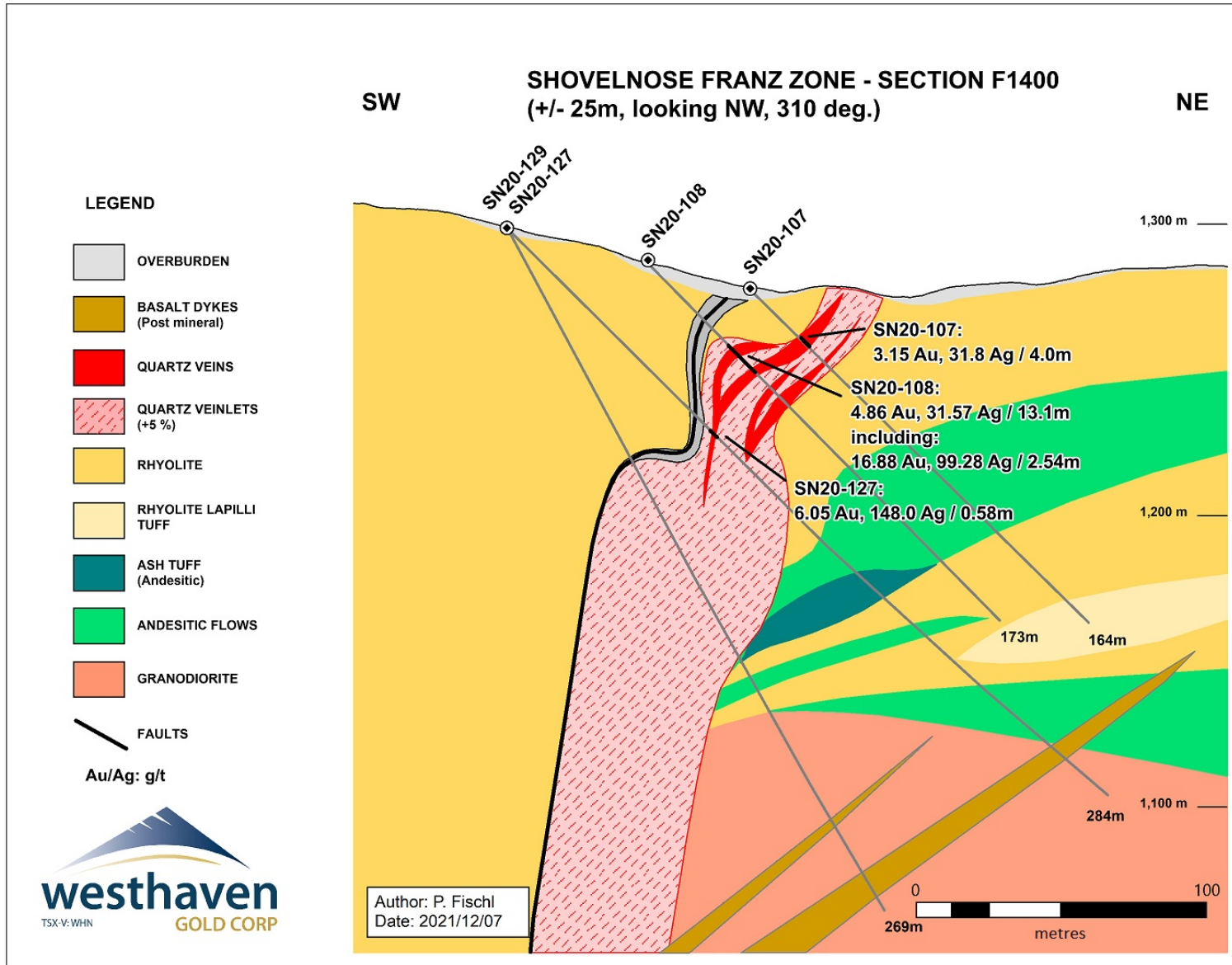
Note: Drilling along FMN cross-section 0700 is interpreted to have intersected Vein Zones 1 and 4 mineralization.

### 7.5.3 Franz Zone

The Franz Zone is located to the northwest of the FMN Zone (Figure 7.17), 2.8 km west-northwest of the South Zone. The Franz Zone was discovered by prospecting in August 2020. Surface exposures represent an 80 m x 20 m outcrop of quartz veined rhyolite oriented at 110°/290°. A single grab sample (V074705) of outcrop returned 51.1 g/t Au and a second sample (V074706) returned 4.19 g/t Au. The Franz Zone outcrops at an elevation of 1,285 m and the mineralization is analogous to the dominantly rhyolite-hosted, gold-silver bearing horizon at the South Zone. This outcrop may represent the northwestward continuation of Vein 1, which suggests a total strike length of at least 3.7 km for the Zone. A 2020 drill highlight from the Franz Zone is 34.1 m of 2.07 g/t Au with 16.5 g/t Ag (37.1 m to 71.2 m) in drill hole SN20-108. An interpreted cross-sectional projection of the Franz Zone is shown in Figure 7.19.



**FIGURE 7.19 FRANZ CROSS-SECTIONAL PROJECTION 1400**



Source: Westhaven (December 2021).

#### 7.5.4 Mik Zone and Line 6 Zone

The Mik and Line 6 Zones are located to the west of the main mineralized trend (Figure 7.17). These two Zones are listed in the British Columbia’s Ministry of Energy and Mines’ mineral inventory database (“MINFILE”) as mineral occurrences on the Shovelnose Gold Property (Table 7.1).

<b>Property</b>	<b>Number</b>	<b>Name</b>	<b>Status</b>
Shovelnose	092HNE308	Line 6	Showing
	092HNE309	Mik	Showing

The Mik Zone, located 400 m to the west of the Tower Zone (see Figure 7.17), is defined by a 200 m wide zone of gold mineralization at surface, including gold in-soil samples >8.7 ppb Au extending 200 m to the north and 50 m south of this Zone. Narrow gold-bearing quartz veins at the Mik Zone are hosted in heterolithic, matrix-supported, unsorted crystal lithic tuff. Chip samples from rock trenches at the Mik Zone showing yield composite gold values of 2.73 g/t Au over 3.7 m, 0.84 g/t Au over 14.75 m, and 2.97 g/t Au over 3.0 m.

The Line 6 Zone is located approximately one km west of the Mik Zone (see Figure 7.17) and is hosted within a crystal lithic tuff containing siliceous fragments. Line 6 Zone is defined by a 400 m wide, approximately east-west striking trend of gold in-soil anomalies (>18.3 ppb Au), surrounded by a 600 m x 400 m outer zone of anomalous gold in-soil geochemistry (>8.7 ppb Au). Mineralization occurs in weakly colloform-banded to massive quartz veins and in vein breccias that vary in thickness from 0.5 cm to 20 cm.

#### 7.5.5 Brookmere and Kirton Showings

The Brookmere Showing, located approximately 800 m southwest of the Line 6 Zone (Figure 7.17), consists of several extensive quartz vein systems that are exposed in proximity to, and aligned sub-parallel with, the syenite dykes in the southwest region of the Property. The adjacent Kirton Showing comprises extensive hydrothermal brecciation exposed in outcrop.

Significant gold or silver analyses have not been returned from surface samples in these areas. Initial drilling in 2023 intersected veining and hydrothermal brecciation typical of an epithermal system, but a visual assessment of the drill core and XRF readings suggest the optimal paleodepth was not intersected. Analytical data, including petrography, were not available as of the effective date of this Report. Westhaven plans to reassess these showings once results have been received and reviewed.

#### 7.5.6 Romeo Zone

The Romeo Zone is situated approximately 4 km east of the South Zone, in the central eastern part of the Property (Figure 7.17). The Romeo Zone (referred to previously as the ED or EZ Zone)

consists of an arsenic-in-soil anomaly associated with extensive silica alteration in a rhyolite tuff, potentially including hydrothermal brecciation. It occurs along a 1.2 km to 1.5 km long north-northwest trending structural corridor. Significant gold or silver analyses have not been returned from limited surface sampling, or from previous, very limited drilling. The area is still under evaluation.

### **7.5.7 Othello Zone**

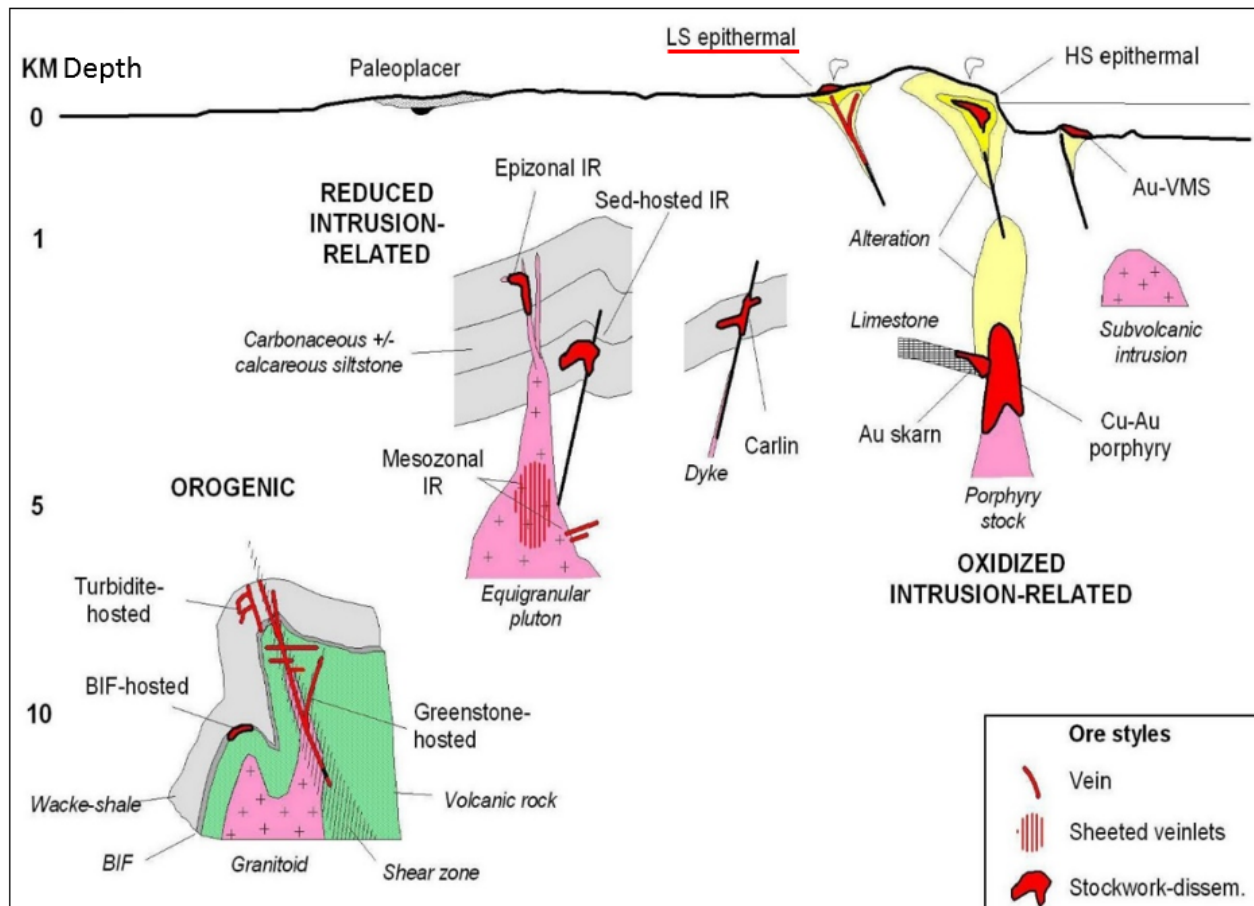
The Othello Zone lies immediately southeast of the South Zone and hosts the interpreted extension of Vein Zone 1a (Figure 7.6 and Figure 7.17). Surface occurrences of hydrothermal brecciation and quartz veining identified during past field programs may warrant additional work, potentially including drilling to test the up-dip extent of Vein Zone 1a, the possible presence of Vein Zones 2 and 3, and to better evaluate the surface occurrences themselves.

## 8.0 DEPOSIT TYPES

Mineralization at the Shovelnose Gold Property - South Zone is typical of low-sulphidation epithermal systems in subaerial volcanic rocks.

Gold occurs as a primary commodity in three main classifications, each including a range of specific deposit types with common characteristics and tectonic settings (Poulsen *et al.*, 2000). These classifications are: 1) “orogenic” including vein-type deposits formed during crustal shortening of volcanic and (or) sedimentary host rocks; 2) “intrusion-related” associated with felsic intrusions sharing an Au-Bi-Te-As metal signature; and 3) “oxidized intrusion-related” including porphyry, skarn, and high and low-sulphidation epithermal deposits, all associated with high-level oxidized porphyry stocks in magmatic arcs. Additional important deposit types such as Carlin, Au-rich VMS, and low-sulphidation are viewed by different authors either as stand-alone models or as members of the broader oxidized intrusion-related class (Figure 8.1).

**FIGURE 8.1 SCHEMATIC CROSS-SECTION OF THE MAIN GOLD SYSTEMS AND THEIR CRUSTAL DEPTHS**



Source: Liard (2021), from Poulsen *et al.* (2000)

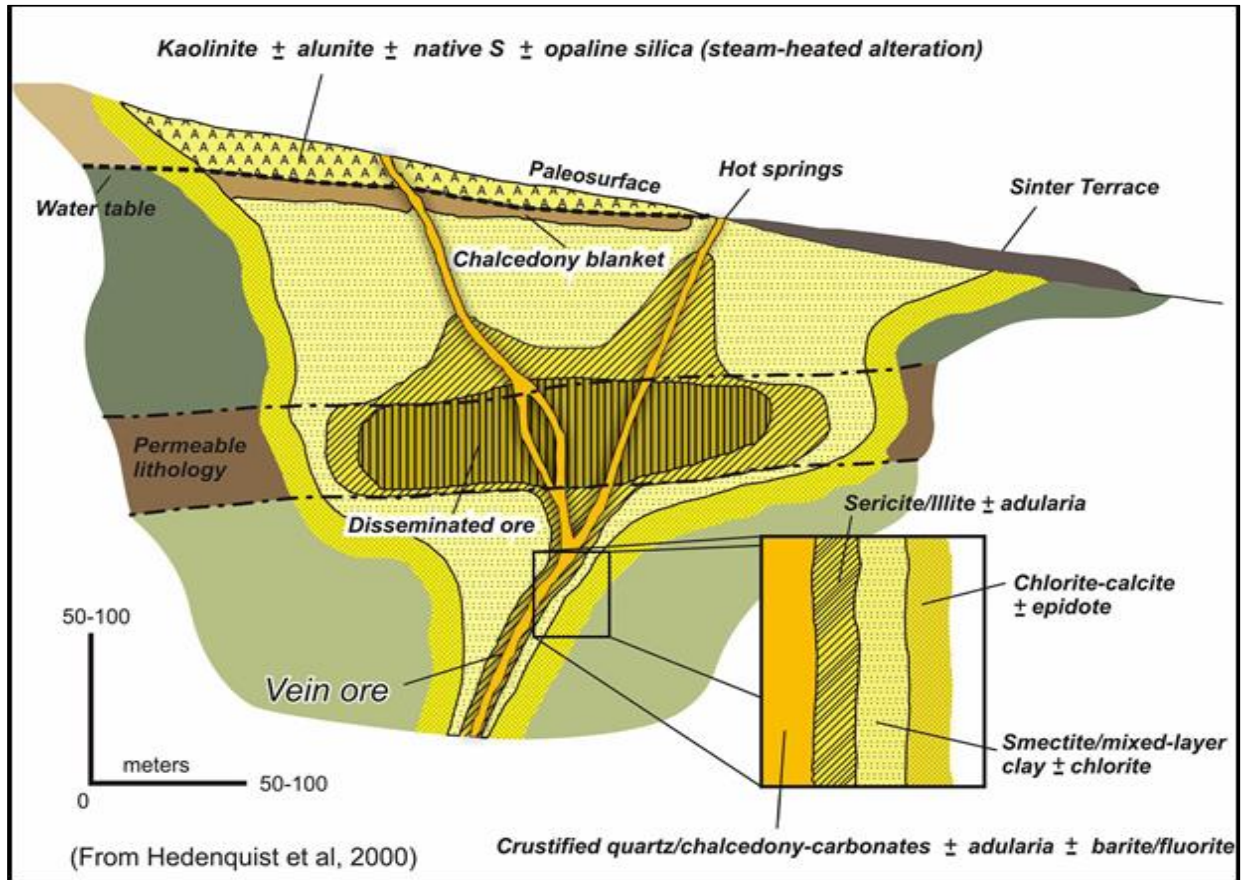
Low-sulphidation epithermal deposits are precious metal-bearing quartz veins, stockworks and breccias formed from boiling of near-neutral pH chloride waters. During formation, gold is dissolved as a thiosulphide complex in hydrothermal fluids flowing upwards along central structures (faults or shear zones) that branch outwards near surface. A reduction in ambient pressure or pH of the fluid produces boiling (“boiling zone”), which results in breakdown of the thiosulphide complex and precipitation of the gold. Such boiling-related gold mineralization takes place at depths ranging from near-surface hot spring environments to approximately one-km in depth.

Vein mineralogy in low-sulphidation epithermal systems is characterized by gold, silver, electrum and argentite with variable amounts of pyrite, sphalerite, chalcopyrite, galena, tellurides, selenides, and rare tetrahedrite and sulphosalt minerals. Cruciform banded quartz veining is common, typically with interbanded layers of sulphide minerals, adularia and (or) illite. At relatively shallow depths, the bands are colliform in texture and mm-scale, whereas at greater depths, the quartz becomes more coarsely crystalline. Lattice textures, composed of platy calcite and its quartz pseudomorphs, indicate boiling. Breccias in veins and subvertical pipes commonly show evidence of multiple episodes of formation. Quartz, adularia, illite and pyrite alteration commonly surround mineralization; envelope width depends on host rock permeability. Propylitic alteration dominates at depth and peripherally.

Regional structural control is important in localization of low-sulphidation epithermal deposits. Brittle extensional structures (normal faults, fault splays, ladder veins) are common. Veins typically have strike lengths in the range of hundreds to thousands of metres; productive vertical extent seldom exceeds a few hundred metres and is closely related to elevation of paleo-boiling. Vein widths vary from a few cm to tens of m. High-grade mineralization is commonly hosted by dilational zones in faults at flexures, splays and in cymoid loops.

Low-sulphidation epithermal gold deposits share a number of characteristics. Regional settings are intra- to back-arc and rift-related extensional with bimodal volcanic suites (basalt-rhyolite). Gold mineralization is hosted in extensional to strike-slip faults, structural intersections and, in some places, rhyolite domes. Veining is typically banded where Au<Ag with gold pathfinder (Zn, Pb, Cu, As, Hg) signatures. Alteration mineralogy shows lateral zoning from proximal quartz-chalcedony-adularia in mineralized veins to illite-pyrite to distal propylitic alteration assemblages (Figure 8.2).

**FIGURE 8.2 ALTERATION OF LOW SULPHIDATION DEPOSITS**



Source: Liard (2021), from (Hedenquist et al., 2000)

Vertical zoning in clay minerals varies from shallow, low-temperature kaolinite-smectite assemblages to deeper, higher-temperature illite. Host rock composition can also cause variations in the alteration mineral zoning pattern. Examples of low-sulphidation gold deposits include the Hishikari (Japan), Round Mountain (Nevada), Pajingo (Australia), and Cerro Vanguardia (Argentina) Mines (Hedenquist *et al.*, 2000; Izawa *et al.*, 2001; Robb, 2005).

## **9.0 EXPLORATION**

### **9.1 INTRODUCTION**

Exploration activities on the Shovelnose Gold Property by Westhaven and previous operators has been ongoing since 1990, and have focused on gold. This section summarizes Westhaven's results for all exploration work to date and integrates historical work where surveys overlap. All units used in this Section are in metres ("m") or centimetres ("cm") unless otherwise specified. Geographic coordinates utilize UTM Zone 10N NAD83 datum. Sample lengths are not indicative of true thickness.

A summary of all exploration activities completed on the Shovelnose Gold Property to date is included in Table 9.1. Note that the exploration sampling, geophysics and trenching activities are described in this Section, whereas the drilling activities are described in Section 10 of this Report.

### **9.2 SILT, SOIL AND ROCK GEOCHEMISTRY**

Silt, soil, and rock geochemistry sampling programs have been completed by historical operators and Westhaven (Table 9.1 and Figure 9.1). Each of these programs is summarized below.

#### **9.2.1 Silt Geochemistry**

A total of 121 historical silt samples were collected from streams situated throughout the Property. Inconsistencies noted in the historical results, and from 12 check samples collected in 2020, led Westhaven to initiate a property-wide stream sediment sampling program in 2021 that was completed in 2022 (Figure 9.1). The combined programs resulted in the collection of an additional 268 silt samples, each of which was divided by sieving into five fractions and submitted for analyses. Laboratory analytical results support the presence of gold in silt anomalies, both up-ice/-stream from the known low sulphidation epithermal mineralization and from new areas where there is no known up-ice/-stream mineralization. As of the effective date of this Report, Westhaven is in the process of following-up the anomalous responses through a program of mineral prospecting and additional sampling.

**TABLE 9.1  
SHOVELNOSE EXPLORATION SUMMARY**

Table 9.1 Shovelnose Exploration Summary																	
Year	Company	Mapping	Sampling				Geophysics (line-km)								Trench	Drilling	
			Silt	Soil	Rock	Drill Core*	Airborne Magnetics	CSAMT	Ground Magnetics	IP	LiDAR (ha)	HVSR	DC Res	VLF-EM		Drill Holes	Metres**
2001-2002	Almaden Minerals	Regional	41	14	22												
2006	Strongbow Exploration	1:10,000	52	57	57												
2007		1:10,000/1:2,500		3,838	162		308 ***								3-17 m		
2008		1:10,000/1:2,500		272	243										7-189 m		
2009		1:10,000		14	193										18-338 m		
2010				363	43				23.2								
2011		Westhaven Gold		28	972	198	635								5-147 m	7	605.6
2012						534			5.8	5.8					5	778.5	
2013	1:2,500			41	42	538			3.8	3.8					8	1043	
2014						341									6	662.4	
2015	1:2,500					516			23.5	12.8	1,960		55		5	1,408	
2016						1,154									9	1,902	
2017	1:10,000				29	1,689			11.1						7	3,269	
2018				270		4,266	2,376 ****		31.8			6			22	8,613	
2019				4,897	216	9,506			326.9		842		20.3		49	21,849.3	
2020	local scales		12	210	285	18,578		55	262		17,625		23.5		102	43,145	
2021	local scales		133	136	272	17,643									103	40,072.4	
2022			135		288	17,818					7,830		5.6		142	38,190.9	
2023						1,879									13	4,303.2	
<b>Total</b>				<b>401</b>	<b>11,084</b>	<b>2,050</b>	<b>75,097</b>	<b>2,684</b>	<b>55.0</b>	<b>688.1</b>	<b>22.4</b>	<b>28,257</b>	<b>6</b>	<b>49.4</b>	<b>55</b>	<b>33-691 m</b>	<b>478</b>

Source: Westhaven (2023)

Notes: \* Includes 49 samples for SN21-194 and 157 samples for SN21-195 taken in 2022 and 54 samples for SN22-335 taken in 2023.

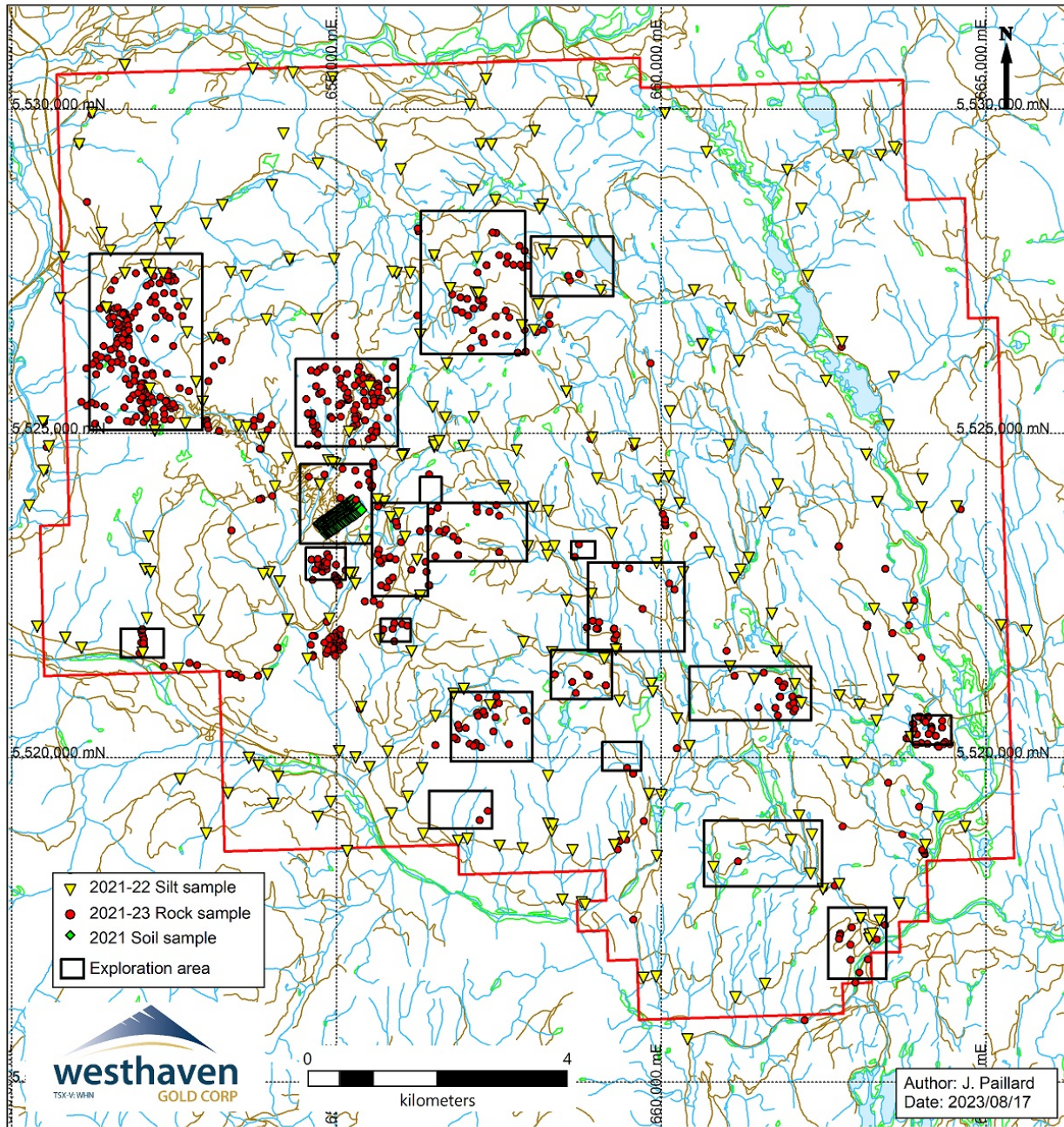
\*\* Includes 429 m drilled from SN21-194 and SN21-195 in 2022, and 137.49 m drilled from SN22-335 in 2023.

\*\*\* Helicopter-borne magnetics and electromagnetics.

\*\*\*\* Helicopter-borne magnetics and radiometrics.



**FIGURE 9.1 2021 STREAM SILT SAMPLES AND EXPLORATION AREAS**



*Source: Westhaven (2023)  
Coordinates in UTM NAD83 Z10N*

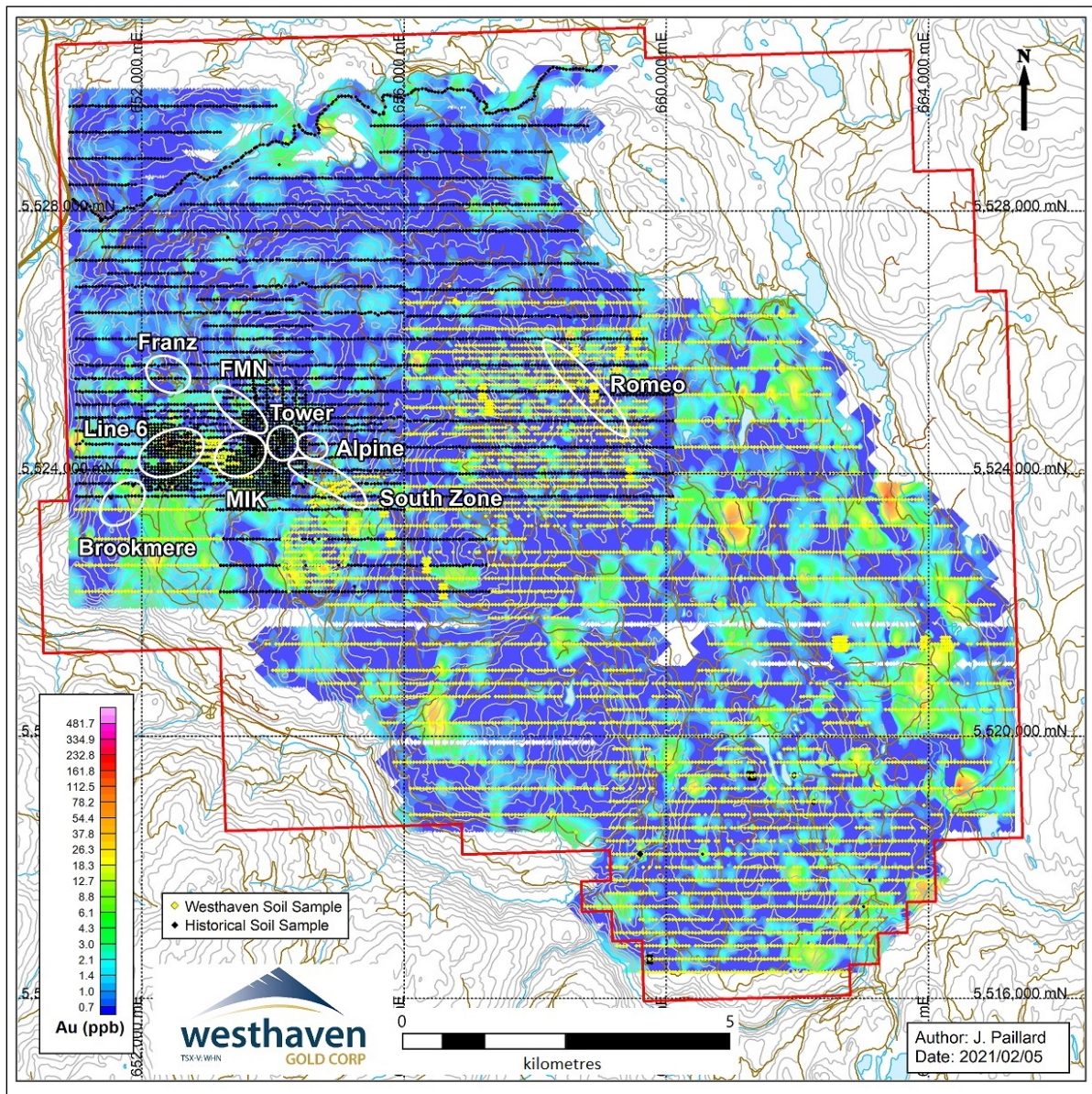
### 9.2.2 Soil Geochemistry

A total of 10,948 soil samples (6,390 by Westhaven) had been taken over most of the Property by various operators prior to 2021, representing about 14,090 ha of regional coverage. All sample results were incorporated into a common database for Property-wide coverage.

Analytical results for the soil samples were gridded and contoured (Figure 9.2). Numerous occurrences of anomalous gold-in-soils (>18 ppb Au) were delineated by the survey. The most prominent anomalies occur over the known gold zones in the mid-western portion of the Property, with minor anomalies trending southward (downslope) from those zones. It should be noted that, likely due to overburden depths, gold anomalies were not observed over the South Zone.

This hypothesis was further tested through Westhaven’s collection of 136 detailed soil samples (see Figure 9.1 and Figure 9.2) over known South Zone mineralization in 2021. Gold values ranged from below detection limit to a maximum of 22 ppb (average 9.9 ppb) and did not show any correlation with surface projections of mineralized vein systems.

**FIGURE 9.2 GOLD-IN-SOIL GEOCHEMISTRY**



*Source: Westhaven (2021)  
Coordinates in UTM NAD83 Z10N*

### 9.2.3 Rock Geochemistry

A total of 2,168 rock samples (1,448 by Westhaven) were collected from prospective outcrops, subcrops, and float on the Property prior to the effective date of this Report. This total includes 118 samples collected to date in 2023 as part of an ongoing surface rock geochemical program. Surface exploration efforts from 2021 to 2023 focused on specific areas of interest identified from a review of historical data (see Figure 9.1). Laboratory assay results for most 2023 work are pending as of the effective date of this Report. To date, outcrop samples containing >0.5 g/t Au were generally restricted to the Line 6 and Mik Zones, with one sample containing 0.52 g/t Au located in the eastern portion of the Property. Rock sampling in the Line 6 and Mik Zones contained six samples >10 g/t Au with the highest-grade sample containing 119.4 g/t Au from a boulder found in Tower Creek, approximately 500 m south of the Mik Zone.

In August 2020, Westhaven reported nine grab samples taken in the newly discovered Franz Zone. Analytical results of grab samples taken in the area are listed in Table 9.2. The Franz Zone, a surface discovery made in 2020, had one sample of outcropping quartz vein returning 51.1 g/t Au and 165 g/t Ag. Additional surface sampling at the Franz Zone outcrop is planned for 2023.

<b>Sample</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>	<b>Outcrop / Float</b>
V074702	0.34	33.4	Outcrop
V074703	1.47	10.8	Float
V074704	0.52	3.88	Outcrop
V074705	51.1	165	Outcrop
V074706	4.19	52.5	Outcrop
V074707	0.04	0.65	Outcrop
V074708	34.9	120	Float
V074709	0.05	1.23	Outcrop
V074710	1.53	14.75	Outcrop

*Source: Laird (2021)*

From drill core geochemistry, it has been determined that the most reliable pathfinder elements associated with gold and silver mineralization are arsenic (pyrite, marcasite), molybdenum (ginguro, pyrite, marcasite), selenium (naumannite - silver selenide), and copper (chalcopyrite). Drill core results are used to guide interpretation and prioritization of the surface sampling program.

### 9.3 GEOPHYSICS

Airborne and ground geophysical surveys have been completed by historical operators and Westhaven.

### **9.3.1 Airborne Geophysical Surveys**

Two airborne geophysical surveys of the Property have been completed to date; one by a previous operator in 2007 (helicopter magnetics and electromagnetics) and a larger survey by Westhaven in late 2018. The second survey, completed by Precision Geosurveys, utilized helicopter magnetic (Scintrex CS-3 cesium magnetometers in a 3-axis stinger configuration) and radiometric (PicoEnviroTech GRS-10 Gamma Spectrometer with 16.8 litres of downward looking crystals) equipment. Approximately 2,376 line-km of data were collected along east-west (090°/180°) oriented lines at 75 m intervals and a mean terrain clearance of 42.7 m. North-south tie lines were flown at 750 m intervals for survey control and levelling purposes. This survey covered the entire extent of the Property at the time of the work (Figure 9.3). Westhaven has not investigated the northeast corner of the current Property by airborne geophysics.

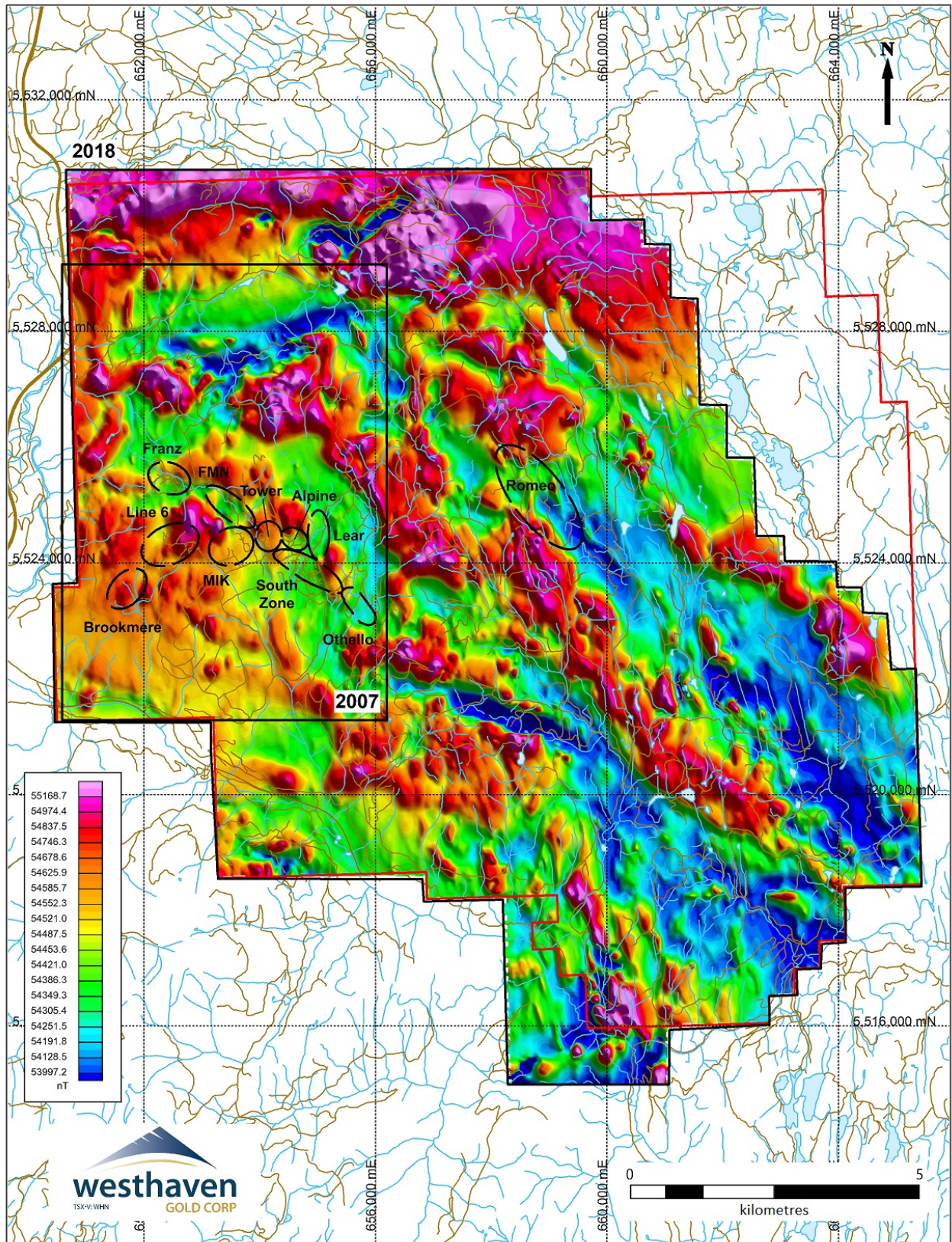
The airborne magnetics (Figure 9.3) shows broad correlation of magnetic lows with known mineralized zones. These magnetic lows are targets for follow-up ground magnetic surveys. The radiometric survey (results not shown) was inconclusive.

### **9.3.2 Ground Magnetics**

A total of 688 line-km of ground magnetic surveys have been completed in eight phases from 2010 to 2020. Of that total, 23.2 km were collected historically by Strongbow in 2010. The most recent work (2020) was completed for Westhaven by Peter E. Walcott and Associates (Coquitlam BC), who collected 262 line-km of data along east-west oriented survey lines. Ground magnetic data from 2010 to 2020 have been leveled and compiled into a single composite total field (“TF”) ground magnetic database as illustrated in Figure 9.4.

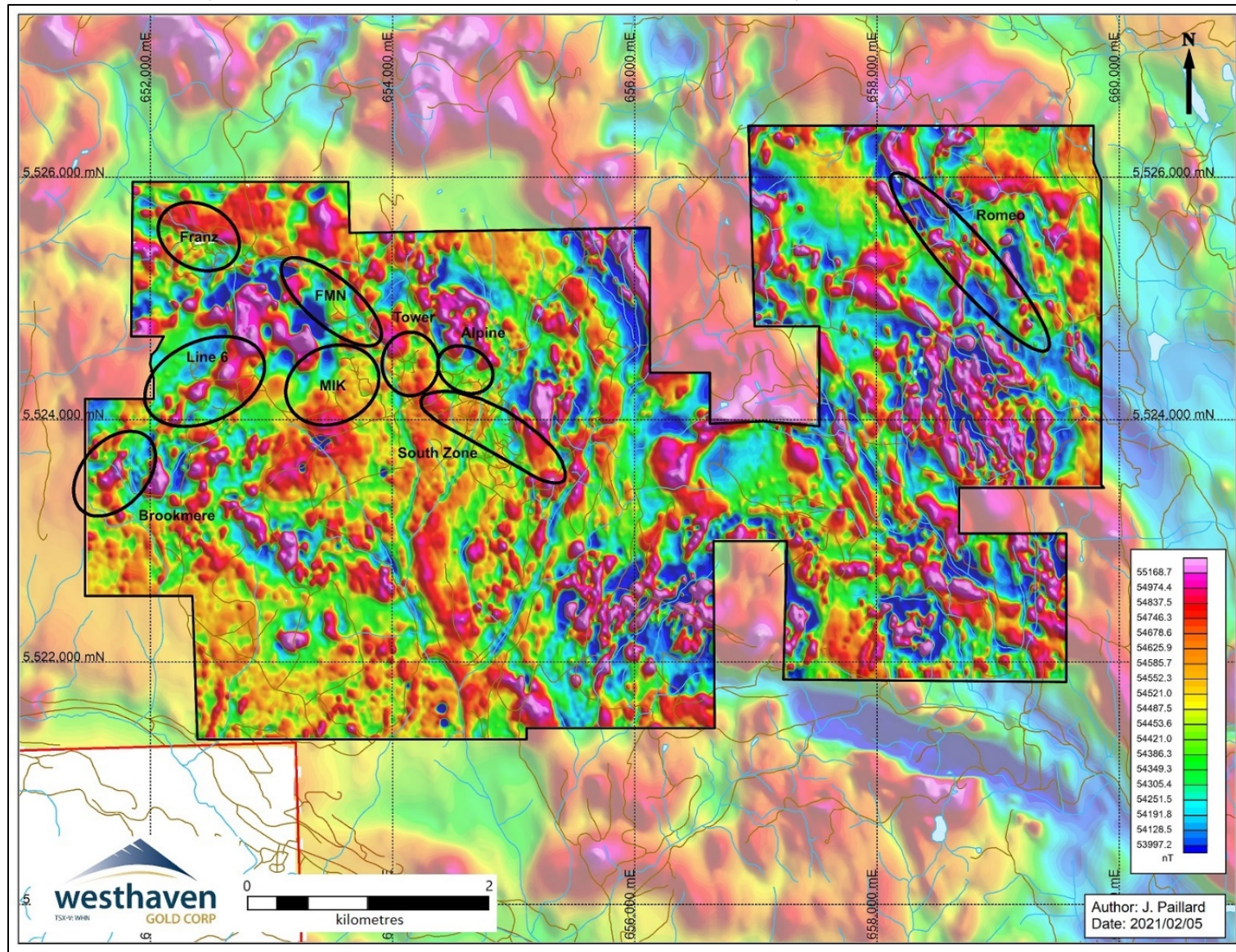
The South Zone occurs as a northwest-trending structural zone exhibiting a broad, weak magnetic signature that may extend north-northwest through the Tower, FMN and Franz Zones. Prominent parallel to sub-parallel trends are evident in the data, as are responses indicative of cross structures, which may be of future exploration interest. Magnetics at Line 6 appear as a northeast-trending moderately low magnetic intensity zone bounding a magnetic high to the east, extending southwest to the Brookmere Zone. The Romeo Zone is characterized by a northwest-trending very low magnetic intensity anomaly extending more than two km in length.

**FIGURE 9.3 2018 AIRBORNE TOTAL FIELD MAGNETIC DATA**



Source: Westhaven (2021) Coordinates in UTM NAD83 Z10N

**FIGURE 9.4 TOTAL FIELD GROUND MAGNETIC COMPILATION  
(OVERLAIN ON AIRBORNE MAGNETIC BACKGROUND)**



Source: Westhaven (2021) Coordinates in UTM NAD83 Z10N

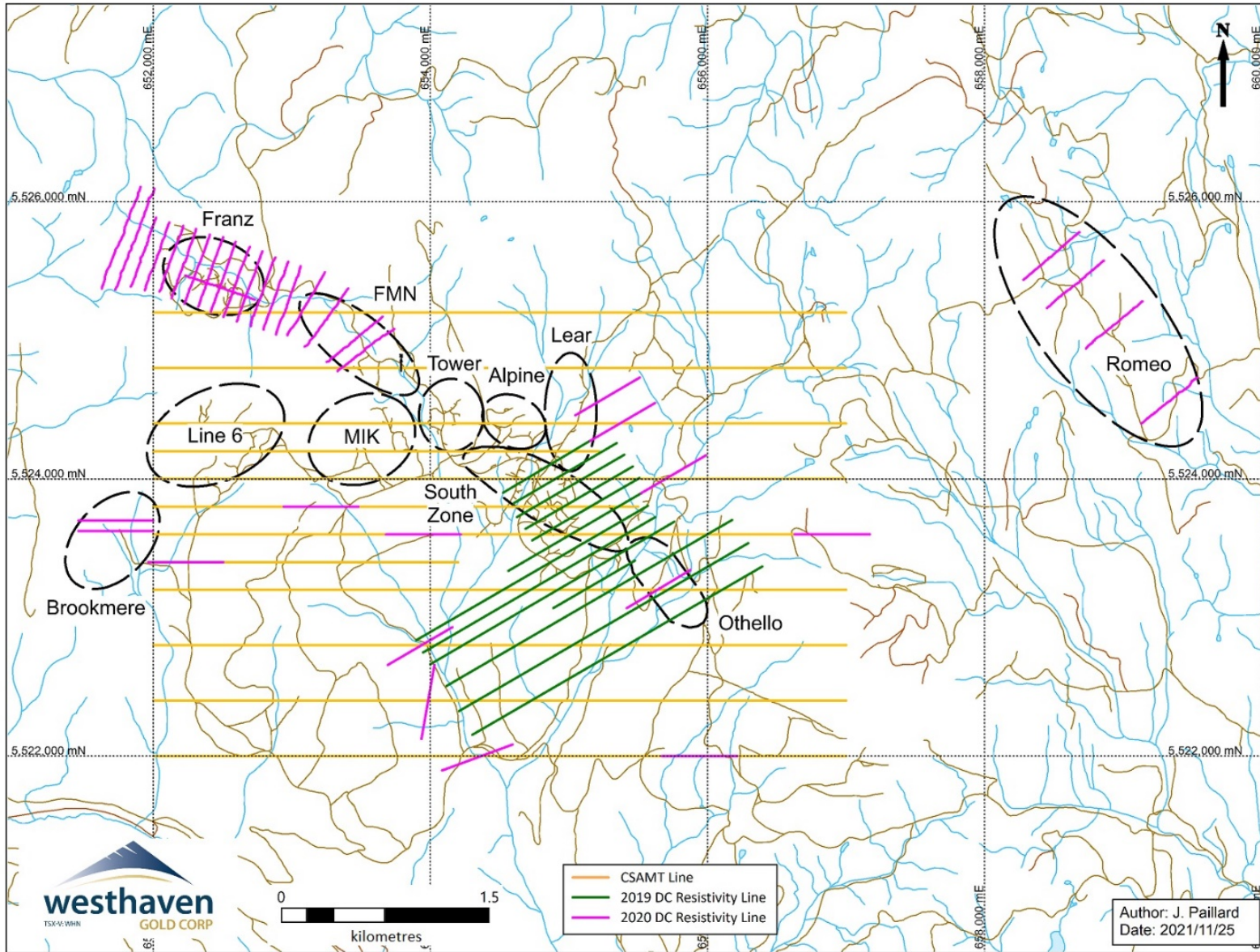
### **9.3.3 Induced Polarization (“IP”) and Resistivity**

From 2012 to 2015, three programs of IP chargeability and resistivity (11 lines, 22.4 line-km) were completed over the area between Line 6 and Alpine Zones, encompassing Mik, Tower, and the northern portion of the South Zone. Chargeability and resistivity data from the surveys was inverted. There was a weak correlation of high resistivity to known zones of mineralization. However, results were not conclusive. Consequently, Westhaven contracted other, more direct resistivity surveys.

### **9.3.4 Direct Current (“DC”) Resistivity**

Work in 2019 and 2020 by Peter E. Walcott and Associates (Coquitlam, BC) utilized high resolution DC resistivity surveying in an attempt to define narrow, sub-vertical resistivity zones associated with gold-bearing units. The 2019 DC resistivity survey (20.3 km) was conducted using a pulse type system and a “pole-dipole” array. The 2020 DC resistivity survey (23.5 km) used a “dipole-dipole” method of survey to reduce asymmetry in responses (Figure 9.5). The apparent resistivity in ohm metres is proportional to the ratio of the primary voltage and the measured current, and provides values assuming the survey area was homogeneous. As the underlying ground is abnormally inhomogeneous, the calculated apparent resistivity are functions of the actual chargeability and resistivity of the rocks. Several issues hampered work during the 2020 survey, including thick bush and difficult access that slowed production, along with regions of high contact resistance (Walcott, 2021a). An additional 5.6 line-km of dipole-dipole DC resistivity surveying was completed by Walcott and Associates in 2022 to fill gaps in coverage over the FMN area.

**FIGURE 9.5 DC RESISTIVITY AND CSAMT SURVEY LINE LOCATIONS**



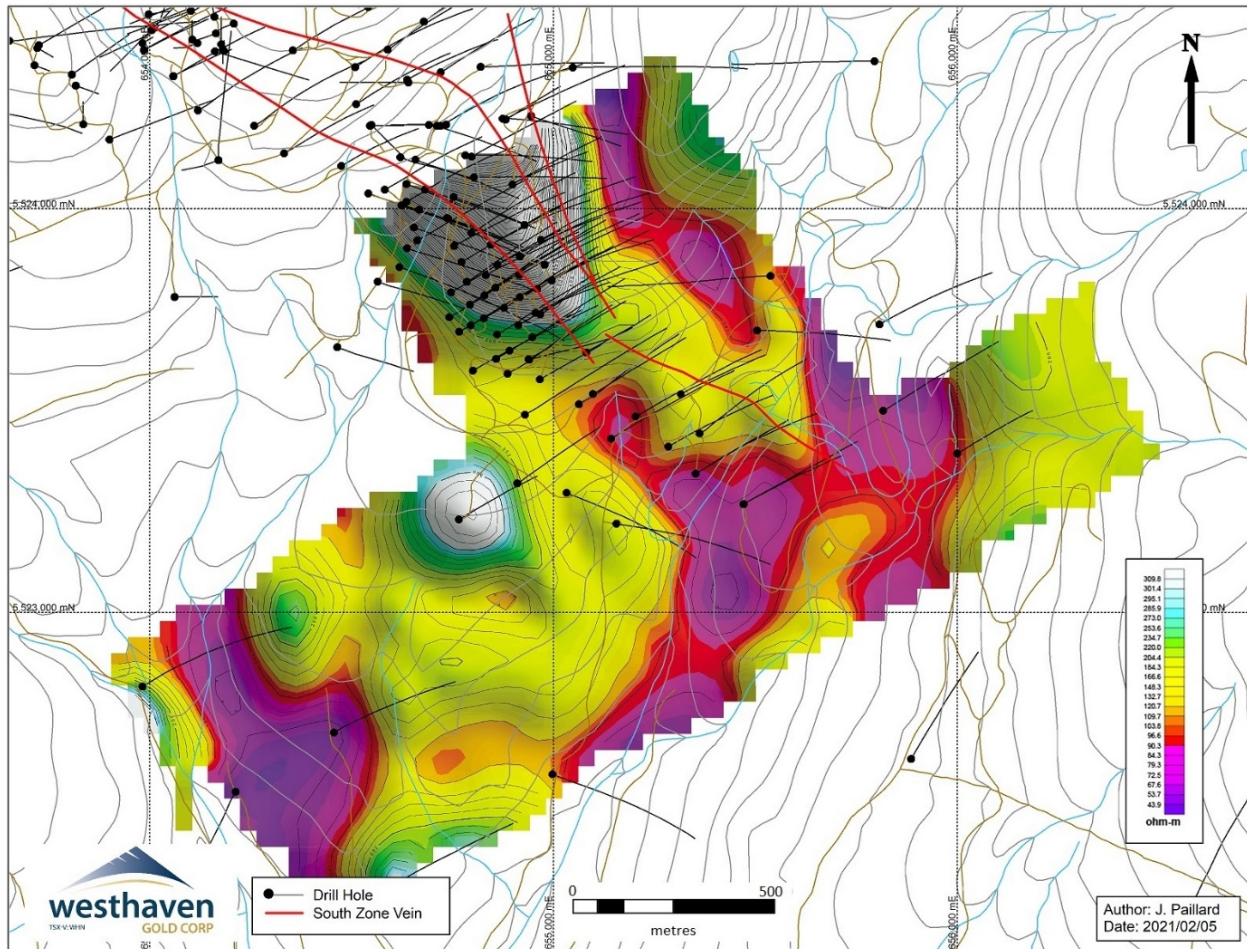
Source: Westhaven (2021) Coordinates in UTM NAD83 Z10N

CSAMT = controlled-source audio-frequency magnetotellurics.



The 2019 DC Resistivity survey was successful in identifying several features of interest within an area of coherent coverage. The most prevalent is associated with a long northerly to northwestwardly trending zone of subdued magnetics that encompasses the main mineralized body of the South Zone (Figure 9.6).

**FIGURE 9.6 2019 DC RESISTIVITY PLAN - INVERSION RESISTIVITY SLICE (1,200 M LEVEL)**



*Source: Westhaven (2021)  
Coordinates in UTM NAD83 Z10N*

### 9.3.5 Controlled-Source Audio-Frequency Magnetotellurics

A total of 55 line-km of controlled-source audio-frequency magnetotellurics (“CSAMT”) readings were completed by Peter E. Walcott and Associates in 2020, in an attempt to identify areas of elevated resistivity potentially associated with silicification in the underlying rocks proximal and distal to known mineralization (Walcott, 2021b). Readings were taken at 25 m intervals along east-to-west oriented lines spaced at 400 m intervals (see Figure 9.5). The survey covered an area of 15 km<sup>2</sup>, incorporating numerous structures observed within the magnetic data. CSAMT involves transmitting a controlled electric signal at a suite of frequencies into the ground from one location (transmitter site) and measuring the received electric and magnetic fields in the area of interest

(receiver site). CSAMT is a geophysical investigation method for obtaining information about subsurface resistivity, and under most conditions can survey deeper than regular IP/Resistivity surveys.

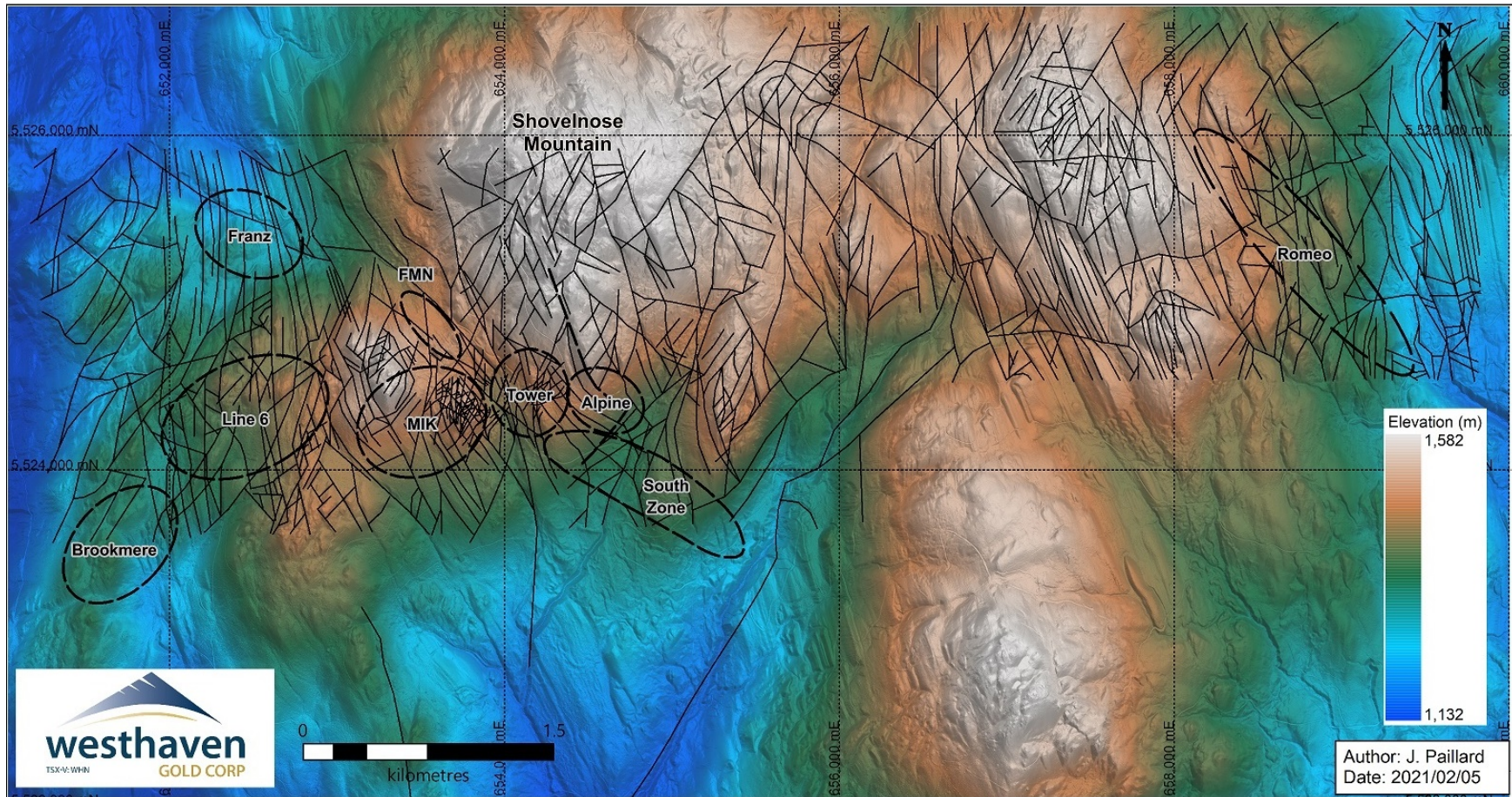
The survey successfully identified numerous resistivity zones of potential interest, proximal to structures and zones of reduced magnetic responses. Whereas the survey did highlight numerous zones of interest outside of the South Zone, its response proximal to the drilled mineralized trend was weak. This result is likely due to the size of the body, and (or) the angle of the lines relative to the feature reducing the response, and (or) numerous other lithological units in the survey area that yield elevated resistivity responses, which are of little interest (Walcott, 2021b).

#### **9.4 LIDAR (LIGHT DETECTION AND RANGING) SURVEY**

Four LiDAR surveys have been flown to date (2015, 2019, 2020 and 2022). The 2020 survey covered the entire Property and the other three were completed in order to aid identification of structures, provide elevation support for drill hole collars in the area, map stream courses, and outline areas that have been burnt by recent forest fires. LiDAR has particularly been useful for interpreting structures hidden by forest cover.

Topographic lineation interpretation was completed for the 2015 survey in the area of the known gold mineralized zones (Figure 9.7). Two main orientations were noted; northwest trending and northeast trending. The occurrence of gold mineralization to date has been related to the northwest trending structures.

**FIGURE 9.7 SHOVELNOSE LIDAR LINEAMENT INTERPRETATION**

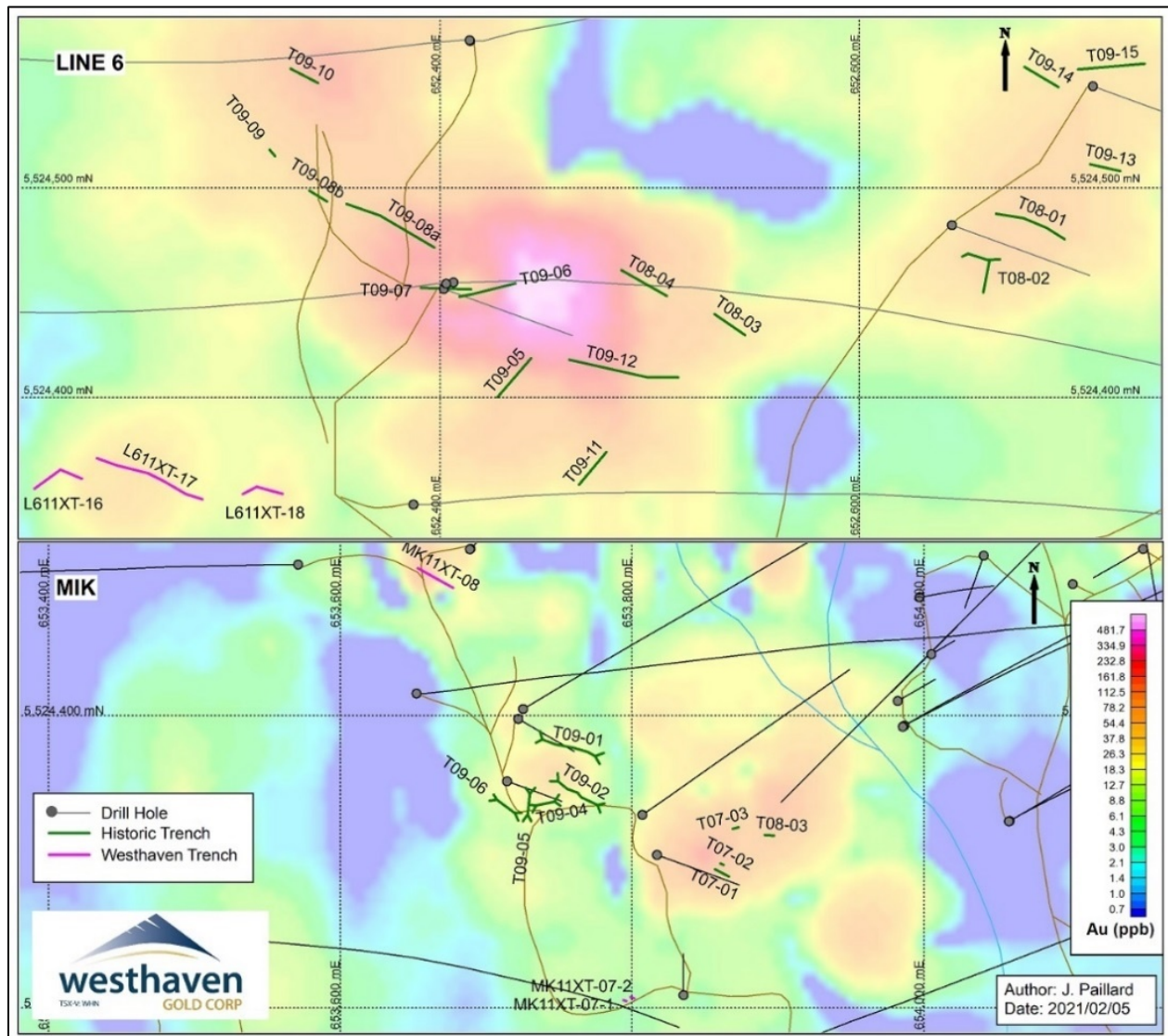


*Source: Westhaven (2021)  
Coordinates in UTM NAD83 Z10N*

## 9.5 TRENCHING

Mechanized trenching over anomalous soil geochemical targets at the Line 6 and Mik Zones was completed from 2007 to 2011; comprised of 28 trenches totalling 544 m by Strongbow in 2007 to 2009 (see Figure 6.3) and five trenches totalling 147 m by Westhaven in 2011 (Figure 9.8).

**FIGURE 9.8 ALL SHOVELNOSE TRENCH LOCATIONS  
(OVERLAIN ON GOLD-IN-SOIL GEOCHEMISTRY BACKGROUND)**



Source: Liard (2021)

Coordinates in UTM NAD83 Z10N

The trenches were sampled at 0.5 m to 2.0 m intervals dependant on observed mineralization. A summary of results with notable gold grades encountered is presented in Table 9.3. Trenching at the Line 6 Zone encountered quartz veining in siliceous rhyolite tuffs, oriented from 190° to 200°. Trenching at the Mik Zone revealed homogeneous rhyolite tuffs (lacking siliceous

inclusions) that host narrow quartz veins generally oriented northeast and steeply dipping to the northwest.

<b>TABLE 9.3 SIGNIFICANT GOLD INTERSECTIONS FROM SHOVELNOSE TRENCHING (2008-2021)</b>				
<b>Zone</b>	<b>Year</b>	<b>Trench</b>	<b>Au (g/t)</b>	<b>Interval (m)</b>
Line 6	2008	T08-01	16.95	2
Line 6	2008	T08-02	1.4	16
Line 6	2008	T08-03	1.68	2.5
Line 6	2008	T08-04	5.12	6
Line 6	2009	T09-05	0.12	2
Line 6	2009	T09-06	0.8	21
Line 6	2009	T09-07	-	-
Line 6	2009	T09-08A	0.79	6
Line 6	2009	T09-08B	0.37	2
Line 6	2009	T09-09	-	-
Line 6	2009	T09-10	0.43	5
Line 6	2009	T09-11	-	-
Line 6	2009	T09-12	-	-
Line 6	2009	T09-13	0.15	12.5
Line 6	2009	T09-14	-	-
Line 6	2009	T09-15	0.2	6.5
Line 6	2011	T11-16	0.04	2
Line 6	2011	T11-17	0.29	8
Line 6	2011	T11-18	0.1	2
Mik	2008	T08-01	1.4	3
Mik	2008	T08-02	2.9	2
Mik	2008	T08-03	-	-
Mik	2009	T09-04	2.72	2.9
Mik	2009	T09-05	-	-
Mik	2009	T09-06	0.81	5.5
Mik	2011	T11-02	0.01	2
Mik	2011	T11-04	0.02	2
Mik	2011	T11-08	0.12	2

*Source:* Westhaven (2021)

*Notes:* 2008-2009 historical trenching work.

2011 work completed by Westhaven.

Interval units are metres.

Trench locations were recorded using a handheld GPS, and sample sites collected within the trenches were indicated with measuring tape. Rock descriptions were recorded and samples placed in plastic bags with an identifying tag.

Additional trenching has not been undertaken since 2011. Nevertheless, the trenching results do confirm the presence of potentially significant mineralization at surface. Limited washing of existing outcrop exposures at the Franz Zone Showing was undertaken in 2022 and 2023. Surface sampling at the Franz Zone will be undertaken later in 2023.

## **9.6 PETROGRAPHIC AND OTHER ROCK STUDIES**

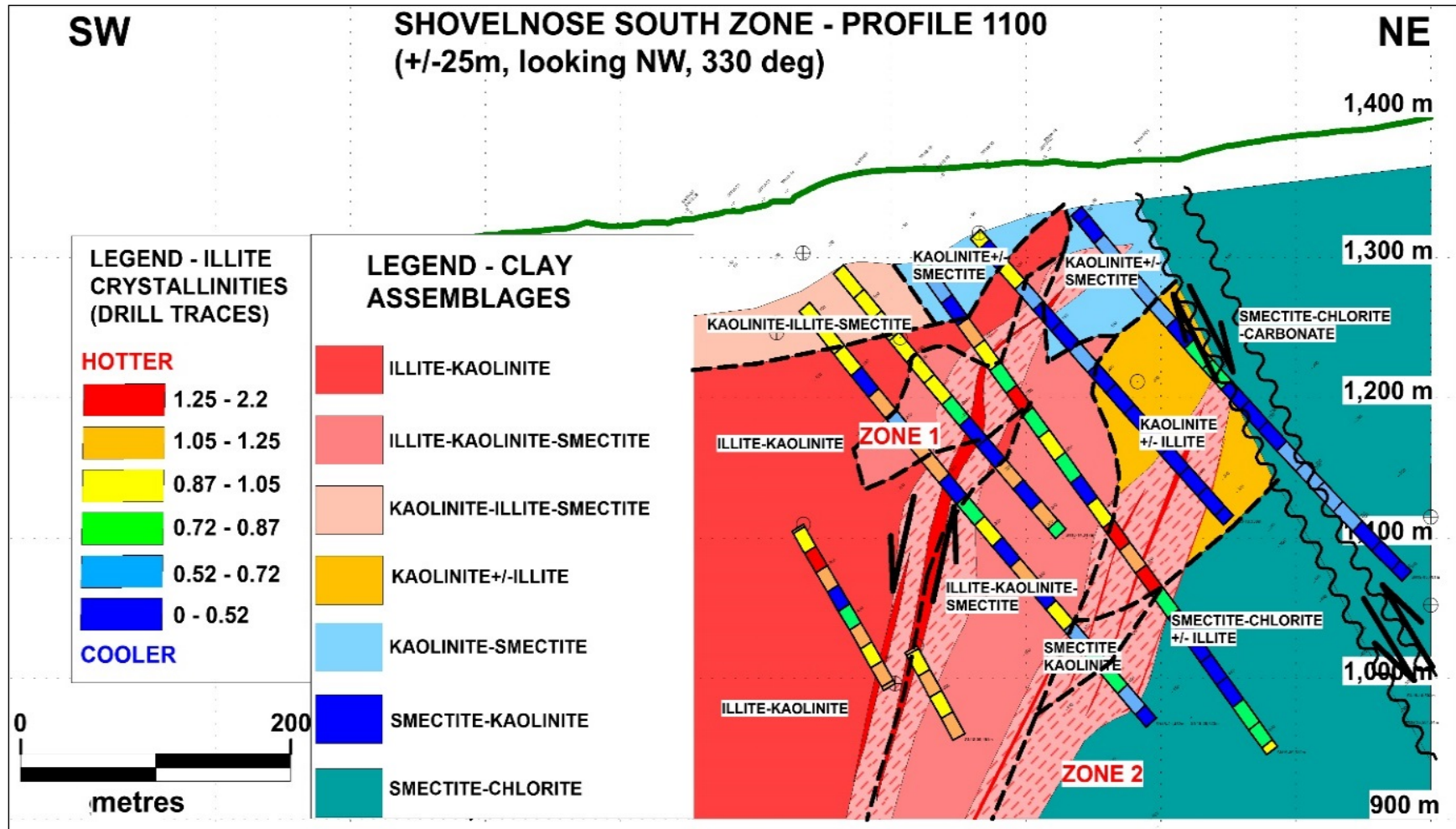
### **9.6.1 Petrography**

In 2013, Westhaven submitted six drill core samples from the Tower Zone to Acme Analytical Laboratory, Vancouver for petrographic analyses. In 2019, Westhaven submitted 49 samples of four 2018 diamond drill holes (SN18-12, SN18-15, SN18-18 and SN18-21) from the South Zone for thin section and petrographic analyses to Panterra Geoservices Inc (Surrey, BC). A total of 194 samples were submitted in 2021 (103) and 2022 (91) mainly from drill core, and also including material from outcrop. Samples represented gold-bearing quartz veins and host rocks. The work assisted in identifying lithologies and alteration. No results are available for many of the petrographic samples submitted to date during the 2023 field season, as of the effective date of this Report.

### **9.6.2 Near Infrared (“NIR”) Reflectance Spectroscopy**

In 2017, Westhaven submitted a suite of 380 drill core samples from the Alpine (nine drill holes), Tower (20 drill holes), Mik (four drill holes) and Line 6 (five drill holes) Zones to Kim Heberlein of Maple Ridge, BC, for analyses using a TerraSpec mineral analyzer. The survey was instigated in an attempt to differentiate high temperature (illite) and low temperature (kaolinite and smectite) clays, in an effort to aid defining epithermal alteration halos. The work assisted in mapping likely heat sources for mineralization and alteration, and in 2019 Westhaven submitted a further suite of 89 drill core samples from five 2018 drill holes (SN18-09, SN18-11, SN18-14, SN18-18, and SN18-21) and one 2019 drill hole (SN19-03). These drill holes form a fence pattern across the South Zone and were used to map zones of hydrothermal up-flow. Combined with mineralogical and textural indicators the work identified elevated illite crystallinities (higher paleo-temperatures) in drill core increasing to the west (hanging wall), which suggests the possibility of additional gold-quartz to the west of current drilling (Figure 9.9). Additional TerraSpec work on drill core from other mineralized zones, such the Franz and FMN Zones, may be warranted.

FIGURE 9.9 SOUTH ZONE NIR SPECTROSCOPY - CLAY ANALYSES



Source: Laird (2021)

## **10.0 DRILLING**

Westhaven has completed 478 diamond drill holes totalling 165,842 m on the Shovelnose Gold Property from 2011 to 2023. Drill core from all the drilling to date is stored at Westhaven's drill core logging and storage facility in Merritt, BC.

### **10.1 DRILLING PROCEDURES**

All drilling on the Property has been done under the supervision of Westhaven and, since 2014, has been contracted to Titan Diamond Drilling Ltd. ("Titan") of Smithers, BC. Titan completed 458 of the 478 drill holes on the Property, including all drilling used in the Mineral Resource Estimate. All drill programs to date have been conducted from surface.

The desired collar location, orientation and azimuth of each drill hole are marked in the field, in advance, by a Westhaven geologist using a GPS and Brunton compass. Drill pads are established and reclaimed after drill coring is complete, by Titan crews using a track mounted excavator. Unitized skid-mounted drill rigs (A-5, LY-38 and LY-44 equipment, plus related support gear) are moved and positioned by a Titan bulldozer. Position and alignment of the rig is initially checked by a Westhaven geologist prior to drilling, using a GPS and Brunton compass, and then confirmed using a Relfex TN14 Gyrocompass<sup>TM</sup> drill collar alignment tool.

The majority of drilling has collected NQ drill core, although some drill holes have been completed, or partially completed with larger diameter HQ drill core (six holes), and others have been completed in smaller diameter drill core, for technical reasons. On completion of a drill hole, the rod string and casing are generally removed, unless strong artisanal water flow is encountered, in which case the drill casing is left in the ground and either capped or tapped. Drill holes with minor water flow are plugged appropriately by Titan before the casing is pulled.

Titan drill crews retrieve the drill core from the ground and place it in sequentially numbered wooden drill core boxes with depth measurement blocks placed at three metre intervals. Drill hole dip angles were originally determined with acid dip tests. Since 2018, a downhole Reflex ACT III survey tool has been used to survey the holes for azimuth and dip at roughly 50 m downhole increments. Drill core and downhole survey data are delivered to Westhaven's drill core logging facility by Titan's drill crews at the end of each shift. Westhaven personnel verify the survey data, depth measurement blocks, box numbers, drill core placement and oriented drill core markings, then discuss any issues with the drill crews.

Westhaven collects data for; magnetic susceptibility, rock quality designation ("RQD" - a measurement of how fractured the drill core is), drill core recovery, and bulk density. Starting in the 2020 season, fracture frequency and oriented drill core measurements have also been collected. Magnetic susceptibility shows slight variations between volcanic units. RQD measured on 39,168 m of drilling (2019 to 2021 programs in the current Mineral Resource Estimate) averages 85.4%, which suggests the drill core is quite competent and not heavily fractured. Drill core recovery measurements for the same 39,168 m of drilling average 98.2% across three metre intervals, suggesting no serious issues or concerns. A total of 3,296 drill core samples, taken at approximately 25 m intervals (or closer spacing in prospective areas), from the drill holes used for



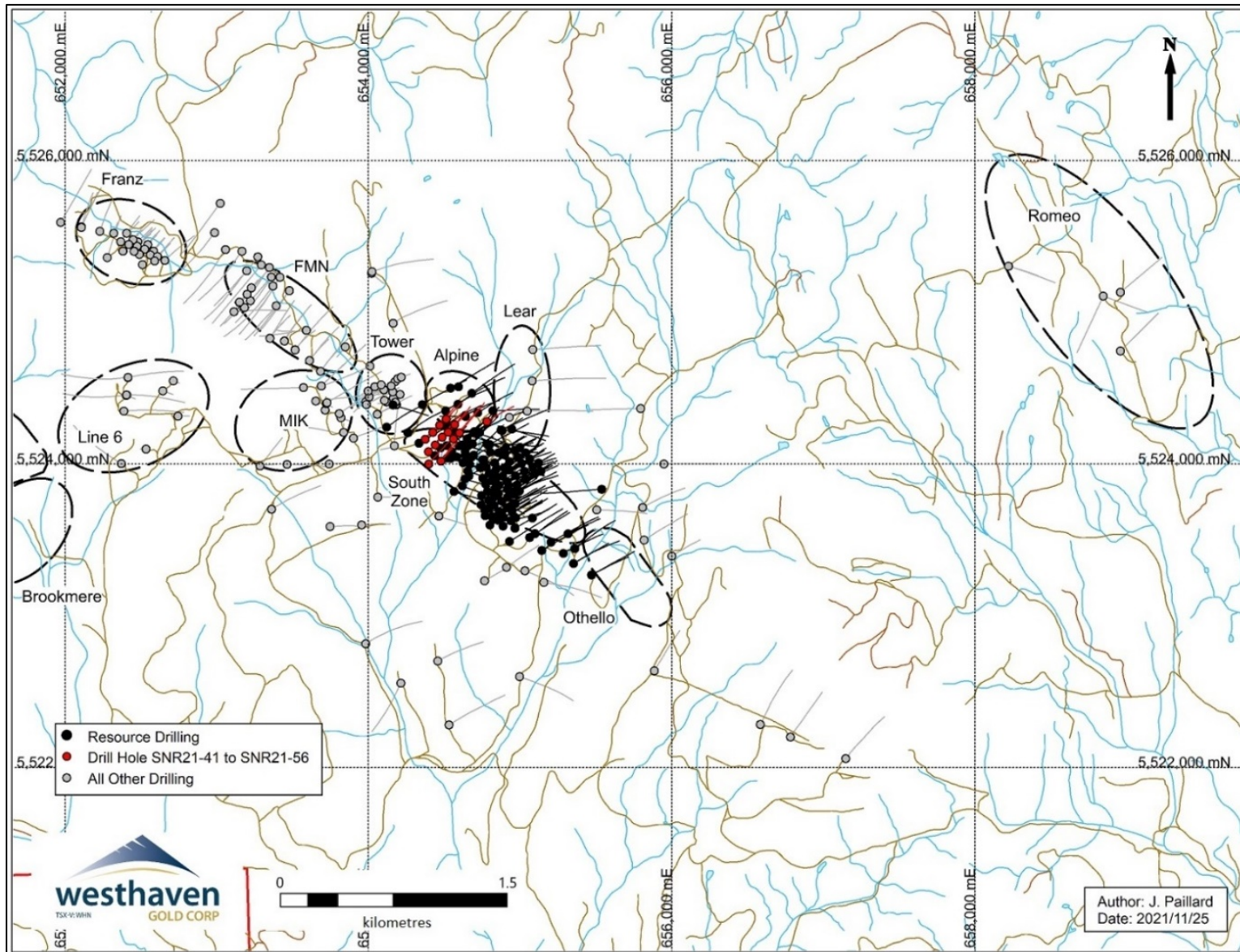
the Mineral Resource Estimate were measured for dry and submerged weight between 2018 and 2021. Bulk density results determined from these measurements on a lithological unit-by-unit basis ranged from 2.53 t/m<sup>3</sup> to 2.62 t/m<sup>3</sup> and averaged 2.55 t/m<sup>3</sup> (Bonnet, 2021).

Completed drill hole collars are marked in the field by a chemically treated painted fence post, with the identifying drill hole number marked both with a painted stencil and an embossed metal tag. Drill hole collar locations for 189 drill holes were measured post-drilling by GeoVerra of Kelowna, BC, using Trimble RTK GNSS equipment in 2020. In 2021, GeoVerra measured collar information for all drill holes used in the Mineral Resource Estimate (up to and including SNR21-40), and for exploration drill holes up to and including SN21-177 (Minard 2021a; 2021b). Drill hole collars for the remaining 2021 drill holes (SNR21-41 to SNR21-57 and SN21-178 to SN21-193) could not be surveyed due to evacuation orders associated with flooding in November of 2021. Locations for those 32 later drill hole collars were measured by handheld GPS units and supported by the LiDAR survey data.

## **10.2 DRILL COLLARS AND TARGET MINERALIZED ZONES**

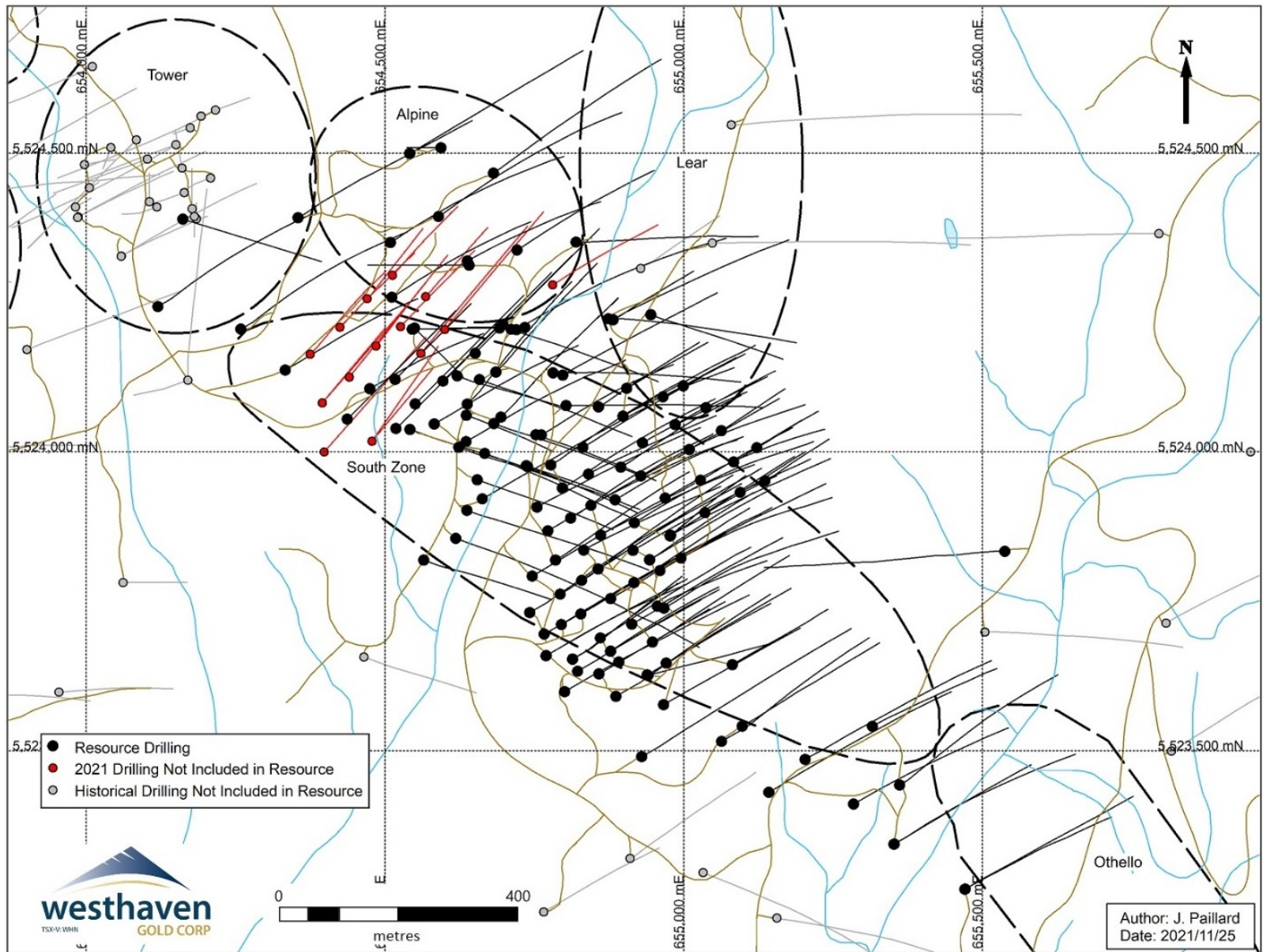
Westhaven's drilling activities to date have been focused on the western half of the Shovelnose Property, targeting zones of exploration interest (Mik, Line 6, Tower, Alpine, Lear, Franz, FMN, Othello and Romeo Zones) (Figure 10.1), and focused primarily on the South Zone (Figure 10.2). Drill collar locations and orientation information are listed in Table 10.1. Listed drill intercepts are drill core length intervals and may not be indicative of true thickness.

**FIGURE 10.1 ALL 2011 TO 2021 DRILLING (323 DRILL HOLES AND 123,472 M) AND ZONES OF EXPLORATION INTEREST**



Source: Westhaven (2021) Coordinates in UTM NAD83 Z10N

**FIGURE 10.2 DRILLING UTILIZED IN THE MINERAL RESOURCE ESTIMATION OF THE SOUTH ZONE**



Source: Westhaven (2021)

Coordinates in UTM NAD83 Z10N

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
11-SH-001	653,714.37	5,524,354.96	1,462	79.25	110	-60	MIK	2011	NR
11-SH-002	653,721.92	5,524,397.68	1,467	88.39	120	-60	MIK	2011	NR
11-SH-003	653,817.02	5,524,304.6	1,450	104.25	110	-55	MIK	2011	NR
11-SH-004	652,401.66	5,524,451.83	1,398.5	92.35	110	-45	Line 6	2011	NR
11-SH-005	652,644.23	5,524,482.18	1,422	95.4	110	-43	Line 6	2011	NR
11-SH-006	652,711.48	5,524,548.39	1,422.5	58.83	110	-45	Line 6	2011	NR
11-SH-007	654,173.71	5,524,542.77	1,442.5	87.17	250	-70	Tower	2011	NR
SN-12-01	653,847	5,524,771	1,450	121.92	220	-45	FMN	2012	HH-GPS
SN-12-02	654,192	5,524,562	1,446	152.4	0	-90	Tower	2012	HH-GPS
SN-12-03	654,216	5,524,572	1,447.5	121.92	70	-60	Tower	2012	HH-GPS
SN-12-04	654,102	5,524,490	1,418.5	235.92	250	-45	Tower	2012	HH-GPS
SN-12-05	654,020	5,525,257	1,559	146.3	130	-45	Portia	2012	HH-GPS
SN-13-01	654,150	5,524,514	1,432	224	250	-45	Tower	2013	HH-GPS
SN-13-02a	653,982	5,524,410	1,406	42	60	-45	Tower	2013	HH-GPS
SN-13-02b	654,005	5,524,442	1,410	37	60	-60	Tower	2013	HH-GPS
SN-13-02	654,164	5,524,434	1,427	144	250	-60	Tower	2013	HH-GPS
SN-13-03	653,997	5,524,481	1,409.5	110	80	-60	Tower	2013	HH-GPS
SN-13-04	654,170	5,524,120	1,382	248	250	-65	Other	2013	HH-GPS
SN-13-05	654,118	5,524,410	1,416	125	250	-60	Tower	2013	HH-GPS
SN-13-06	654,208.03	5,524,458.32	1,432.36	113	250	-60	Tower	2013	DGPS
SN-14-07	654,105.49	5,524,418.79	1,413.91	94.2	0	-60	Tower	2014	DGPS
SN-14-08	654,184.14	5,524,390.2	1,428.62	102.7	0	-75	Tower	2014	DGPS
SN-14-09	654,181	5,524,394	1,429	133.2	180	-75	Tower	2014	HH-GPS
SN-14-10	654,040.92	5,524,509.41	1,413.77	90.3	200	-65	Tower	2014	DGPS
SN-14-11	654,160	5,524,475	1,425	130.1	350	-60	Tower	2014	HH-GPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN-14-12	653,835.12	5,524,208.74	1,421.49	111.9	0	-60	MIK	2014	DGPS
SN15-01	654,640.62	5,524,312.6	1,388.00	251	270	-45	MRE	2015	HH-GPS
SN15-02	652,742.95	5,524,315.2	1,412.50	182	90	-65	Line 6	2015	DGPS
SN15-03	652,532.77	5,524,098.04	1,375.88	146	270	-75	Line 6	2015	DGPS
SN15-04	654,161.48	5,524,389.56	1,424.24	428	107	-55	MRE	2015	DGPS
SN15-05	654,083.79	5,524,522.3	1,420.60	401	225	-55	Tower	2015	DGPS
SN16-01	654,176.95	5,524,407.06	1,427.80	122	360	-55	Tower	2016	DGPS
SN16-02	654,691.61	5,524,207.29	1,354.65	260	270	-65	MRE	2016	DGPS
SN16-03	654,593.51	5,524,509.16	1,444.61	164	270	-68	MRE	2016	DGPS
SN16-04	654,061.27	5,523,781.41	1,347.76	176	90	-50	Other	2016	DGPS
SN16-05	653,807	5,524,332	1,456.00	455	55	-65	MIK	2016	HH-GPS
SN16-06	654,733.94	5,524,208.46	1,349.02	176	270	-55	MRE	2016	DGPS
SN16-07	654,547.09	5,524,205.68	1,383.15	185	90	-65	MRE	2016	DGPS
SN16-08	654,545.51	5,524,205.16	1,383.22	134	360	-90	MRE	2016	DGPS
SN16-09	654,549.28	5,524,207.16	1,383.12	230	135	-60	MRE	2016	DGPS
SN17-01	654,150	5,524,514	1,432.00	566	240	-58	Tower	2017	HH-GPS
SN17-02	654,216	5,524,572	1,447.5.0	500	237	-57	Tower	2017	HH-GPS
SN17-03	654,010	5,524,645	1,440.00	422	240	-45	Tower	2017	HH-GPS
SN17-04	654,170	5,524,120	1,382.00	458	360	-45	Tower	2017	HH-GPS
SN17-05	653,900.33	5,524,171.28	1,402.24	386	70	-45	Other	2017	DGPS
SN17-06	654,623.4	5,524,007.71	1,337.97	506	110	-50	MRE	2017	DGPS
SN17-07	654,658.2	5,524,121.12	1,346.14	431	110	-50	MRE	2017	DGPS
SN18-01	654,564.71	5,523,819.1	1,324.27	361	110	-50	MRE	2018	DGPS
SN18-02	654,464.5	5,523,656.84	1,311.91	318.4	110	-50	Other	2018	DGPS
SN18-03	654,666.87	5,523,997.39	1,336.23	455	110	-50	MRE	2018	DGPS
SN18-04	654,541.73	5,524,037.63	1,345.83	440	110	-50	MRE	2018	DGPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN18-05	654,620.62	5,524,127.16	1,350.72	350	110	-57	MRE	2018	DGPS
SN18-06	654,711.08	5,524,205.22	1,351.59	395	110	-50	MRE	2018	DGPS
SN18-07	654,635.93	5,524,061.22	1,342.5	320	110	-60	MRE	2018	DGPS
SN18-08	654,654.41	5,523,953.49	1,333.91	374	110	-50	MRE	2018	DGPS
SN18-09	654,637.01	5,523,902.31	1,331.25	491	110	-50	MRE	2018	DGPS
SN18-10	654,682.16	5,524,047.47	1,342.68	401	110	-50	MRE	2018	DGPS
SN18-11	654,618.49	5,523,855.26	1,327.79	626	110	-45	MRE	2018	DGPS
SN18-12	654,738.93	5,523,975.24	1,338.37	302	110	-50	MRE	2018	DGPS
SN18-13	654,944.73	5,524,229.58	1,373.4	365	110	-50	MRE	2018	DGPS
SN18-14	654,827.65	5,523,728.62	1,339.53	317	60	-50	MRE	2018	DGPS
SN18-15	654,891.13	5,523,648.3	1,344.58	308	60	-50	MRE	2018	DGPS
SN18-16	654,752.51	5,524,028.82	1,342.79	331	110	-50	MRE	2018	DGPS
SN18-17	654,736.47	5,523,976.98	1,338.38	275	110	-62	MRE	2018	DGPS
SN18-18	654,916.8	5,523,781.44	1,362.73	338	60	-45	MRE	2018	DGPS
SN18-19	654,966.29	5,523,576.98	1,334.27	416.05	60	-50	MRE	2018	DGPS
SN18-20	654,800.47	5,523,598.9	1,325.14	528.5	60	-50	MRE	2018	DGPS
SN18-21	654,795.16	5,523,711.01	1,332.41	482	60	-50	MRE	2018	DGPS
SN18-22	654,785.28	5,523,818.93	1,334.11	419	60	-50	MRE	2018	DGPS
SN19-01	654,913.07	5,523,711.72	1,356.24	425	60	-50	MRE	2019	DGPS
SN19-02	654,947.65	5,523,681.75	1,351.59	389	60	-50	MRE	2019	DGPS
SN19-03	654,995.45	5,523,822.29	1,366.57	401	60	-50	MRE	2019	DGPS
SN19-04	654,857.83	5,523,628.46	1,336.99	317	60	-50	MRE	2019	DGPS
SN19-05	654,856.6	5,523,804.14	1,360.61	455	60	-50	MRE	2019	DGPS
SN19-06	654,938.61	5,523,627.03	1,344.03	419	60	-50	MRE	2019	DGPS
SN19-07	654,940.01	5,523,625.97	1,343.96	335	75	-50	MRE	2019	DGPS
SN19-08	655,081.12	5,523,644	1,333.76	290	60	-50	MRE	2019	DGPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN19-09	654,877.54	5,523,754.55	1,359.55	512	60	-50	MRE	2019	DGPS
SN19-10	654,915.12	5,523,835.4	1,368.27	503	60	-50	MRE	2019	DGPS
SN19-11	654,832.5	5,523,835.57	1,354.92	416	60	-50	MRE	2019	DGPS
SN19-12	654,829.06	5,523,785.06	1,347.6	470	60	-50	MRE	2019	DGPS
SN19-13	654,955.63	5,523,741.8	1,356.47	338	60	-54	MRE	2019	DGPS
SN19-14	654,978.25	5,523,860.54	1,372.79	449	60	-50	MRE	2019	DGPS
SN19-15	654,860.85	5,523,860.85	1,363.08	434	60	-50	MRE	2019	DGPS
SN19-16	654,754.28	5,523,907.46	1,337.72	446	60	-45	MRE	2019	DGPS
SN19-17	654,844.75	5,523,910.52	1,358.79	415.7	60	-50	MRE	2019	DGPS
SN19-18	654,772.39	5,523,867.94	1,337.43	440	60	-50	MRE	2019	DGPS
SN19-19	654,917.19	5,523,881.51	1,373.94	482	60	-50	MRE	2019	DGPS
SN19-20	654,796.78	5,523,939.5	1,344.32	437	60	-48	MRE	2019	DGPS
SN19-21	654,793.22	5,523,762.03	1,333.36	503	60	-50	MRE	2019	DGPS
SN19-22	655,063.12	5,523,515.53	1,311.78	489	60	-50	MRE	2019	DGPS
SN19-23	654,746.18	5,523,792.31	1,331.1	497	60	-50	MRE	2019	DGPS
SN19-24	654,886.47	5,523,590.97	1,334.86	506	60	-50	MRE	2019	DGPS
SN19-25	654,662.72	5,523,921.35	1,331.56	500	60	-50	MRE	2019	DGPS
SN19-26	654,860.29	5,523,688.63	1,344.3	470	60	-50	MRE	2019	DGPS
SN19-27	654,635.78	5,524,017.25	1,338.12	426.72	60	-50	MRE	2019	DGPS
SN19-28	655,097.96	5,523,541.05	1,313.58	431	60	-50	MRE	2019	DGPS
SN19-29	654,582.28	5,524,046.72	1,343.05	408.13	60	-48	MRE	2019	DGPS
SN19-30	654,742.11	5,523,731.08	1,328.03	491	60	-50	MRE	2019	DGPS
SN19-31	654,474.57	5,524,105.91	1,370.28	322.46	60	-50	MRE	2019	DGPS
SN19-32	654,765.77	5,523,230.39	1,292.54	352	60	-50	Other	2019	DGPS
SN19-33	654,968.91	5,523,922.69	1,379.18	451.1	60	-50	MRE	2019	DGPS
SN19-34	654,910.26	5,523,319.86	1,300.47	401	60	-50	Other	2019	DGPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN19-35	654,960.03	5,523,801.47	1,364.77	504.14	60	-51	MRE	2019	DGPS
SN19-36	655,142.46	5,523,430.54	1,284.68	578	60	-50	MRE	2019	DGPS
SN19-37	654,966.97	5,523,738.58	1,355.49	465.73	60	-47	MRE	2019	DGPS
SN19-38	654,766.27	5,523,695.06	1,327.04	557	60	-50	MRE	2019	DGPS
SN19-39	654,333	5,524,137	1,396	374.95	60	-50	MRE	2019	HH-GPS
SN19-40	655,203.13	5,523,485.35	1,291.15	551	60	-50	MRE	2019	DGPS
SN19-41	654,258.69	5,524,205.43	1,406.1	441.96	60	-50	MRE	2019	DGPS
SN19-42	655,315.82	5,523,540.63	1,291.62	356.19	60	-50	MRE	2019	DGPS
SN19-43	654,119.67	5,524,243.41	1,395.53	423.67	60	-50	MRE	2019	DGPS
SN19-44	655,361.17	5,523,442.59	1,276.38	460.24	60	-50	MRE	2019	DGPS
SN19-45	655,284.37	5,523,410.65	1,276.39	462.5	60	-50	MRE	2019	DGPS
SN19-46	654,456.46	5,522,702.79	1,245.22	505	60	-50	Other	2019	DGPS
SN19-47	653,981.93	5,522,816.45	1,220	529.74	60	-50	Other	2019	DGPS
SN19-48	654,531.18	5,522,281.52	1,209.21	599.5	60	-50	Other	2019	DGPS
SN19-49	654,928.26	5,523,959.79	1,379.93	417.58	60	-50	MRE	2019	DGPS
SN20-50	655,352.33	5,523,343.95	1,273.01	377	60	-45	MRE	2020	DGPS
SN20-51	655,351.72	5,523,343.57	1,273.03	581	60	-57	MRE	2020	DGPS
SN20-52	655,807.27	5,523,713.43	1,318.96	482	60	-50	Iago	2020	DGPS
SN20-53	654,802.86	5,524,077.78	1,348.21	479	90	-50	MRE	2020	DGPS
SN20-54	655,816.55	5,523,499.46	1,322.22	479	60	-50	Iago	2020	DGPS
SN20-55	654,781.22	5,524,132.38	1,347.97	456	90	-50	MRE	2020	DGPS
SN20-56	654,874	5,524,223	1,360	480	90	-50	MRE	2020	HH-GPS
SN20-57	655,471.27	5,523,268.59	1,270.72	479	60	-45	MRE	2020	DGPS
SN20-58	654,797.68	5,524,128.67	1,349.03	438	60	-48	MRE	2020	DGPS
SN20-59	655,470.72	5,523,268.19	1,270.57	548	60	-57	MRE	2020	DGPS
SN20-60	654,929.72	5,523,489.98	1,319.09	639	60	-48	MRE	2020	DGPS



**TABLE 10.1  
DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN20-61	655,999.82	5,523,393.63	1,350.07	339	60	-50	Iago	2020	DGPS
SN20-62	654,880.55	5,524,220.87	1,362.05	450	60	-45	MRE	2020	DGPS
SN20-63	654,881.86	5,524,221.06	1,362.02	294	60	-58	MRE	2020	DGPS
SN20-64	654,898.25	5,524,059.77	1,370.71	366	60	-45	MRE	2020	DGPS
SN20-65	654,898.22	5,524,059.96	1,370.7	372	60	-55	MRE	2020	DGPS
SN20-66	652,387.1	5,524,349	1,382.01	596	90	-45	Line 6	2020	DGPS
SN20-67	654,719.94	5,524,204.68	1,350.72	528	60	-45	MRE	2020	DGPS
SN20-68	654,720.84	5,524,338.08	1,374.14	388.5	60	-45	MRE	2020	DGPS
SN20-69	652,406.24	5,524,454.91	1,395.78	602	90	-45	Line 6	2020	DGPS
SN20-70	654,637.6	5,524,319.47	1,388.73	22	60	-53	MRE	2020	DGPS
SN20-70B	654,637.6	5,524,319.47	1,388.73	399	60	-53	MRE	2020	DGPS
SN20-71	652,402.82	5,524,454.3	1,395.72	650	270	-47	Line 6	2020	DGPS
SN20-72	654,511.35	5,524,258.89	1,402.62	415.5	60	-50	MRE	2020	DGPS
SN20-73	654,508.92	5,524,350.63	1,419.77	454.9	60	-45	MRE	2020	DGPS
SN20-74	652,414.16	5,524,570.15	1,389.47	570	90	-47	Line 6	2020	DGPS
SN20-75	654,589.45	5,524,393.82	1,417.77	486	60	-45	MRE	2020	DGPS
SN20-76	652,413.97	5,524,570.47	1,389.58	650	270	-47	Line 6	2020	DGPS
SN20-77	654,354.3	5,524,391.85	1,436.97	471	60	-45	MRE	2020	DGPS
SN20-78	654,541.21	5,524,499.66	1,455.74	489	60	-45	MRE	2020	DGPS
SN20-79	652,370.35	5,524,003.14	1,362.95	587	300	-47	Line 6	2020	DGPS
SN20-80	654,819.61	5,524,351.26	1,364.85	441.2	90	-45	MRE	2020	DGPS
SN20-81	655,047.56	5,524,349.47	1,396.15	634	90	-45	Lear	2020	DGPS
SN20-82	653,360.29	5,523,701.78	1,360.93	494	60	-47	Spearing	2020	DGPS
SN20-83	653,453.24	5,524,249.01	1,426.54	536	90	-45	MIK	2020	DGPS
SN20-84	655,079.52	5,524,547.57	1,410.1	683.7	90	-45	Lear	2020	DGPS
SN20-85	655,885.8	5,522,637.27	1,339.89	443.33	30	-45	Shylock	2020	DGPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN20-86	653,652.21	5,524,415.25	1,454.84	674	90	-45	MIK	2020	DGPS
SN20-87	655,082.83	5,524,755.01	1,431.2	90.2	90	-45	Lear	2020	DGPS
SN20-87B	655,082.83	5,524,755.01	1,431.2	651	90	-45	Lear	2020	DGPS
SN20-88	653,725.3	5,524,404.42	1,467.37	581	60	-45	MIK	2020	DGPS
SN20-89	655,795.26	5,524,365.38	1,346.71	507	270	-45	Lear	2020	DGPS
SN20-90	656,583.8	5,522,283.26	1,443.52	566	30	-45	Shylock	2020	DGPS
SN20-91	655,537.52	5,523,833.46	1,300.44	607.5	270	-45	MRE	2020	DGPS
SN20-92	653,689.21	5,524,514.09	1,456.16	572	45	-45	FMN	2020	DGPS
SN20-93	655,504.18	5,523,698.41	1,295.69	501	90	-45	Iago	2020	DGPS
SN20-94	653,688.75	5,524,513.77	1,456.1	440	45	-60	FMN	2020	DGPS
SN20-95	656,782.62	5,522,201.25	1,460.87	509	30	-45	Shylock	2020	DGPS
SN20-96	653,571.15	5,524,503.27	1,447.68	584	270	-45	MIK	2020	DGPS
SN20-97	655,032.24	5,523,296.06	1,289.25	528	115	-45	Other	2020	DGPS
SN20-98	657,147.23	5,522,058.68	1,441.51	536	45	-45	Shylock	2020	DGPS
SN20-99	653,986.41	5,524,393.15	1,405.33	341	60	-45	Tower	2020	DGPS
SN20-100	653,985.41	5,524,392.37	1,405.33	425	60	-63	Tower	2020	DGPS
SN20-101	652,582.22	5,525,402.89	1,283.94	161	40	-45	Franz	2020	DGPS
SN20-102	652,561.37	5,525,378.17	1,291.47	161	40	-45	Franz	2020	DGPS
SN20-103	654,058.72	5,524,327.92	1,400.03	369	60	-45	Tower	2020	DGPS
SN20-104	652,607.56	5,525,367.6	1,289.35	233	40	-45	Franz	2020	DGPS
SN20-105	652,589.13	5,525,337.89	1,294.86	227	40	-45	Franz	2020	DGPS
SN20-106	654,058.16	5,524,327.53	1,400.08	407	60	-65	Tower	2020	DGPS
SN20-107	652,543.92	5,525,445.01	1,278.13	164	40	-45	Franz	2020	DGPS
SN20-108	652,523.55	5,525,416.32	1,287.17	173	40	-45	Franz	2020	DGPS
SN20-109	655,155.9	5,523,219.92	1,259.84	546	103	-45	Other	2020	DGPS
SN20-110	653,683.56	5,524,611.3	1,442.78	437	40	-45	FMN	2020	DGPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN20-111	652,478.45	5,525,463.84	1,283.95	191	40	-45	Franz	2020	DGPS
SN20-112	652,474.13	5,525,434.66	1,291.17	206	40	-45	Franz	2020	DGPS
SN20-113	654,997.2	5,522,599.26	1,207.29	558	115	-45	Other	2020	DGPS
SN20-114	653,683.25	5,524,610.74	1,442.74	467	40	-65	FMN	2020	DGPS
SN20-115	652,446.9	5,525,478.05	1,281.03	272	40	-45	Franz	2020	DGPS
SN20-116	654,212.66	5,522,555.72	1,206.77	531	210	-45	Other	2020	DGPS
SN20-117	653,610.94	5,524,682.44	1,457.1	425	40	-45	FMN	2020	DGPS
SN20-118	652,418.77	5,525,446.79	1,293.81	263	40	-45	Franz	2020	DGPS
SN20-119	652,404.6	5,525,520.13	1,266.05	202	40	-45	Franz	2020	DGPS
SN20-120	652,365.9	5,525,465.39	1,282.83	257	40	-45	Franz	2020	DGPS
SN20-121	653,610.44	5,524,681.44	1,457.01	473	40	-65	FMN	2020	DGPS
SN20-122	654,023.08	5,525,267.38	1,560.39	573	70	-45	Portia	2020	DGPS
SN20-123	652,227.17	5,525,533.16	1,263.48	287	20	-45	Franz	2020	DGPS
SN20-124	652,106.49	5,525,562.72	1,277.68	320	20	-45	Franz	2020	DGPS
SN20-125	654,162.28	5,524,927.86	1,534.19	507	60	-45	Portia	2020	DGPS
SN20-126	653,515.93	5,524,752.67	1,455.36	518.7	40	-45	FMN	2020	DGPS
SN20-127	652,489.54	5,525,381.58	1,299.26	284	40	-45	Franz	2020	DGPS
SN20-128	654,681.34	5,524,466.51	1,414.27	477	60	-45	MRE	2020	DGPS
SN20-129	652,488.98	5,525,380.77	1,299.25	269	40	-60	Franz	2020	DGPS
SN20-130	653,515.35	5,524,751.9	1,455.26	455	40	-65	FMN	2020	DGPS
SN20-131	652,656.58	5,525,340.57	1,291.69	350	40	-45	Franz	2020	DGPS
SN20-132	653,445.92	5,524,810.41	1,461.2	431	40	-48	FMN	2020	DGPS
SN20-133	658,221.59	5,525,303.96	1,454.19	438	110	-45	Romeo	2020	DGPS
SN20-134	652,454.8	5,525,402.74	1,297.24	269	40	-45	Franz	2020	DGPS
SN20-135	652,454.39	5,525,402.08	1,297.18	269	40	-55	Franz	2020	DGPS
SN20-136	653,446.12	5,524,811	1,461.12	455	40	-60	FMN	2020	DGPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN20-137	652,380.85	5,525,402.8	1,299.51	245	40	-55	Franz	2020	DGPS
SN20-138	652,380.58	5,525,402.49	1,299.45	245	40	-45	Franz	2020	DGPS
SN20-139	653,445.55	5,524,810.14	1,461.18	527	40	-70	FMN	2020	DGPS
SN20-140	658,220.99	5,525,303.94	1,454.3	390	110	-60	Romeo	2020	DGPS
SN20-141	652,277.11	5,525,359.74	1,293.04	359	20	-45	Franz	2020	DGPS
SN20-142	653,588.81	5,524,880.6	1,433.63	447.5	270	-45	FMN	2020	DGPS
SN20-143	652,509.07	5,525,314.05	1,304.57	300	40	-45	Franz	2020	DGPS
SN20-144	652,509.34	5,525,314.04	1,304.61	243	40	-60	Franz	2020	DGPS
SN20-145	653,589.8	5,524,880.67	1,433.55	509	270	-67	FMN	2020	DGPS
SN20-146	652,319.2	5,525,520.19	1,261.71	105	20	-45	Franz	2020	DGPS
SN20-147	653,350.21	5,524,829.36	1,462.17	422	40	-45	FMN	2020	DGPS
SN20-148	653,349.77	5,524,828.58	1,462.18	401	35	-60	FMN	2020	DGPS
SN20-149	653,391.08	5,525,041.82	1,418.7	413	220	-45	FMN	2020	DGPS
SN21-150	653,391.5	5,525,042.53	1,418.38	470	220	-65	FMN	2021	DGPS
SN21-151	653,477.53	5,525,142.76	1,419.79	722	220	-58	FMN	2021	DGPS
SN21-152	654,813.79	5,523,653.21	1,332.9	372	60	-50	MRE	2021	DGPS
SN21-153	653,477.49	5,525,142.5	1,419.89	786.16	220	-64	FMN	2021	DGPS
SN21-154	654,813.76	5,523,653.32	1,332.85	429	60	-60	MRE	2021	DGPS
SN21-155	653,415.18	5,525,230.73	1,407.21	750	220	-50	FMN	2021	DGPS
SN21-156	653,415.42	5,525,230.94	1,407.07	509	220	-58	FMN	2021	DGPS
SN21-157	654,769.78	5,523,659.06	1,325.73	378	60	-47	MRE	2021	DGPS
SN21-158	653,369.39	5,525,172.34	1,396.67	662	220	-47	FMN	2021	DGPS
SN21-159	654,769.43	5,523,658.85	1,325.74	447	60	-55	MRE	2021	DGPS
SN21-160	654,822.41	5,523,633.11	1,331.65	396	60	-50	MRE	2021	DGPS
SN21-161	653,345.64	5,525,294.43	1,396.44	695	220	-47	FMN	2021	DGPS
SN21-162	653,270.48	5,525,365.06	1,386.37	638	220	-47	FMN	2021	DGPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN21-163	653,165.73	5,525,401.37	1,363.71	620	220	-47	FMN	2021	DGPS
SN21-164	653,056.87	5,525,413.31	1,343.27	644	220	-47	FMN	2021	DGPS
SN21-165	652,984.52	5,525,523.93	1,329.46	611	220	-47	FMN	2021	DGPS
SN21-166	653,022.26	5,525,718.21	1,354.33	608	220	-45	FMN	2021	DGPS
SN21-167	653,196.37	5,525,273.77	1,369.56	667	220	-50	FMN	2021	DGPS
SN21-168	652,105.32	5,525,559.05	1,277.96	545	25	-55	Franz	2021	DGPS
SN21-169	652,105.98	5,525,559.55	1,277.99	560	25	-63	Franz	2021	DGPS
SN21-170	651,970.01	5,525,592.06	1,269.07	572	30	-45	Franz	2021	DGPS
SN21-171	655,948.87	5,524,000.22	1,325.44	500	90	-45	Iago	2021	DGPS
SN21-172	653,293.54	5,525,312.62	1,386.71	710.1	220	-45	FMN	2021	DGPS
SN21-173	658,845.78	5,525,106.65	1,372.05	483.15	110	-50	Romeo	2021	DGPS
SN21-174	658,846.13	5,525,106.46	1,372.04	581	205	-45	Romeo	2021	DGPS
SN21-175	653,293.74	5,525,312.88	1,386.65	662	220	-52	FMN	2021	DGPS
SN21-176	658,958.8	5,525,130.95	1,376.5	503	50	-45	Romeo	2021	DGPS
SN21-177	658,959.36	5,524,744.89	1,357.71	83	45	-45	Romeo	2021	DGPS
SN21-178	653,356	5,525,229	1,394	698	220	-45	FMN	2021	HH-GPS
SN21-179	653,112.5	5,525,003.5	1,412	455	40	-45	FMN	2021	HH-GPS
SN21-180	653,112.5	5,525,003.5	1,412	516	90	-45	MIK	2021	HH-GPS
SN21-181	653,284	5,523,987	1,402.5	419	40	-55	FMN	2021	HH-GPS
SN21-182	653,284	5,523,987	1,402.5	270	90	-65	MIK	2021	HH-GPS
SN21-183	653,463	5,523,997	1,395	435	90	-45	MIK	2021	HH-GPS
SN21-184	653,221	5,525,076	1,414	368	40	-45	FMN	2021	HH-GPS
SN21-185	653,740	5,524,000	1,386	420	90	-45	MIK	2021	HH-GPS
SN21-186	653,182	5,525,031	1,408	425	40	-45	FMN	2021	HH-GPS
SN21-187	653,954	5,523,598	1,332	306	90	-50	MIK	2021	HH-GPS
SN21-188	653,199	5,525,118	1,400	254	40	-45	FMN	2021	HH-GPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SN21-189	653,746	5,523,588	1,332	393	90	-50	MIK	2021	HH-GPS
SN21-190	653,228	5,525,161	1,400	284	40	-45	FMN	2021	HH-GPS
SN21-191	653,228	5,525,161	1,400	104	40	-65	FMN	2021	HH-GPS
SN21-192	654,928	5,524,307	1,366	252	60	-50	Lear	2021	HH-GPS
SN21-193	653,228	5,525,161	1,400	470	220	-46	FMN	2021	HH-GPS
SN21-194	653,148	5,525,067	1,401.5	269	40	-46	FMN	2021	HH-GPS
SN21-195	654,775	5,524,505	1,410	87	60	-45	Alpine	2021	HH-GPS
SNR21-01	654,877.59	5,523,666.67	1,344.86	306	60	-49	MRE	2021	DGPS
SNR21-02	654,877.19	5,523,666.36	1,344.8	303	60	-56	MRE	2021	DGPS
SNR21-03	654,942.62	5,523,819.42	1,367.95	342	60	-45	MRE	2021	DGPS
SNR21-04	654,942.62	5,523,819.58	1,367.95	444	60	-60	MRE	2021	DGPS
SNR21-05	654,977.18	5,523,859.87	1,372.64	372	60	-58	MRE	2021	DGPS
SNR21-06	654,976.95	5,523,859.7	1,372.72	399	60	-66	MRE	2021	DGPS
SNR21-07	654,976.92	5,523,859.5	1,372.61	159	60	-80	MRE	2021	DGPS
SNR21-08	655,028.08	5,523,952.88	1,379.25	276	60	-50	MRE	2021	DGPS
SNR21-09	655,035.31	5,523,898.54	1,374.13	261	60	-50	MRE	2021	DGPS
SNR21-10	655,009.37	5,524,003.83	1,382.49	261	60	-50	MRE	2021	DGPS
SNR21-11	655,062.89	5,524,035.59	1,387.28	201	60	-50	MRE	2021	DGPS
SNR21-12	655,083.72	5,523,983.22	1,385.92	210	60	-50	MRE	2021	DGPS
SNR21-13	655,094.48	5,523,932.39	1,381.67	201	60	-50	MRE	2021	DGPS
SNR21-14	655,136.05	5,523,951.78	1,390.53	201	60	-50	MRE	2021	DGPS
SNR21-15	655,122.17	5,524,006.96	1,395.27	186	60	-50	MRE	2021	DGPS
SNR21-16	655,037.21	5,524,073.73	1,388.58	207	60	-50	MRE	2021	DGPS
SNR21-17	654,985.62	5,524,045.79	1,381.21	270	60	-50	MRE	2021	DGPS
SNR21-18	654,930.95	5,524,015.13	1,377.49	315	60	-50	MRE	2021	DGPS
SNR21-19	654,894.64	5,523,974.52	1,374.53	348	60	-50	MRE	2021	DGPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SNR21-20	654,885.09	5,523,919.76	1,369.63	360	60	-50	MRE	2021	DGPS
SNR21-21	654,965.07	5,524,092.18	1,377.37	249	60	-50	MRE	2021	DGPS
SNR21-22	654,999.04	5,524,110.41	1,383.55	159	60	-50	MRE	2021	DGPS
SNR21-23	654,904.51	5,524,106.59	1,366.88	252	60	-50	MRE	2021	DGPS
SNR21-24	654,857.23	5,524,075.41	1,356.2	318	60	-50	MRE	2021	DGPS
SNR21-25	654,777.5	5,523,978.35	1,343.05	417	60	-50	MRE	2021	DGPS
SNR21-26	654,830.97	5,524,007.86	1,351.42	360	60	-50	MRE	2021	DGPS
SNR21-27	654,840.78	5,523,963.06	1,351.72	390	60	-50	MRE	2021	DGPS
SNR21-28	654,761.41	5,524,028.39	1,343.12	402	60	-50	MRE	2021	DGPS
SNR21-29	654,810.6	5,523,889.36	1,345.68	429	60	-50	MRE	2021	DGPS
SNR21-30	654,970.64	5,523,646.67	1,344.81	306	60	-45	MRE	2021	DGPS
SNR21-31	654,693.99	5,524,058.32	1,342.74	444	45	-50	MRE	2021	DGPS
SNR21-32	654,637.68	5,524,080.13	1,344.19	417	45	-50	MRE	2021	DGPS
SNR21-33	654,685.61	5,524,133.71	1,347.18	387	45	-50	MRE	2021	DGPS
SNR21-34	654,697.45	5,524,212.89	1,354.09	372	45	-50	MRE	2021	DGPS
SNR21-35	654,650.77	5,524,165.09	1,351.48	375	45	-50	MRE	2021	DGPS
SNR21-36	654,596.82	5,524,118.57	1,352.84	408	45	-50	MRE	2021	DGPS
SNR21-37	654,550.53	5,524,080.41	1,351.44	414	45	-50	MRE	2021	DGPS
SNR21-38	654,516.91	5,524,121.32	1,364.29	335	45	-50	MRE	2021	DGPS
SNR21-39	654,518.2	5,524,039.32	1,349.28	392	45	-50	MRE	2021	DGPS
SNR21-40	654,436.67	5,524,054.8	1,366.68	361	45	-50	MRE	2021	DGPS
SNR21-41	654,449	5,524,129	1,379.5	329	45	-50	South Zone	2021	HH-GPS
SNR21-42	654,484	5,524,001.5	1,349	303	45	-50	South Zone	2021	HH-GPS
SNR21-43	654,484	5,524,001.5	1,349	329	45	-63	South Zone	2021	HH-GPS
SNR21-44	654,392	5,524,078	1,387	356	45	-50	South Zone	2021	HH-GPS
SNR21-45	654,565	5,524,166	1,375	429	45	-50	South Zone	2021	HH-GPS

**TABLE 10.1**  
**DRILL HOLE COLLAR DETAILS AND TARGETED ZONES (13 PAGES)**

<b>Drill Hole ID</b>	<b>UTM Easting</b>	<b>UTM Northing</b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (°)</b>	<b>Dip (°)</b>	<b>Zone</b>	<b>Year</b>	<b>Survey Method</b>
SNR21-46	654,392	5,524,078	1,387	347	45	-63	South Zone	2021	HH-GPS
SNR21-47	654,396.5	5,523,999	1,366	338	45	-50	South Zone	2021	HH-GPS
SNR21-48	654,596	5,524,201.5	1,379.5	252	45	-50	South Zone	2021	HH-GPS
SNR21-49	654,490	5,524,175	1,385	303	45	-50	South Zone	2021	HH-GPS
SNR21-50	654,374.5	5,524,163.5	1,394.5	299	45	-50	South Zone	2021	HH-GPS
SNR21-51	654,526	5,524,209.5	1,388.5	285	45	-50	South Zone	2021	HH-GPS
SNR21-52	654,568	5,524,260	1,392.5	246	45	-50	South Zone	2021	HH-GPS
SNR21-53	654,424.5	5,524,208.5	1,402	279	45	-50	South Zone	2021	HH-GPS
SNR21-54	654,470	5,524,256.5	1,407.5	240	45	-50	South Zone	2021	HH-GPS
SNR21-55	654,512.5	5,524,295.5	1,410	249	45	-50	South Zone	2021	HH-GPS
SNR21-56	654,780.5	5,524,279.5	1,349.5	321	60	-50	South Zone	2021	HH-GPS
SNR21-57	654,785	5,524,260	1,393	330	45	-50	South Zone	2021	HH-GPS

*Source: Westhaven (2021)*

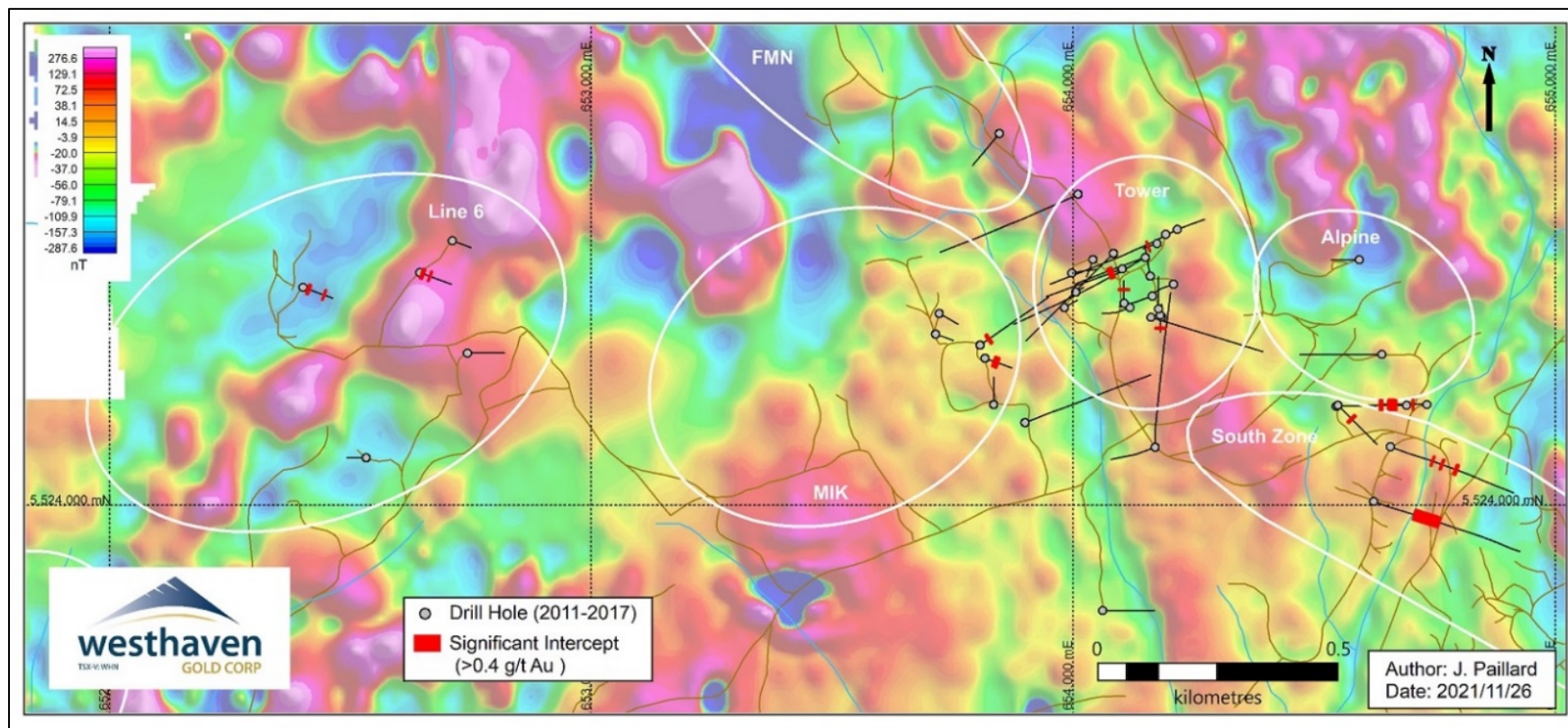
*Notes: MRE = part of Mineral Resource Estimate on South Zone (current); DGPS = differential GPS; HH-GPS = Handheld GPS (Garmin GPSs averaged to ±0.5 m accuracy); NR = Not Recorded.  
Coordinates UTM NAD83 Zone 10N.*



### **10.3 DRILLING FROM 2011 TO 2017**

Westhaven's drilling from 2011 through much of 2017 (47 drill holes; 9,669 m) targeted the Mik, Line 6, Alpine and Tower Zones (Figure 10.3), in an effort to identify feeder zones or controlling structures for the mineralization mapped at surface (see Section 9.5 'Trenching' above) (Figure 10.3). Although the results from that work were encouraging (Table 10.2), mineralized intercepts were confined to near-surface stratigraphy and a deeper mineralized feeder was not identified. Highlights of the 2011 to 2017 work include 11.2 m of 0.97 g/t Au with 7 g/t Ag starting at 29.7 m in drill hole SN-12-04 of the Tower Zone.

**FIGURE 10.3 2011-2017 DRILL HOLE INTERVALS >0.4 G/T AU - TARGET ZONES ON TOTAL FIELD GROUND MAGNETICS**



Source: Westhaven (2021)  
Coordinates UTM NAD83 Zone 10N.

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>	<b>Zone</b>
11-SH-003	34.6	49.2	14.6	0.41	1.0	Mik
11-SH-004	15.47	20.14	3.57	0.92	2.2	Line 6
	66	66.4	0.4	2.19	33.4	Line 6
11-SH-005	6.45	10.88	4.43	0.54	3.0	Line 6
	30.1	30.75	0.65	1.25	10.5	Line 6
11-SH-007	55.5	56.1	0.5	1.39	5.9	Tower
SN-12-04	29.7	40.8	11.2	0.97	7.0	Tower
SN-14-07	55	58	3	1.31	8.1	Tower
SN-14-09	102	106	4	0.85	12.0	Tower
SN16-02	50	83	33	0.47	1.4	Alpine
	128	142.4	14.4	0.49	4.5	Alpine
SN16-05	48	50	2	1.48	3.8	Mik
	50	56	6	0.41	2.1	Mik
SN16-06	49	50	1	2.63	6.9	Alpine
	122.8	144	21.3	0.48	4.1	Alpine
SN16-09	77.1	83	5.9	0.57	2.2	Alpine
SN17-06	141	226	85	0.50	1.4	South
SN17-07	149	150	1	1.10	1.2	South
	183	185	2	0.90	4.7	South
	231.3	237	5.7	2.50	5.4	South

*Source: Westhaven (2021)*

*Notes: Sample length and drill intercept lengths are not indicative of true thickness.*

#### **10.4 SOUTH ZONE DISCOVERY AND DRILLING 2017 TO 2021**

Geological discussion during late 2016 and early to mid-2017 led to re-interpretation of the drilling to date, based on geology, metal ratios (Au/Ag), mineralogy and clay mineral crystallization temperatures, and identified that the previously known near surface zones represent the root of the epithermal system exposed in an uplifted fault block. Drilling results in the southern part of the Alpine Zone in late-2016 (drill holes SN16-07 to SN16-09) had suggested that a northeast-trending cross-fault, with the south-side of the fault down, dropped in relation to the north-side.

The final two drill holes of the 2017 drill program (SN17-06 and SN17-07) were completed south of the Alpine Zone, into the interpreted down-dropped block, and discovered mineralization at what is now known as the South Zone. Drill hole SN17-06 intercepted 85 m of 0.5 g/t Au with 1.4 g/t Ag starting at 141 m downhole (Table 10.2). Drill holes SN18-01 to SN18-08 continued to test the extents of this South Zone mineralization, with drill holes SN18-09 and SN18-11 intersecting a series of stacked multi-metre scale quartz veins (Vein Zone 1), indicative of a typical, well-developed, low-sulphidation epithermal system (albeit only weakly mineralized at this depth).

Geological interpretation suggested that these intersections were too low in the system, beneath the critical paleo-boiling point at which gold is generally deposited. Drill hole SN18-14 was collared to test the projected up-dip extension of the mineralized system, and intersected 19.0 m of 23.0 g/t Au and 102.7 g/t Ag (209 m to 228 m). The next drill holes were completed at 100 m step-outs along strike in both directions from drill hole SN18-14. The orientation of these drill holes was adjusted from 110° to 060° to better test the epithermal system.

The South Zone was the focus of drilling through 2018 and 2019, with one of the best reported intersections from drill hole SN19-01: that is, 12.66 m of 39.3 g/t Au and 133.1 g/t Ag (154.34 m to 167.00 m). Further drilling in 2019 suggested the presence of additional fault controls on mineralization that have been incorporated into the geological model, discovered additional mineralization subsequently named Vein Zones 2 and 3, and extended the strike length of Vein Zone 1 to 840 m.

Most of the 2020 drilling targeted exploration sites outside of the South Zone, and indicated the vein sets thinned to the southeast, and potentially continued to the north and northwest into the Lear and Alpine Zones. Gold mineralization at the South Zone is concentrated over a 200 m vertical range between 1,100 m asl and 1,300 m asl that conforms to the boiling level of epithermal mineralizing fluids. In epithermal systems, boiling of gold-bearing solutions causes the gold to precipitate. Therefore, identifying the boiling zone is critical to interpretation. The boiling zone is marked by colloform-cruciform banded quartz veins containing adularia bands and selvages, bladed quartz after calcite, ginguero and electrum. Deeper veining (below 1,100 m asl) features barren massive to weakly banded quartz with crystalline potassium feldspar.

Drilling undertaken at the South Zone in 2021 was designed to demonstrate continuity of mineralization, test for additional veining immediately to the east of Vein Zone 3 within a theoretical open pit shell, evaluate the northwestern extent of the vein systems, and support the current Mineral Resource Estimate.

Geological modelling based on the 2015 to 2021 drilling has identified 13 discrete veins (Veins 1a-1g, 2a-d, and 3a-b) in the South Zone drilling. The interpretation of each individual vein is based on information derived from drill hole intercepts and assay results as summarized in Table 10.3, and relationships between the veins evident in geological logging, drill core photographs, 3-D modelling and other data.

**TABLE 10.3**  
**DRILL SUPPORT FOR SOUTH ZONE VEIN MODELS**  
**(2017 TO 2021)**

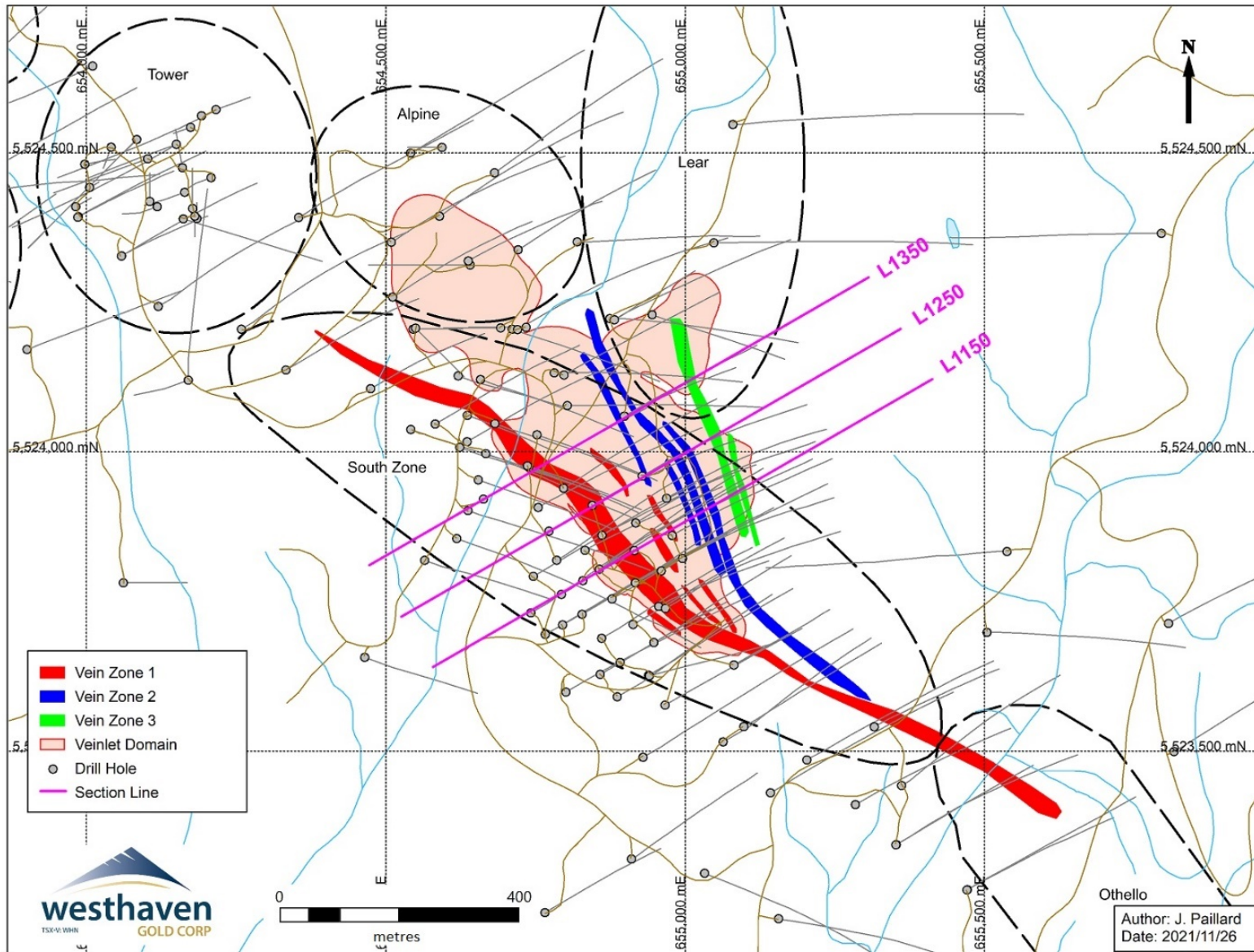
<b>Individual Vein Zones</b>	<b>No. of Drill Holes Intersecting Vein</b>	<b>No. of Metres of Drill Core in Vein</b>	<b>No. of Samples in Each Vein</b>
1a*	77	3,053.7	2,772
1b	16	97.4	72
1c	12	35.7	38
1d	13	13.6	20
1e	7	25.4	25
1f	5	6.6	11
1g	4	3.9	6
2a*	41	907.2	885
2b*	44	353.9	325
2c	14	52.5	48
2d	5	74.6	62
3a*	33	246.4	249
3b	21	163.7	165
<b>Veinlet Domain</b>	<b>102</b>	<b>10,699.2</b>	<b>7,792</b>

*Source: Westhaven (2021)*

*Note: \* = 'main' vein in each vein set*

A surface plan view of the extent of South Zone veining, and the Veinlet Domain, as currently modelled is shown in Figure 10.4. Three cross-section projections (L1150, L1250 and L1350) are shown in Figure 10.5, Figure 10.6 and Figure 10.7 to illustrate the distribution of gold through the mineralized area.

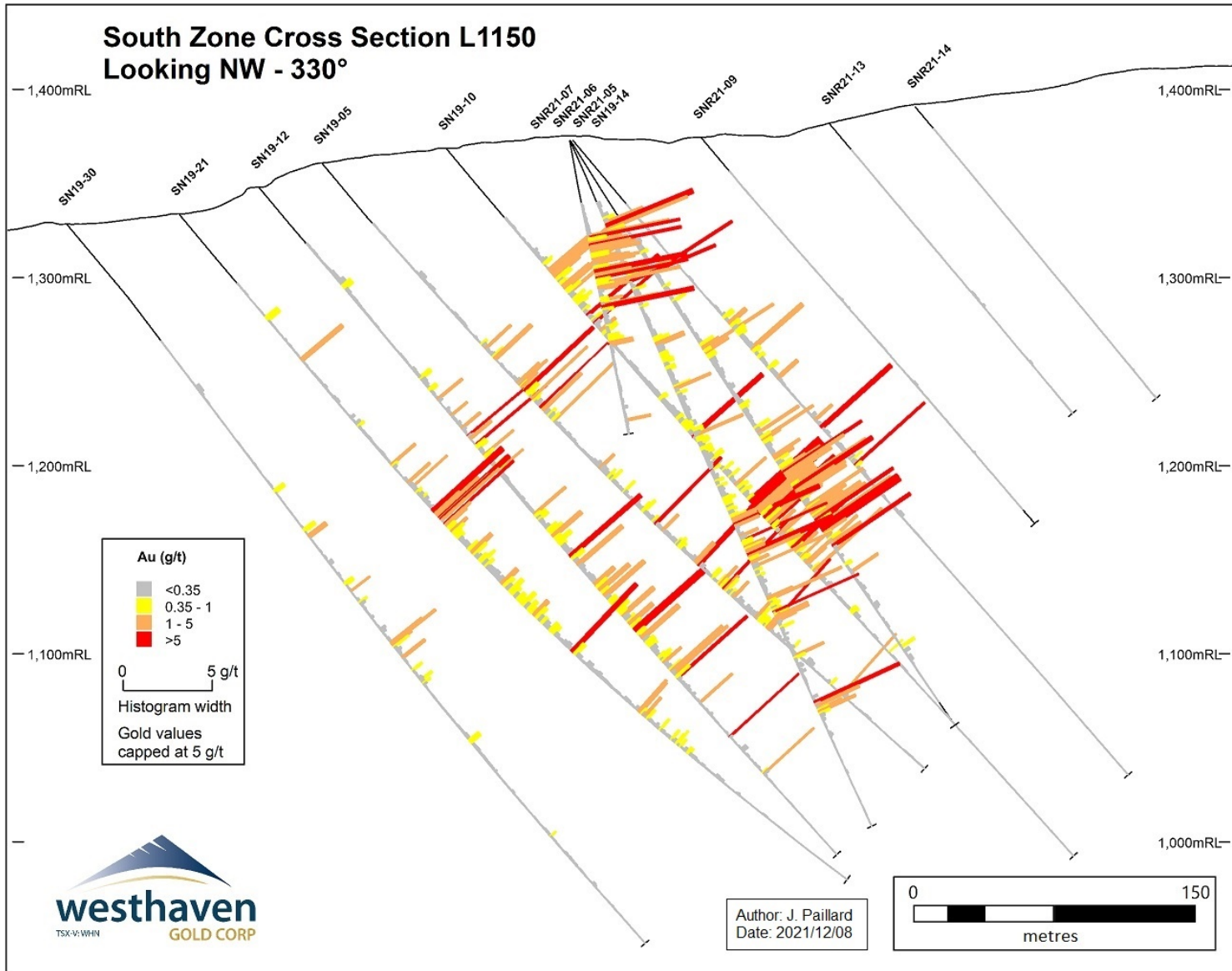
**FIGURE 10.4 2017 TO 2021 DRILLING - SOUTH ZONE VEINING AND ASSAY CROSS-SECTION LOCATIONS**



Source: Westhaven (2021)

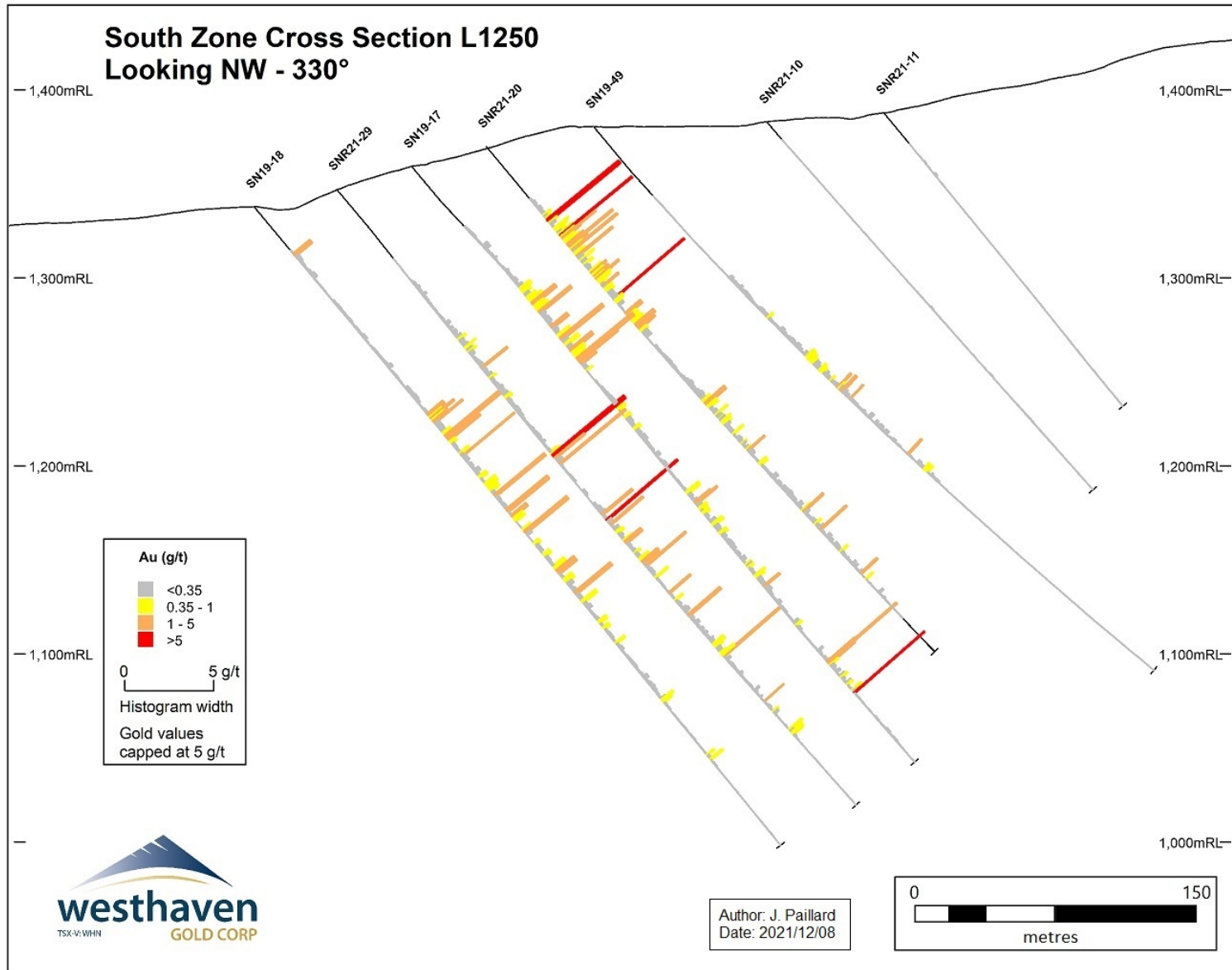
Coordinates UTM NAD83 Zone 10N

**FIGURE 10.5 SOUTH ZONE ASSAY CROSS-SECTION PROJECTION L1150 (2017 TO 2021 DRILLING)**



Source: Westhaven (2021)

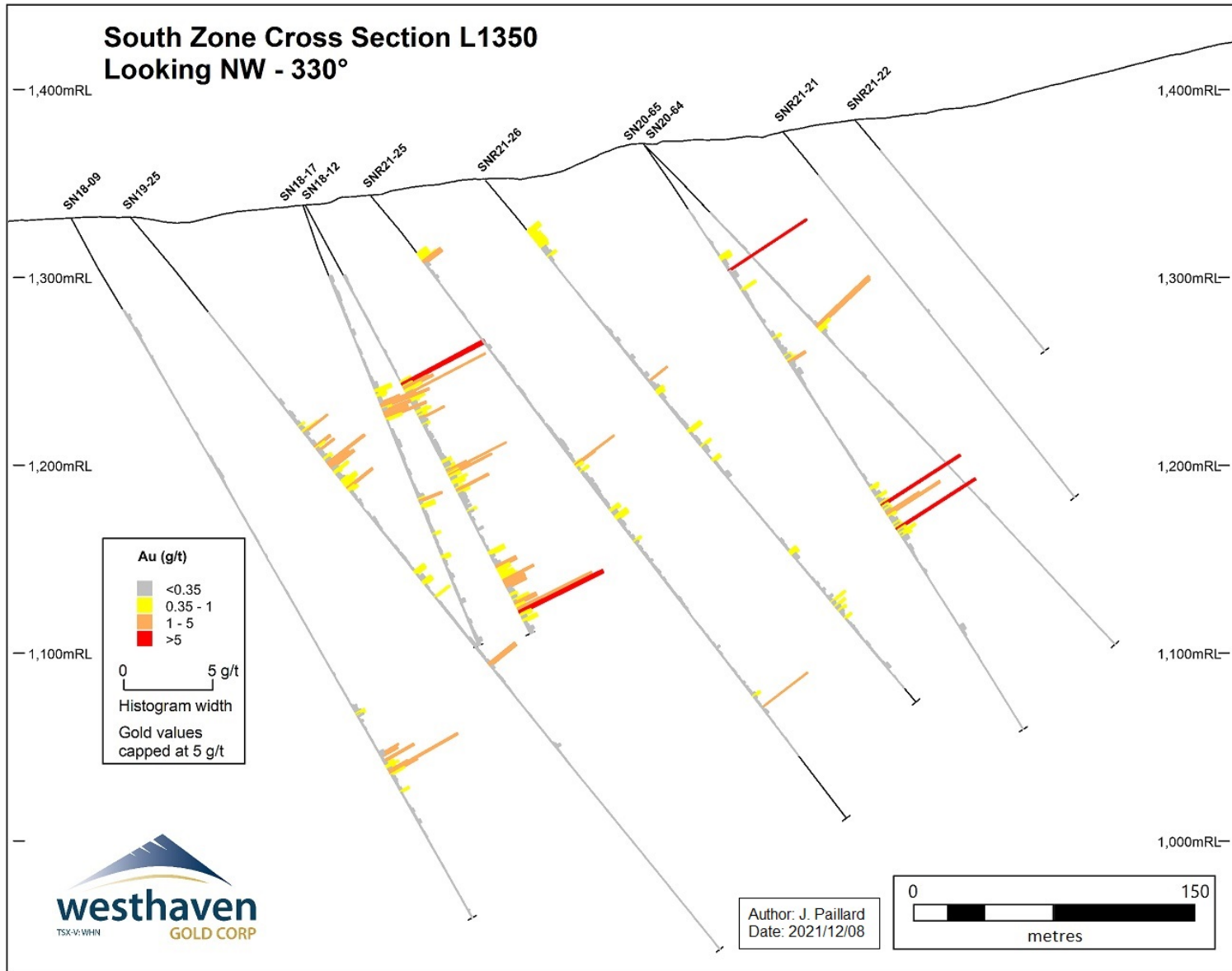
**FIGURE 10.6 SOUTH ZONE ASSAY CROSS-SECTION PROJECTION L1250 (2017 TO 2021 DRILLING)**



Source: Westhaven (2021)



**FIGURE 10.7 SOUTH ZONE ASSAY CROSS-SECTION PROJECTION L1350 (2017 TO 2021 DRILLING)**



*Source: Westhaven (2021)*

Drill holes with significant mineralized intersections (herein representing intervals with a weighted average of >1 g/t Au, and as available from Westhaven's public disclosure record as of the effective date of this Report) are listed in Table 10.4 with corresponding assay values and shown in a plan view in Figure 10.8.

<b>TABLE 10.4</b>					
<b>SOUTH ZONE 2017 TO 2021 DRILL HOLE INTERCEPTS &gt;1 G/T AU</b>					
<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
SN17-07	149.00	150.00	1.00	1.10	1.20
	231.30	237.00	5.70	2.50	5.40
SN18-03	178.00	206.70	28.70	2.60	4.80
	271.70	272.10	0.40	3.40	13.90
SN18-04	307.20	307.50	0.30	2.50	4.60
SN18-05	130.00	134.00	4.00	1.00	1.00
	159.00	159.50	0.50	2.60	23.60
	260.00	260.40	0.40	1.60	3.80
SN18-07	145.60	148.30	2.70	1.20	5.20
SN18-10	100.00	111.70	11.70	1.30	7.50
	225.00	225.50	0.50	5.60	34.50
	241.50	242.00	0.60	4.80	9.60
	313.80	314.20	0.40	5.70	33.70
	318.00	318.40	0.40	1.70	8.40
	348.90	349.30	0.40	1.30	0.90
	390.50	391.00	0.50	1.20	11.40
SN18-11	402.00	403.00	1.00	2.00	7.00
	433.00	433.90	0.90	5.20	10.50
SN18-14	83.00	86.00	3.00	1.90	0.90
	125.00	126.00	1.00	1.40	1.70
	197.60	198.00	0.40	1.40	13.00
	206.00	207.00	1.00	1.20	9.10
	209.00	228.00	19.00	23.00	102.70
SN18-15	139.00	143.00	4.00	3.40	2.90
	179.00	188.00	9.00	1.00	7.10
	189.80	236.00	46.20	8.90	65.50
	243.00	254.00	11.00	1.10	3.80
SN18-16	89.00	91.40	2.40	16.80	40.90
	189.00	194.00	5.00	1.20	2.20
	222.00	227.00	5.00	1.10	1.70
	249.00	251.00	2.00	3.00	2.70
SN18-17	121.90	133.10	11.20	1.40	4.30
	183.00	184.00	1.00	1.30	2.00

**TABLE 10.4**  
**SOUTH ZONE 2017 TO 2021 DRILL HOLE INTERCEPTS >1 G/T AU**

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
SN18-18	77.90	80.00	2.10	1.90	3.30
	124.30	138.00	13.70	4.30	21.90
	188.70	189.50	0.80	9.20	79.70
	260.30	260.80	0.50	4.10	13.70
	283.00	291.00	8.00	6.80	22.30
	313.00	315.90	2.90	5.50	63.50
SN18-21	239.00	240.00	1.00	1.60	3.60
	248.10	261.00	12.90	12.10	94.30
	405.80	406.90	1.10	1.70	97.30
	421.00	423.00	2.00	1.20	1.40
	443.00	444.00	1.00	4.70	1.60
SN18-22	150.40	154.60	4.20	1.60	5.60
	177.40	189.80	12.40	4.30	17.90
	189.80	191.00	1.20	1.30	2.40
	306.00	308.00	2.00	7.50	4.00
	330.60	331.40	0.80	2.90	2.90
	343.00	343.80	0.80	1.30	5.80
SN19-01	89.00	92.00	3.00	4.65	10.90
	154.34	167.00	12.66	39.31	133.10
	167.00	177.00	10.00	2.26	15.10
SN19-02	130.11	148.00	17.89	3.69	32.60
	174.94	175.44	0.50	13.65	36.50
SN19-03	44.00	49.00	5.00	1.60	6.70
	92.00	93.00	1.00	3.52	2.90
SN19-04	246.27	266.52	20.25	1.02	10.00
SN19-05	156.04	184.76	28.72	2.97	13.70
	292.00	294.00	2.00	7.02	3.90
	307.00	314.00	7.00	2.78	29.80
	343.01	343.65	0.64	8.21	10.20
SN19-06	165.97	197.00	31.03	2.88	19.90
	227.00	238.00	11.00	8.56	10.30
SN19-07	232.00	245.00	13.00	1.06	3.05
SN19-09	151.00	161.80	10.80	1.25	9.10
	181.25	181.54	0.29	6.06	106.00
SN19-10	83.60	127.10	43.50	1.98	7.80
	200.00	202.00	2.00	6.57	2.90
	246.00	298.22	52.22	5.13	17.30
SN19-11	117.00	119.98	2.98	188.41	131.40

**TABLE 10.4**  
**SOUTH ZONE 2017 TO 2021 DRILL HOLE INTERCEPTS >1 G/T AU**

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
	138.22	155.52	17.30	2.10	11.70
	232.00	242.00	10.00	1.28	2.00
	370.00	372.00	2.00	2.28	22.80
	399.71	400.32	0.61	3.45	26.70
SN19-12	178.77	179.50	0.73	8.39	58.60
	227.00	344.00	117.00	1.23	3.60
	411.75	412.30	0.55	3.64	25.70
SN19-13	69.00	118.00	49.00	1.33	18.00
SN19-14	145.00	147.00	2.00	3.63	15.60
	196.13	203.00	6.86	1.93	4.80
	228.40	229.24	0.84	11.85	28.40
SN19-15	100.50	110.00	9.50	4.21	14.60
	122.00	135.50	13.50	8.84	53.20
	194.00	198.00	4.00	6.43	3.10
	253.35	266.00	12.65	6.11	12.70
	370.92	378.03	7.11	9.42	69.40
SN19-16	111.00	116.00	5.00	2.45	11.50
	225.68	227.00	1.32	7.24	4.50
SN19-17	134.00	138.70	4.70	2.59	4.10
	343.90	346.20	2.30	3.05	24.70
	365.90	366.58	0.68	9.92	65.40
SN19-18	143.00	149.80	6.80	1.18	4.70
	158.00	162.00	4.00	2.98	2.80
	172.12	172.86	0.74	3.65	14.40
	198.95	200.53	1.58	3.50	5.40
	224.00	226.00	2.00	2.96	2.50
	266.00	268.00	2.00	2.51	6.10
SN19-19	61.04	63.20	2.16	100.50	133.40
	81.00	82.00	1.00	15.40	137.00
	101.00	111.00	10.00	1.35	4.00
	137.00	139.00	2.00	2.91	10.00
	221.00	262.00	41.00	1.87	8.70
SN19-20	59.66	61.16	1.50	3.35	7.30
	203.00	205.00	2.00	3.56	3.30
	340.00	344.00	4.00	1.41	4.70
SN19-21	206.49	218.89	12.40	5.74	44.60
	312.00	314.00	2.00	5.93	4.30
	360.00	365.00	5.00	1.26	4.30

**TABLE 10.4**  
**SOUTH ZONE 2017 TO 2021 DRILL HOLE INTERCEPTS >1 G/T AU**

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
SN19-25	167.00	171.20	4.20	1.61	4.00
	304.00	306.00	2.00	1.80	3.30
SN19-26	197.00	239.84	42.84	2.63	27.80
SN19-27	259.00	261.00	2.00	1.80	5.00
SN19-29	130.96	132.90	1.94	1.88	11.10
SN19-30	281.00	284.70	3.70	2.23	28.20
	290.92	292.19	1.27	1.52	10.40
SN19-31	103.94	104.87	0.93	1.05	5.40
SN19-33	110.61	111.10	0.49	8.42	6.50
	142.00	143.00	1.00	1.34	7.10
	163.64	171.30	7.66	2.09	16.40
	181.00	187.30	6.30	6.70	43.40
SN19-35	88.00	89.00	1.00	1.90	1.40
	104.00	105.00	1.00	1.90	5.10
	289.00	292.00	3.00	3.60	2.40
	384.53	387.00	2.47	5.22	14.00
SN19-37	64.92	114.00	49.08	1.45	6.30
SN19-38	301.00	306.00	5.00	13.89	105.60
SN19-49	241.00	242.00	1.00	1.11	19.20
SN20-53	87.00	88.00	1.00	4.78	3.00
	101.00	106.00	5.00	1.10	8.20
	138.00	139.00	1.00	1.90	2.50
	187.00	189.00	2.00	1.12	2.80
	297.00	298.00	1.00	2.16	10.30
	311.77	311.95	0.18	3.77	29.10
SN20-56	72.65	76.11	3.46	2.27	7.20
	184.00	194.56	10.56	3.67	10.40
SN20-58	210.00	218.00	8.00	1.07	1.80
SN20-62	196.88	197.33	0.45	8.70	36.30
	211.00	217.00	6.00	2.01	2.90
	255.00	261.00	6.00	1.47	3.10
SN20-64	133.00	139.00	6.00	1.57	4.30
SN20-65	80.70	81.37	0.67	7.19	11.40
	219.00	253.00	34.00	1.21	3.70
SN20-70B	58.17	58.52	0.35	5.44	16.60
	70.95	71.32	0.37	1.02	3.20
	82.29	84.45	2.16	1.03	4.00
SN20-73	41.07	50.41	9.34	1.29	4.00

**TABLE 10.4**  
**SOUTH ZONE 2017 TO 2021 DRILL HOLE INTERCEPTS >1 G/T AU**

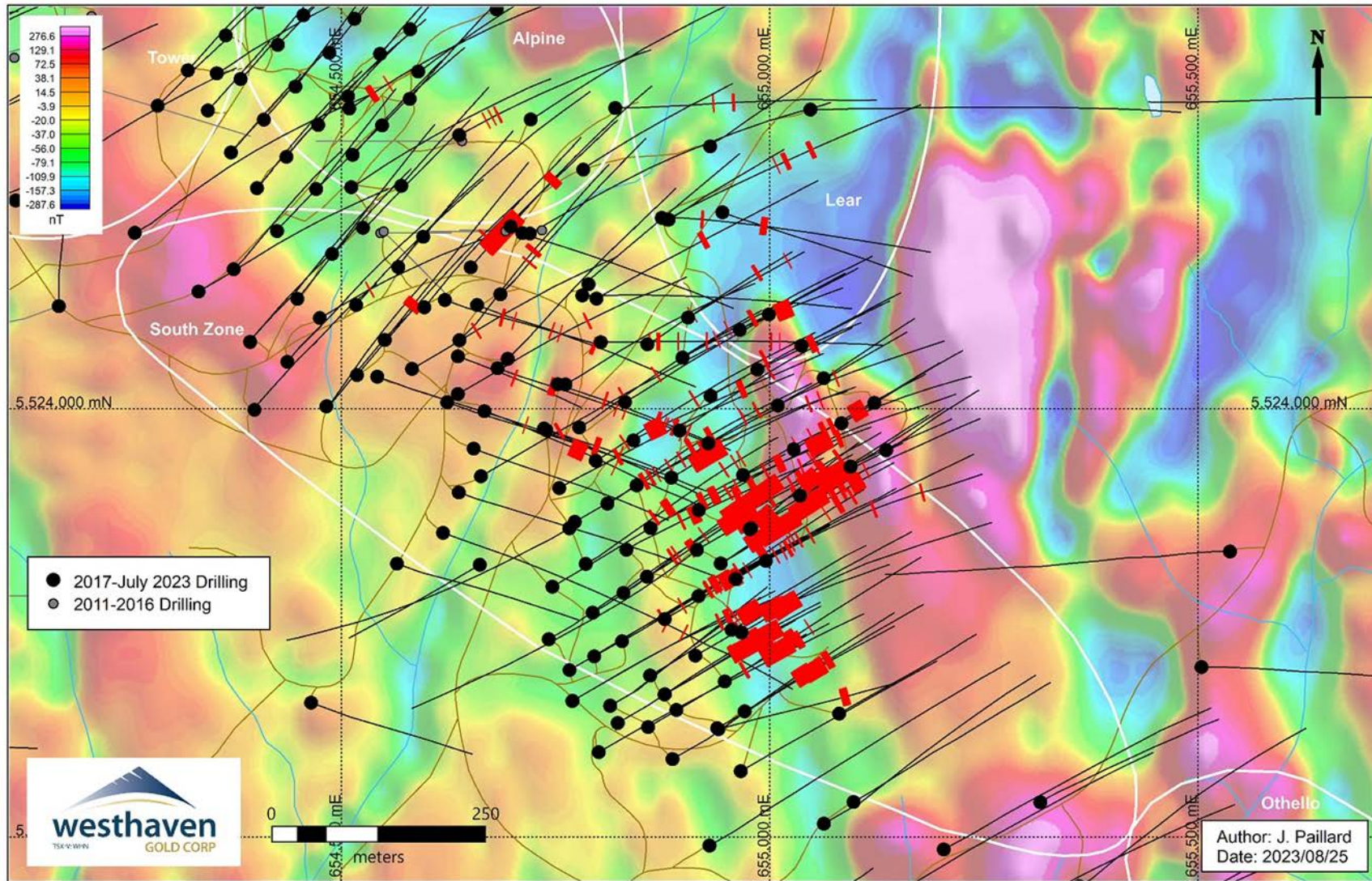
<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
SN20-73	76.93	77.25	0.32	17.45	61.50
SN20-80	165.00	166.00	1.00	1.18	2.60
	198.00	201.00	3.00	1.64	14.50
SN21-150	32.80	34.46	1.66	2.27	3.00
SN21-152	291.00	293.00	2.00	1.21	144.50
SN21-159	347.17	350.17	3.00	1.98	39.10
	361.60	371.00	9.40	1.88	15.90
SN21 -160	276.00	290.00	14.00	1.58	3.50
SNR21-01	138.00	144.30	6.30	2.46	3.40
	180.23	232.00	51.77	4.22	46.40
SNR21-02	161.90	246.00	84.10	2.66	14.90
SNR21-03	79.20	154.00	74.80	3.18	18.90
	219.75	220.27	0.52	20.20	720.00
	238.86	243.49	4.63	1.38	5.80
	258.59	280.61	22.02	2.86	11.70
SNR21-04	82.00	123.55	41.55	8.17	34.60
	219.00	315.30	96.30	1.64	8.00
	329.40	338.04	8.64	1.90	7.20
	362.02	366.56	4.54	3.85	117.50
SNR21-05	181.00	257.33	76.33	2.93	11.30
SNR21-06	42.78	87.00	44.22	1.57	4.10
	197.00	253.00	56.00	1.44	5.70
	265.00	283.12	18.12	1.07	3.50
	325.88	333.50	7.62	3.74	31.00
SNR21-07	51.00	92.25	41.25	4.47	17.70
SNR21-08	122.00	148.60	26.60	2.48	14.30
SNR21-18	211.00	223.00	12.00	1.27	7.50
SNR21-19	189.64	191.44	1.80	4.58	12.60
	279.00	280.00	1.00	3.89	19.50
SNR21-20	45.00	110.28	65.28	1.18	3.40
SNR21-23	216.50	217.00	0.50	3.36	2.80
SNR21-24	99.50	100.12	0.62	5.29	29.70
	239.58	244.51	4.93	3.80	11.30
SNR21-25	179.00	180.50	1.50	1.44	8.40
	342.79	343.09	0.30	3.09	50.90
SNR21-27	30.00	62.00	32.00	1.88	5.00
	218.00	228.00	10.00	2.39	9.20
SNR21-29	182.00	189.00	7.00	3.26	7.60

**TABLE 10.4**  
**SOUTH ZONE 2017 TO 2021 DRILL HOLE INTERCEPTS >1 G/T AU**

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
	223.00	231.00	8.00	1.93	3.50
	293.50	295.00	1.50	2.28	4.00
	321.00	323.40	2.40	2.29	3.30
SNR21-30	122.20	161.43	39.23	1.42	9.80
SNR21-32	208.00	214.87	6.87	1.71	6.60
SNR21-33	77.95	80.00	2.05	3.24	6.40
SNR21-34	108.00	123.00	15.00	1.26	2.90
SNR21-35	42.00	127.45	85.45	1.09	2.40
SNR21-36	167.00	170.00	3.00	3.41	8.10
SNR21 -37	73.00	90.00	17.00	1.21	2.5
SNR21-41	138.00	139.00	1.00	1.63	2.77
SNR21-45	86.00	87.00	1.00	9.02	11.85
	109.00	110.00	1.00	2.50	10.4
	140.00	142.00	2.00	2.00	9.65
SNR21-48	21.00	39.00	18.00	1.75	2.91
	55.00	59.00	4.00	6.04	20.42
	55.00	56.00	1.00	19.05	47.2
SNR21-49	18.70	30.00	11.30	1.17	5.90
	20.00	25.00	5.00	1.74	7.70
	24.00	25.00	1.00	4.84	9.54
SNR21-51	83.00	86.00	3.00	1.36	7.35
SNR21-53	50.00	51.94	1.94	1.03	15.20
	90.00	91.98	1.98	7.22	15.34
	90.00	91.00	1.00	10.9	23.50
SNR21-54	233.00	236.00	3.00	4.84	6.16
SNR21-55	44.00	52.00	8.00	20.22	88.97
	47.00	50.13	3.13	45.23	195.64
	97.00	109.00	12.00	1.05	4.28
	106.74	108.26	1.52	6.51	23.8
	203.00	220.00	17.00	1.02	1.24
	214.00	217.00	3.00	5.25	5.44
SNR21-56	215.00	216.00	1.00	1.26	9.93
SNR21-57	215.00	218.00	3.00	1.44	4.94

*Source: Westhaven (2021)*

**FIGURE 10.8 SOUTH ZONE – DRILL HOLE INTERVALS >1 g/t AU (2017 TO 2021 DRILLING) ON TOTAL FIELD GROUND MAGNETICS**



Source: Westhaven (2023) Coordinates UTM NAD83 Zone 10N



Subsequent to the South Zone drilling used in the current Mineral Resource Estimate, an additional 17 drill holes totalling 4,902 m in drill holes SNR21-41 to SNR21-57 were completed in the northwestern part of the area of interest. A total of 2,259 samples were collected and assayed.

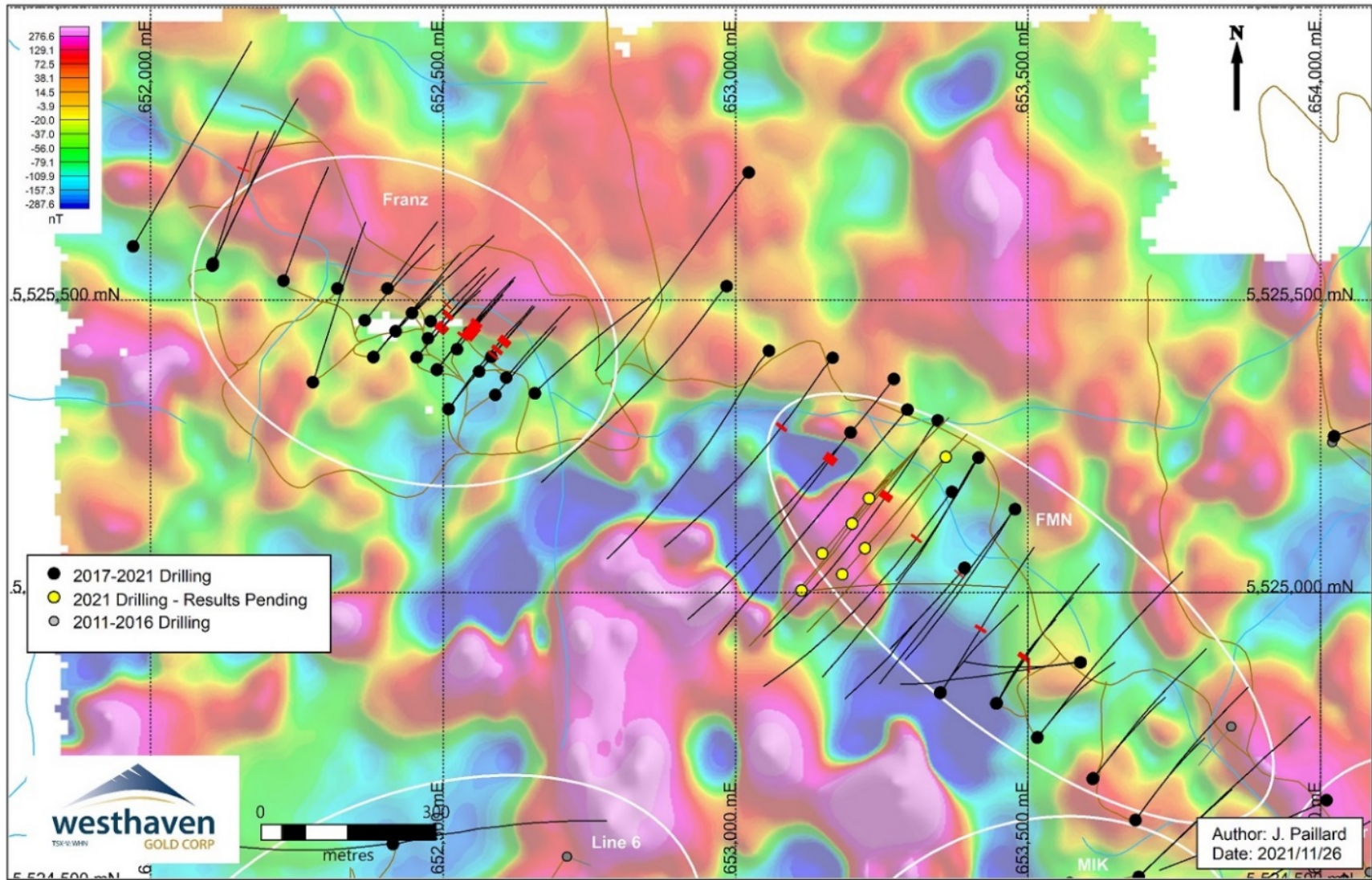
Review of the geological data derived from this recent drilling suggests that the current modelled projection of Vein 1 works well, that Vein 1 may pinch out at shallow depth (also as indicated by the Mineral Resource model), and that the VZ1F Fault continues to the northwest and explains stratigraphic offsets. Drill holes SNR21-52, SNR21-53 and SNR21-55 may extend Vein Zone 2 farther to the northwest, inside the current Veinlet Domain, and additional interpretation was deemed to be required.

## **10.5 ADDITIONAL DRILLING 2018 TO 2021**

Additional drilling was completed outside of the South Zone between 2018 and 2021. During 2019, Westhaven recognized that the previous drilling at the Tower Zone had potentially intercepted parts of Vein Zone 1 and Vein Zone 2. Several drill holes were planned in 2019 to test this hypothesis, and were included in the current Mineral Resource Estimate. Drilling in 2020 continued to explore this trend from the South Zone in northwesterly 100 m step-outs through the Tower and Mik zones, which resulted in the discovery of the FMN Zone. In August of 2020, prospecting discovered surface outcrops of mineralized epithermal quartz veining, dubbed the Franz Zone, to the northwest along the same trend. Drilling at the Franz Zone commenced in September 2020. At that time, Vein 1 had been traced successfully along a 4-km trend from the South Zone to the Franz Zone.

The FMN and Franz Zones were further drill tested in 2021, and Westhaven had completed 42 drill holes totalling 21,015.4 m in the FMN Zone and 28 drill holes totalling 7,732.0 m in the Franz Zone. Drilling of Franz and FMN has identified mineralized grades, widths and geology similar to the South Zone. All three zones are at roughly the same elevation, and it appears the paleo-boiling zone favourable to hosting gold mineralization is preserved in the FMN and Franz Zones. Distinct differences from the South Zone include the much higher silver content in FMN and Franz and presence of potassium feldspar within the mineralization. In the South Zone, potassium feldspar occurs in quartz veins below the mineralized zone. Drill hole locations for FNM and Franz are shown on Figure 10.9, and drill hole intersections >1 g/t Au are listed in Table 10.5.

**FIGURE 10.9 2018 TO 2021 DRILL HOLE INTERVALS >1 G/T AU – FMN AND FRANZ ZONES ON TOTAL FIELD GROUND MAGNETICS**



Source: Westhaven (2021)

Coordinates UTM NAD83 Zone 10N

<b>Drill Hole ID</b>	<b>Zone</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
SN20-101	Franz	18.4	26.1	7.8	14.84	40.68
	Franz	41.1	57.4	16.3	2.37	31.15
SN20-102	Franz	51.1	54.5	3.4	5.04	24.02
SN20-107	Franz	24.5	32	7.5	1.93	23.6
SN20-108	Franz	37.1	71.2	34.1	2.07	16.5
SN20-111	Franz	56.1	57.5	1.3	1.49	29.98
SN20-112	Franz	68.4	77.3	9	2.38	63.59
SN20-124	Franz	230.2	230.8	0.6	1.51	1.11
SN20-127	Franz	99.5	103.6	3.6	1.24	33.45
SN20-134	Franz	80.3	98	17.7	2.85	56.25
SN20-139	FMN	271.2	291	19.9	2.62	139.75
SN20-145	FMN	224.1	230	6	2.36	98.4
SN20-147	FMN	182.4	188	5.6	1.06	33.41
SN21-150	FMN	32.8	34.46	1.66	2.27	2.97
SN21-158	FMN	139.74	143.2	3.46	9.46	151.82
SN21-161	FMN	220.32	236.29	15.97	9.15	27.43
SN21-163	FMN	212	218	6	1.98	10.48
SN21-167	FMN	81.95	104	22.05	2.2	5.88
SN21-178	FMN	167	176.24	9.24	1.09	4.96
SN21-179	FMN	239	240	1	1.02	20.7
SN21-186	FMN	200	206	6	1.20	6.12
SN21-188	FMN	70	81	11	1.39	6.62
	FMN	115.25	116.25	1	3.94	1.82
SN21-190	FMN	39	66	27	1.74	5.88
SN21-191	FMN	24	41	17	1.20	1.93
	FMN	69	72	3	1.58	1.63
SN21-194	FMN	317.99	320.23	2.24	12.45	270

*Source: Westhaven (2021)*

55 drill holes totalling 26,093 m were completed on other areas of the Property from 2018 to 2021, as far east as the Romeo Zone (see Figure 10.1). These drill holes targeted geophysical features (interpreted magnetic lineaments and alteration zones, CSAMT or DC resistivity responses, etc.) and geochemical anomalies (e.g., gold in soils or arsenic in rocks), or were step-out drilling from the known zones. Drill hole SN20-88 (Mik) returned 2.58 g/t Au over 3.0 m, and drill hole SN20-103 (Tower) returned 1.81 g/t Au over 1.1 m.

## 10.6 DRILLING PROGRAMS IN 2022 AND 2023

Drilling in 2022 and 2023 involved completion of 155 drill holes totalling 42,495.21 m in six areas of interest that had been previously explored (Franz, FMN, Portia, Alpine, South, and Othello Zones and Kirton Target area) and two new areas, HYD BX-02 and HYD BX-04. This drilling is summarized in Table 10.6 and described below. Drill hole collar details for the 2022 and 2023 work are provided in Table 10.7 and the drill hole locations for 2022 are represented in Figure 10.10. The drilling was completed under the supervision of Westhaven, using the procedures described above.

<b>Target</b>	<b>No. of Holes</b>	<b>Total Metres</b>	<b>Total Samples</b>
Franz*	6	862.00	492
FMN	96	25,102.53	12,112
Portia	2	577.00	231
Alpine	24	6,321.53	2,982
South Zone	3	1,302.00	485
Othello	3	891.00	338
HydBx02	11	3,245.04	1,278
HydBx04	4	1,275.00	513
Kirton	6	2,489.00	1,060

*Source:* Westhaven (2023)

*Note:* \*3 drill holes completed totalling 346 m in 2022 and 3 drill holes completed totalling 516 m in 2023 at Franz.

**TABLE 10.7**  
**2022-2023 SHOVELNOSE DRILL HOLE COLLAR LOCATIONS AND INFORMATION**

<b>Drill Hole ID</b>	<b>Year</b>	<b>Target/Zone</b>	<b>Easting<sup>1</sup></b>	<b>Northing<sup>1</sup></b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (deg)</b>	<b>Dip (deg)</b>	<b>Survey Method<sup>2</sup></b>
SN22-196	2022	FMN	653,271	5,525,126	1,408	209	41	-45.8	DGPS
SN22-197	2022	FMN	653,271	5,525,125	1,408	140	41	-65.7	DGPS
SN22-198	2022	FMN	653,309	5,525,102	1,414	170	40	-45.5	DGPS
SN22-199	2022	FMN	653,309	5,525,102	1,414	167	37	-64.6	DGPS
SN22-200	2022	FMN	653,273	5,525,066	1,413	266	38	-45.6	DGPS
SN22-201	2022	FMN	653,230	5,525,009	1,418	344	37	-46.3	DGPS
SN22-202	2022	FMN	653,229	5,525,009	1,418	425	37	-59.9	DGPS
SN22-203	2022	FMN	653,333	5,525,051	1,420	170	41.3	-44.8	DGPS
SN22-204	2022	FMN	653,333	5,525,051	1,420	140	41.3	-65.2	DGPS
SN22-205	2022	FMN	653,302	5,525,018	1,418	224	40.5	-46.2	DGPS
SN22-206	2022	FMN	653,265	5,524,974	1,424	329	40	-45.3	DGPS
SN22-207	2022	FMN	653,264	5,524,973	1,424	398	40	-60.8	DGPS
SN22-208	2022	FMN	653,342	5,524,977	1,428	299	38.6	-44.6	DGPS
SN22-209	2022	FMN	653,306	5,524,941	1,429	400	37.4	-44.5	DGPS
SN22-210	2022	FMN	653,306	5,524,940	1,429	386	37.4	-59.2	DGPS
SN22-211	2022	FMN	653,447	5,525,021	1,419	257	217.6	-45.9	DGPS
SN22-212	2022	FMN	653,447	5,525,022	1,419	260	217.6	-61.9	DGPS
SN22-213	2022	FMN	653,454	5,524,967	1,425	173	221.2	-45.7	DGPS
SN22-214	2022	FMN	653,411	5,524,987	1,427	215	220	-45.0	DGPS
SN22-215	2022	FMN	653,516	5,525,112	1,424	431	220	-45.3	DGPS
SN22-216	2022	FMN	653,495	5,524,930	1,430	167	215.9	-44.3	DGPS
SN22-217	2022	FMN	653,470	5,525,134	1,420	311	214.5	-46.3	DGPS
SN22-218	2022	FMN	653,470	5,525,135	1,419	353	214.5	-55.0	DGPS
SN22-219	2022	Alpine	654,543	5,524,415	1,431	315	41	-60.8	DGPS
SN22-220	2022	Alpine	654,547	5,524,331	1,413	201	43.8	-50.1	DGPS
SN22-221	2022	Alpine	654,508	5,524,365	1,422	255	42.2	-60.0	DGPS

**TABLE 10.7**  
**2022-2023 SHOVELNOSE DRILL HOLE COLLAR LOCATIONS AND INFORMATION**

<b>Drill Hole ID</b>	<b>Year</b>	<b>Target/Zone</b>	<b>Easting<sup>1</sup></b>	<b>Northing<sup>1</sup></b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (deg)</b>	<b>Dip (deg)</b>	<b>Survey Method<sup>2</sup></b>
SN22-222	2022	FMN	653,523	5,525,040	1,426	299	216.1	-46.1	DGPS
SN22-223	2022	Alpine	654,473	5,524,331	1,422	309	41.1	-60.5	DGPS
SN22-224	2022	FMN	653,523	5,525,040	1,426	353	216.1	-51.9	DGPS
SN22-225	2022	Alpine	654,436	5,524,294	1,419	324	39.6	-60.4	DGPS
SN22-226	2022	FMN	653,574	5,525,027	1,429	335	220	-47.4	DGPS
SN22-227	2022	Alpine	654,401	5,524,258	1,414	351	40	-60.0	DGPS
SN22-227b	2022	Alpine	654,401	5,524,258	1,414	42	40	-45.9	DGPS
SN22-228	2022	Alpine	654,580	5,524,443	1,432	369	39.6	-60.0	DGPS
SN22-229	2022	FMN	653,574	5,525,027	1,429	377	220	-57.3	DGPS
SN22-230	2022	Alpine	654,580	5,524,362	1,413	333	40.2	-49.0	DGPS
SN22-231	2022	FMN	653,428	5,525,036	1,416	248	220	-45.8	DGPS
SN22-232	2022	Alpine	654,515	5,524,455	1,440	324	39.2	-59.6	DGPS
SN22-233	2022	FMN	653,460	5,525,083	1,419	374	218.1	-46.2	DGPS
SN22-234	2022	Alpine	654,486	5,524,416	1,433	270	36.7	-59.7	DGPS
SN22-235	2022	FMN	653,460	5,525,083	1,419	416	218.1	-55.9	DGPS
SN22-236	2022	Alpine	654,446	5,524,376	1,434	282	39.5	-60.9	DGPS
SN22-237	2022	Alpine	654,409	5,524,338	1,429	258	42.1	-59.9	DGPS
SN22-238	2022	FMN	653,453	5,524,995	1,422	224	220.1	-45.2	DGPS
SN22-239	2022	Alpine	654,371	5,524,299	1,422	255	43	-60.4	DGPS
SN22-240	2022	FMN	653,454	5,524,996	1,422	265	220.1	-64.2	DGPS
SN22-241	2022	Alpine	654,344	5,524,348	1,429	216	43.3	-59.5	DGPS
SN22-242	2022	FMN	653,474	5,524,945	1,429	191	217.5	-45.1	DGPS
SN22-243	2022	Alpine	654,382	5,524,385	1,437	231	45.1	-60.3	DGPS
SN22-244	2022	FMN	653,474	5,524,945	1,429	213	217.5	-62.9	DGPS
SN22-245	2022	Alpine	654,426	5,524,425	1,442	240	44.9	-59.9	DGPS
SN22-246	2022	FMN	653,624	5,525,006	1,434	419	215.1	-44.9	DGPS

**TABLE 10.7**  
**2022-2023 SHOVELNOSE DRILL HOLE COLLAR LOCATIONS AND INFORMATION**

<b>Drill Hole ID</b>	<b>Year</b>	<b>Target/Zone</b>	<b>Easting<sup>1</sup></b>	<b>Northing<sup>1</sup></b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (deg)</b>	<b>Dip (deg)</b>	<b>Survey Method<sup>2</sup></b>
SN22-247	2022	Alpine	654,455	5,524,460	1,444	252	45.2	-60.0	DGPS
SN22-248	2022	Alpine	654,493	5,524,497	1,454	240	44.2	-60.0	DGPS
SN22-249	2022	HYD BX 02	655,485	5,524,972	1,481	306	60.1	-45.1	DGPS
SN22-250	2022	FMN	653,625	5,525,006	1,434	404	215.1	-55.8	DGPS
SN22-251	2022	HYD BX 02	655,602	5,525,034	1,470	261	59.1	-45.1	DGPS
SN22-252	2022	HYD BX 02	655,277	5,525,227	1,494	297	59.2	-44.9	DGPS
SN22-253	2022	FMN	653,527	5,525,006	1,428	329	217.6	-50.0	DGPS
SN22-254	2022	HYD BX 02	655,392	5,525,280	1,492	300	60.6	-45.1	DGPS
SN22-255	2022	FMN	653,674	5,525,134	1,453	503	221.1	-46.4	DGPS
SN22-256	2022	HYD BX 02	655,199	5,525,346	1,508	330	59.8	-45.1	DGPS
SN22-257	2022	HYD BX 02	655,156	5,525,163	1,492	306	59.8	-45.1	DGPS
SN22-258	2022	HYD BX 02	655,382	5,524,910	1,485	282	59.9	-44.9	DGPS
SN22-259	2022	FMN	653,536	5,524,979	1,430	308	219.25	-45.8	DGPS
SN22-260	2022	Othello	655,604	5,523,117	1,282	389	60.56	-45.0	DGPS
SN22-261	2022	FMN	653,565	5,524,941	1,431	284	220.24	-45.6	DGPS
SN22-262	2022	Othello	655,775	5,523,211	1,308	168	60.26	-60.6	DGPS
SN22-262b	2022	Othello	655,775	5,523,211	1,308	357	60.26	-45.2	DGPS
SN22-263	2022	FMN	653,565	5,524,942	1,431	291	220.24	-57.9	DGPS
SN22-264	2022	HYD BX 02	656,629	5,523,557	1,473	300	205.26	-44.6	DGPS
SN22-265	2022	FMN	653,346	5,525,296	1,397	302	39.7	-44.6	DGPS
SN22-266	2022	HYD BX 02	656,532	5,523,379	1,452	336	203.65	-45.3	HH-GPS
SN22-267	2022	FMN	653,345	5,525,295	1,397	158	39.7	-69.1	DGPS
SN22-268	2022	HYD BX 02	656,916	5,523,378	1,498	321	205.1	-44.8	DGPS
SN22-269	2022	FMN	653,167	5,525,404	1,364	308	41.1	-45.6	DGPS
SN22-270	2022	HYD BX 02	656,973	5,523,543	1,500	318	204.2	-44.7	DGPS
SN22-271	2022	FMN	653,170	5,525,400	1,364	208	41.1	-69.3	DGPS

**TABLE 10.7**  
**2022-2023 SHOVELNOSE DRILL HOLE COLLAR LOCATIONS AND INFORMATION**

<b>Drill Hole ID</b>	<b>Year</b>	<b>Target/Zone</b>	<b>Easting<sup>1</sup></b>	<b>Northing<sup>1</sup></b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (deg)</b>	<b>Dip (deg)</b>	<b>Survey Method<sup>2</sup></b>
SN22-272	2022	Alpine	654,318	5,524,396	1,434	255	42.6	-60.2	DGPS
SN22-273	2022	FMN	653,243	5,525,336	1,382	299	39.2	-46.3	DGPS
SN22-274	2022	Alpine	654,363	5,524,437	1,444	252	43.5	-60.5	DGPS
SN22-275	2022	Alpine	654,403	5,524,477	1,455	297	44	-60.0	DGPS
SN22-276	2022	FMN	653,412	5,525,234	1,412	254	38	-44.7	DGPS
SN22-277	2022	Alpine	654,439	5,524,515	1,456	228	45	-60.0	DGPS
SN22-278	2022	FMN	653,328	5,525,011	1,423	226	40.1	-45.2	DGPS
SN22-279	2022	Alpine	654,284	5,524,354	1,428	222	45.2	-59.8	DGPS
SN22-280	2022	FMN	653,760	5,524,939	1,461	399	216.9	-44.5	DGPS
SN22-281	2022	FMN	653,328	5,525,011	1,423	302	40.1	-65.2	DGPS
SN22-282	2022	FMN	653,761	5,524,940	1,461	495	216.9	-52.0	DGPS
SN22-283	2022	FMN	653,185	5,525,181	1,391	188	39.65	-45.7	DGPS
SN22-284	2022	FMN	653,710	5,524,874	1,445	337	220.48	-44.9	DGPS
SN22-285	2022	FMN	653,184	5,525,180	1,391	173	39.65	-64.9	DGPS
SN22-286	2022	FMN	653,710	5,524,874	1,445	342	220.48	-51.1	DGPS
SN22-287	2022	FMN	653,128	5,525,125	1,395	92	39.04	-45.3	DGPS
SN22-288	2022	FMN	653,592	5,524,892	1,433	255	218.47	-45.2	DGPS
SN22-289	2022	FMN	653,592	5,524,892	1,433	315	218.47	-56.3	DGPS
SN22-290	2022	FMN	653,129	5,525,195	1,377	156	40.1	-45.6	DGPS
SN22-291	2022	FMN	653,127	5,525,124	1,395	59	39.04	-51.8	DGPS
SN22-292	2022	FMN	653,128	5,525,196	1,377	150	40.1	-71.0	DGPS
SN22-293	2022	FMN	653,074	5,525,124	1,372	107	39.8	-46.1	DGPS
SN22-294	2022	FMN	653,091	5,525,072	1,390	74	40.35	-45.0	DGPS
SN22-295	2022	FMN	653,038	5,525,092	1,365	375	39.9	-45.9	DGPS
SN22-296	2022	South Zone	654,775	5,523,873	1,338	476	240.1	-45.6	DGPS
SN22-297	2022	FMN	653,087	5,525,241	1,350	231	39.7	-45.0	DGPS



**TABLE 10.7**  
**2022-2023 SHOVELNOSE DRILL HOLE COLLAR LOCATIONS AND INFORMATION**

<b>Drill Hole ID</b>	<b>Year</b>	<b>Target/Zone</b>	<b>Easting<sup>1</sup></b>	<b>Northing<sup>1</sup></b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (deg)</b>	<b>Dip (deg)</b>	<b>Survey Method<sup>2</sup></b>
SN22-298	2022	FMN	653,087	5,525,240	1,350	192	39.7	-71.0	DGPS
SN22-299	2022	FMN	653,009	5,525,135	1,354	282	39.8	-45.4	DGPS
SN22-300	2022	South Zone	654,915	5,523,835	1,368	527	232.82	-51.5	DGPS
SN22-301	2022	FMN	653,011	5,525,134	1,352	351	39.8	-52.3	DGPS
SN22-302	2022	South Zone	654,662	5,523,818	1,328	299	239.7	-51.4	DGPS
SN22-303	2022	FMN	653,043	5,525,251	1,343	219	39.9	-44.9	DGPS
SN22-304	2022	FMN	652,999	5,525,217	1,337	258	39.6	-44.0	DGPS
SN22-305	2022	Portia	654,017	5,525,123	1,519	200	43	-44.7	DGPS
SN22-306	2022	Portia	653,945	5,525,050	1,498	377	40.9	-44.8	HH-GPS
SN22-307	2022	FMN	652,974	5,525,172	1,339	281	37.2	-44.8	HH-GPS
SN22-308	2022	FMN	652,955	5,525,150	1,341	275	37.3	-54.0	HH-GPS
SN22-309	2022	FMN	652,992	5,525,283	1,338	212	39.76	-44.5	HH-GPS
SN22-310	2022	FMN	652,963	5,525,229	1,325	284	40.2	-44.4	HH-GPS
SN22-311	2022	FMN	652,922	5,525,200	1,326	320	37.2	-44.7	HH-GPS
SN22-312	2022	FMN	652,945	5,525,283	1,325	227	39.6	-44.8	HH-GPS
SN22-313	2022	FMN	652,903	5,525,242	1,316	284	38.1	-43.9	HH-GPS
SN22-314	2022	FMN	653,044	5,525,328	1,343	176	37.9	-44.8	HH-GPS
SN22-315	2022	FMN	652,985	5,525,341	1,335	205	37.9	-44.3	HH-GPS
SN22-316	2022	FMN	652,926	5,525,353	1,324	200	37.8	-43.6	HH-GPS
SN22-317	2022	FMN	652,879	5,525,296	1,316	275	37	-44.2	HH-GPS
SN22-318	2022	FMN	652,879	5,525,295	1,318	266	37	-54.8	HH-GPS
SN22-319	2022	FMN	652,834	5,525,321	1,314	269	37.9	-46.8	HH-GPS
SN22-320	2022	FMN	653,016	5,525,384	1,340	149	38	-45.4	HH-GPS
SN22-321	2022	FMN	652,972	5,525,404	1,333	164	38.5	-45.7	HH-GPS
SN22-322	2022	FMN	652,858	5,525,354	1,319	218	37.8	-45.3	HH-GPS
SN22-323	2022	FMN	652,896	5,525,397	1,320	188	38.9	-45.7	HH-GPS

**TABLE 10.7**  
**2022-2023 SHOVELNOSE DRILL HOLE COLLAR LOCATIONS AND INFORMATION**

<b>Drill Hole ID</b>	<b>Year</b>	<b>Target/Zone</b>	<b>Easting<sup>1</sup></b>	<b>Northing<sup>1</sup></b>	<b>Elevation (m)</b>	<b>Length (m)</b>	<b>Azimuth (deg)</b>	<b>Dip (deg)</b>	<b>Survey Method<sup>2</sup></b>
SN22-324	2022	FMN	652,822	5,525,385	1,309	230	38	-43.9	HH-GPS
SN22-325	2022	FMN	652,796	5,525,353	1,307	245	37.7	-43.5	HH-GPS
SN22-326	2022	FMN	652,853	5,525,420	1,314	176	38.8	-44.3	HH-GPS
SN22-327	2022	FMN	652,762	5,525,388	1,301	260	38.1	-43.9	HH-GPS
SN22-328	2022	FMN	652,788	5,525,421	1,303	212	37.9	-45.3	HH-GPS
SN22-329	2022	FMN	652,814	5,525,450	1,305	164	39.9	-45.8	HH-GPS
SN22-330	2022	FMN	652,720	5,525,428	1,300	210	39.5	-46.3	HH-GPS
SN22-331	2022	FMN	652,752	5,525,455	1,294	249	39.3	-44.8	HH-GPS
SN22-332	2022	FMN	652,752	5,525,455	1,294	192	359.6	-44.9	HH-GPS
SN22-333	2022	Franz	652,589	5,525,452	1,282	108	220.2	-45.2	HH-GPS
SN22-334	2022	Franz	652,608	5,525,435	1,286	78	219	-45.1	HH-GPS
SN22-335	2022	Franz	652,629	5,525,426	1,288	160	218.9	-45.2	HH-GPS
SN23-336	2023	Franz	652,567	5,525,467	1,281	155	220	-44.8	HH-GPS
SN23-337	2023	Franz	652,567	5,525,467	1,281	107	220	-54.8	HH-GPS
SN23-338	2023	Franz	652,306	5,525,706	1,259	254	220.3	-46.0	HH-GPS
SN23-339	2023	HYD BX 02	655,348	5,525,120	1,476	347	58.3	-44.4	HH-GPS
SN23-340	2023	HYD BX 02	655,300	5,525,043	1,468	332	60.2	-44.6	HH-GPS
SN23-341	2023	HYD BX 02	655,227	5,525,003	1,459	251	59.9	-45.5	HH-GPS
SN23-342	2023	HYD BX 02	655,226	5,525,003	1,459	233	59.9	-65.0	HH-GPS
SN23-343	2023	Kirton	651,750	5,523,614	1,311	479	280.8	-45.7	HH-GPS
SN23-344	2023	Kirton	651,751	5,523,614	1,311	233	280.8	-65.3	HH-GPS
SN23-345	2023	Kirton	651,787	5,523,590	1,306	500	62.8	-44.4	HH-GPS
SN23-346	2023	Kirton	651,785	5,523,589	1,306	235	62.8	-61.8	HH-GPS
SN23-347	2023	Kirton	651,732	5,523,701	1,332	512	277.7	-44.8	HH-GPS
SN23-348	2023	Kirton	651,732	5,523,704	1,332	530	62.1	-44.5	HH-GPS

Source: Westhaven (2023)

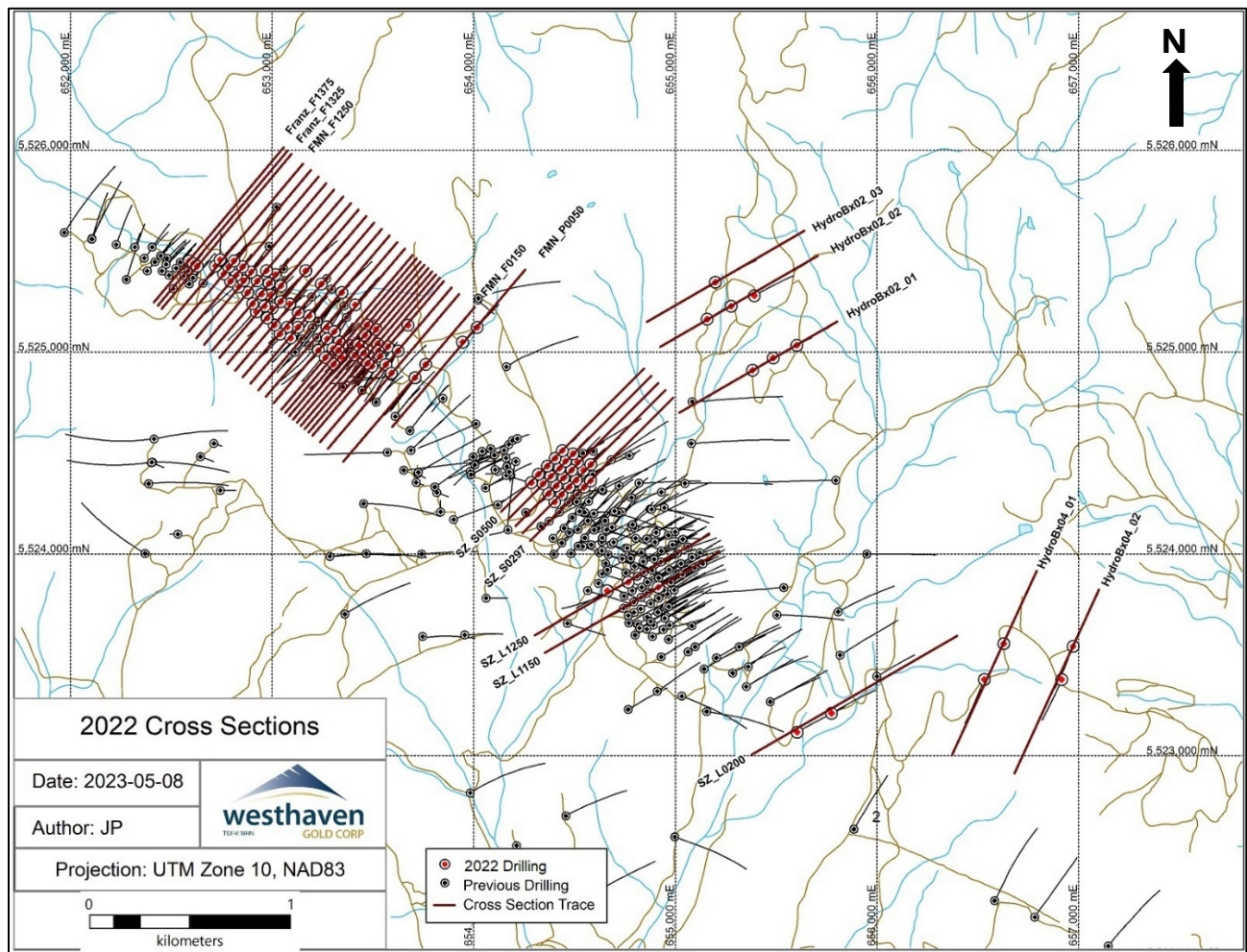
Notes: <sup>1</sup> Coordinates UTM NAD83 Zone 10N.

<sup>2</sup> DGPS = differential GPS; HH-GPS = Handheld GPS (Garmin GPS averaged ±0.5 m accuracy).

The 2022 drilling results were incorporated into a common database with previous drilling programs to facilitate interpretation. Cross-sections (Figure 10.10) were created with a  $\pm 25$  m envelope around most cross-sections. The cross-section lines were designed to intersect the vein zone targets perpendicular to their strike direction. The orientations of previous and historical drill holes may not parallel the new cross-section lines, such that drill hole traces enter and exit the plane of the cross-sections.

Drill holes from 2022 and 2023 with significant mineralized intersections (intervals with weighted average  $>1$  g/t Au) are listed in Table 10.8 and corresponding assay values are shown in Figure 10.11.

**FIGURE 10.10 2022 DRILL COLLARS, HOLE TRACES AND CROSS-SECTIONS**



Source: Paarup (2023)

**TABLE 10.8**  
**SIGNIFICANT DRILL HOLE INTERCEPTS 2022-23**

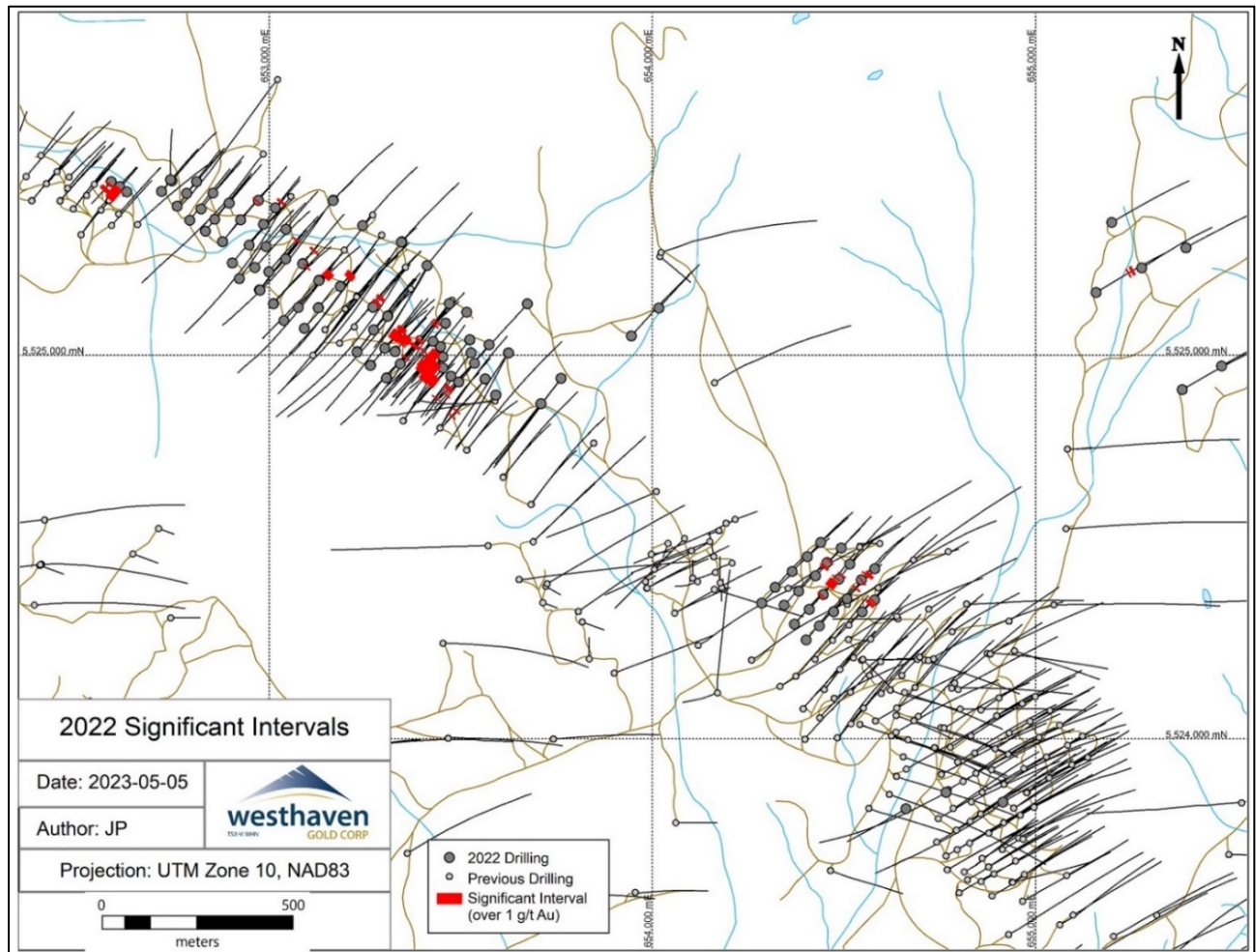
<b>Drill Hole ID</b>	<b>Zone</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
SN22-196	FMN	38.60	47.00	8.40	1.26	3.26
SN22-197	FMN	29.00	40.30	11.93	3.13	10.19
SN22-203	FMN	23.05	29.98	3.95	2.31	5.24
SN22-204	FMN	45.66	59.45	13.79	2.09	4.84
SN22-205	FMN	52.00	63.00	11.00	2.31	6.49
		61.00	63.00	2.00	5.01	9.76
SN22-206	FMN	132.74	143.00	10.26	2.22	2.13
SN22-208	FMN	29.63	32.00	2.37	1.99	3.53
		187.00	188.38	1.38	5.61	68.00
		199.00	200.00	1.00	1.54	14.00
SN22-209	FMN	150.12	151.57	1.45	3.64	12.70
SN22-210	FMN	210.44	210.92	0.48	2.93	14.25
SN22-211	FMN	22.44	32.00	9.56	1.59	8.11
		94.67	121.00	25.55	5.15	27.91
SN22-212	FMN	45.28	59.00	13.72	1.28	6.05
		79.66	84.03	4.37	5.37	17.64
		89.00	120.09	31.09	28.00	157.05
		147.96	152.00	3.87	6.04	11.11
SN22-213	FMN	42.78	47.29	4.51	2.97	12.08
SN22-214	FMN	11.72	17.81	6.09	2.71	5.73
SN22-215	FMN	220.83	222.45	1.62	4.40	23.50
SN22-217	FMN	182.63	190.62	7.99	1.51	8.16
		213.00	216.00	3.00	1.46	8.10
SN22-219	Alpine	36.75	38.65	1.90	1.52	8.62
SN22-220	Alpine	42.00	51.00	9.00	1.18	11.62
		61.00	62.00	1.00	2.60	4.03
SN22-221	Alpine	72.00	75.00	3.00	2.26	10.58
		166.01	168.00	1.99	2.49	2.44
SN22-223	Alpine	258.00	267.00	9.00	1.28	1.16
SN22-225	Alpine	306.00	307.00	1.00	1.78	1.86
SN22-226	FMN	263.00	263.80	0.80	7.42	31.00
SN22-229	FMN	283.00	296.93	13.93	6.08	364.60
SN22-234	Alpine	27.00	28.00	1.00	9.13	10.85
SN22-235	FMN	168.00	169.00	1.00	3.06	3.93
SN22-236	Alpine	59.89	64.00	4.18	1.60	2.48
		109.98	110.60	0.62	1.23	19.10
SN22-237	Alpine	96.00	100.23	4.23	1.66	7.12
SN22-238	FMN	35.00	49.06	14.06	1.21	5.39

**TABLE 10.8**  
**SIGNIFICANT DRILL HOLE INTERCEPTS 2022-23**

<b>Drill Hole ID</b>	<b>Zone</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
SN22-240	FMN	54.05	60.04	5.99	1.45	9.09
		103.00	106.02	3.02	26.95	21.74
SN22-244	FMN	163.83	164.76	0.93	2.68	65.20
SN22-245	Alpine	64.00	66.00	2.00	4.37	15.71
		71.89	72.90	1.01	6.47	24.40
		104.50	109.90	5.40	1.15	6.20
SN22-249	HYDBX-02	239.08	240.00	0.92	3.28	0.90
SN22-257	HYDBX-02	138.86	140.06	1.20	1.39	0.76
		153.00	159.00	6.00	1.23	0.48
SN22-263	FMN	213.50	214.10	0.60	3.11	287.00
		248.05	249.18	1.13	2.31	173.44
SN22-278	FMN	47.00	65.90	18.90	2.11	5.35
SN22-281	FMN	64.18	67.58	1.89	4.11	16.83
		116.65	127.58	10.93	1.42	4.40
SN22-283	FMN	56.30	64.13	7.83	2.00	9.74
SN22-285	FMN	80.00	93.62	13.62	2.12	9.31
SN22-295	FMN	218.00	222.37	4.37	2.17	4.90
SN22-298	FMN	142.58	144.69	2.11	2.11	3.53
SN22-301	FMN	197.29	198.00	0.71	1.10	18.85
SN22-304	FMN	148.14	150.00	1.86	2.62	21.98
SN22-315	FMN	101.20	104.85	3.65	2.66	3.00
SN22-317	FMN	191.00	192.00	1.00	2.07	2.28
SN22-333	Franz	10.30	14.00	3.70	39.27	55.81
		30.00	42.00	12.00	39.42	51.81
SN22-334	Franz	7.10	8.00	0.90	3.71	8.95
SN22-335	Franz	29.00	36.55	7.55	2.50	2.06
	Franz	111.38	114.73	3.35	3.08	3.27
SN23-336	Franz	35.00	49.04	14.04	1.18	16.85
SN23-337	Franz	21.25	41.00	19.75	18.41	42.64
	Franz	61.38	67.00	5.62	1.07	20.81

*Source: Westhaven (2023)*

**FIGURE 10.11 SIGNIFICANT 2022 DRILL HOLE INTERVALS >1 G/T AU**



Source: Paarup (2023)

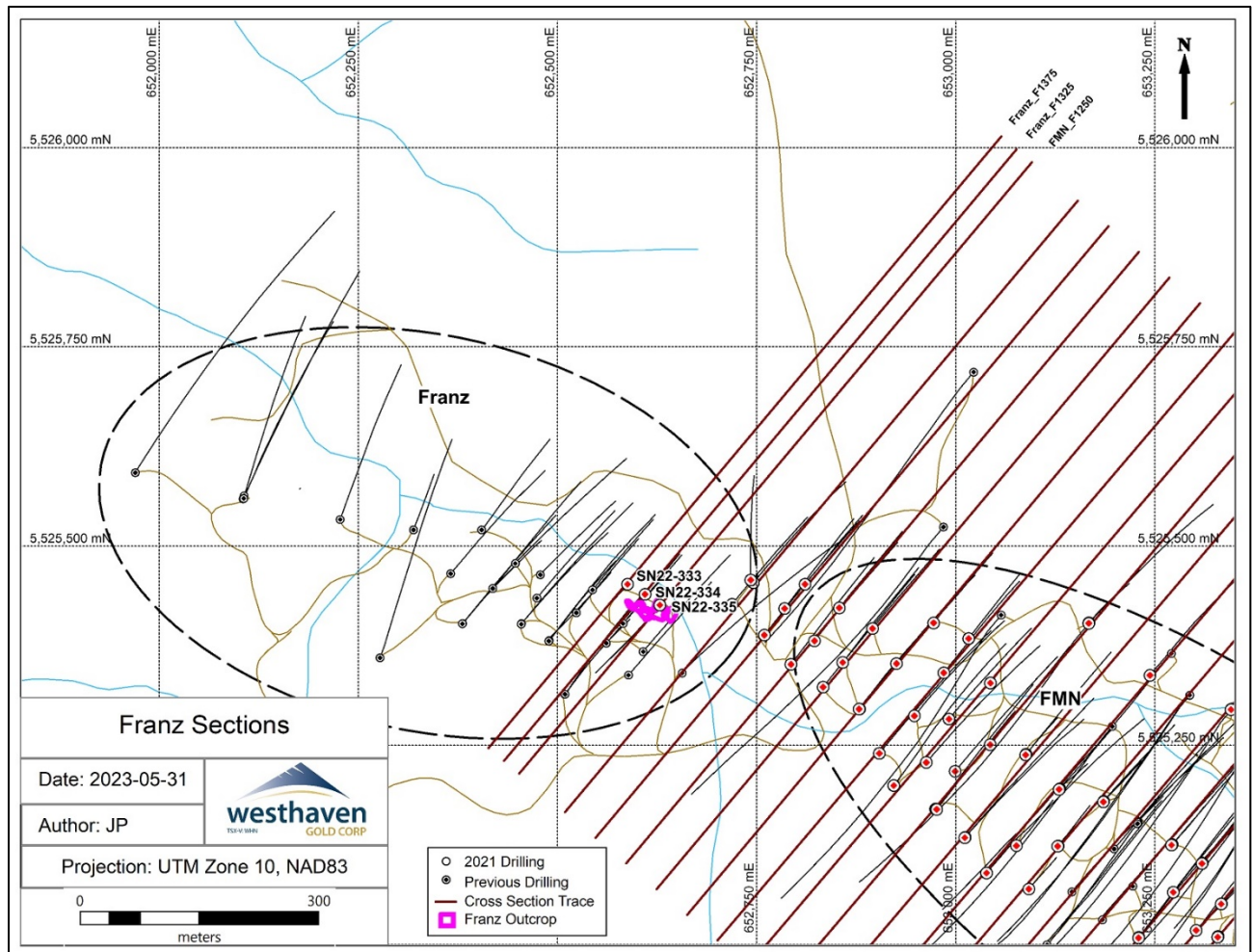
### 10.6.1 Franz Zone

The Franz Zone is the farthest known northwest extension of the Zone 1 vein system, approximately two km northwest of the South Zone (Figure 10.1). The Franz Zone was discovered in August 2020, when hydrothermal quartz breccia was discovered in outcrop. Exploration drilling in 2020 involved completion of 25 drill holes over a 640 m strike length, which identified the Zone 1 hydrothermal quartz breccia hosted in flow banded to autobrecciated rhyolite/dacite flows and associated interbedded tuffs (Peters, 2021). Drilling in 2021 involved completion of three drill holes on two cross-sections over a 100 m strike length targeting the potential northwest expansion of Vein Zone 1 (Westhaven, 2022b). High-grade gold was encountered over a 200 m strike length at the southern extent of the drilling, hosted in multiphase, colloform banded and variably brecciated quartz/chalcedony veins with adularia/ginguro, like that in the South Zone and FMN Zone (Westhaven, 2021).

### 10.6.1.1 2022 Drilling

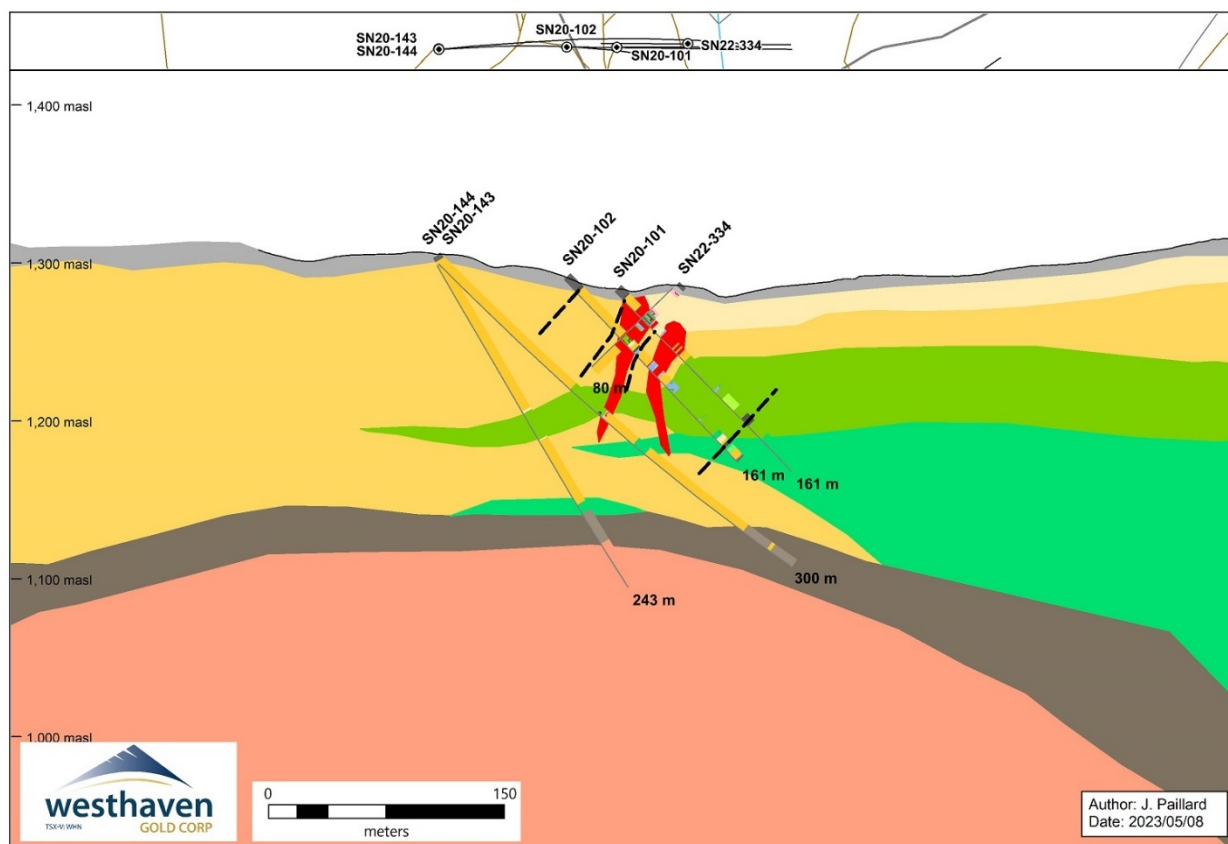
Franz was tested by additional drilling in 2022 to intersect the down-dip (southwest) extension of shallow mineralization. Three drill holes on three different cross-sections were collared from individual pads situated immediately adjacent to the discovery outcrop (Figure 10.12). Cross-section F1350 is shown in Figure 10.13.

**FIGURE 10.12 FRANZ ZONE 2022 DRILL HOLE COLLAR PLAN**



Source: Paarup (2023)

**FIGURE 10.13 FRANZ ZONE CROSS-SECTIONAL PROJECTION F1350**



*Source: Paarup (2023)*

The drilling and geological logging indicate that the underlying lithologies can be generally divided into three main packages: 1) an upper rhyolite package composed of a hornblende-phyric rhyolite flow, interbedded coherent and minor autobrecciated rhyolite flows, hydrothermally brecciated rhyolite, and a xenolithic rhyolite flow interbedded with rhyolite tuff; 2) a middle intermediate package composed of dacite flows with a minor autobrecciated dacite flow, andesite flows and minor interbedded autobrecciated andesite flow; and 3) a lower sequence of a basal epiclastic conglomerate. The epiclastic conglomerate potentially marks the contact between the overlying Spences Bridge Group and the basement, composed of granodiorite of the Nicola Group. Overburden in this cross-section was thicker than anticipated.

Faults intersected in drill holes SN20-101 and SN20-102 appear to be northeast/southwest oriented. In drill hole SN22-333, Vein Zone 1 was terminated abruptly by a gouge contact, perhaps indicating post-mineralizing faulting displacement of the Franz showing. Similar faulting is evident at FMN, where Vein Zone 1 is offset into several “vein blocks”.

Drill hole SN22-334 (Figure 10.13) intercepted Vein Zone 1 from 7.10 m to 57.48 m, consisting of m-scale polyphase colloform banded quartz/chalcedony veins and brecciated quartz vein intervals hosted in rhyolite tuffs with subordinate andesite and dacite flows. The quartz vein intervals (95%), display two primary quartz vein phases: (1) a creamy-white massive to weakly banded quartz veins with weakly colloform/crustiform texture containing trace beige adularia and



trace cockade gold-ginguro bands crosscutting earlier phase dark grey to black massive chalcedony veins; and (2) pale to medium grey massive to moderately banded quartz veins with weakly developed colloform/crustiform textures rimmed with trace creamy-beige adularia and black thin (<1 mm) ginguro bands. The brecciated quartz veins are composed of thick ( $\leq 60$  cm) 60% to 70% pale-beige to medium grey/black brecciated to massive chalcedony veins with massive texture and minor colloform/crustiform molybdenum-ginguro bands and pale-orange adularia.

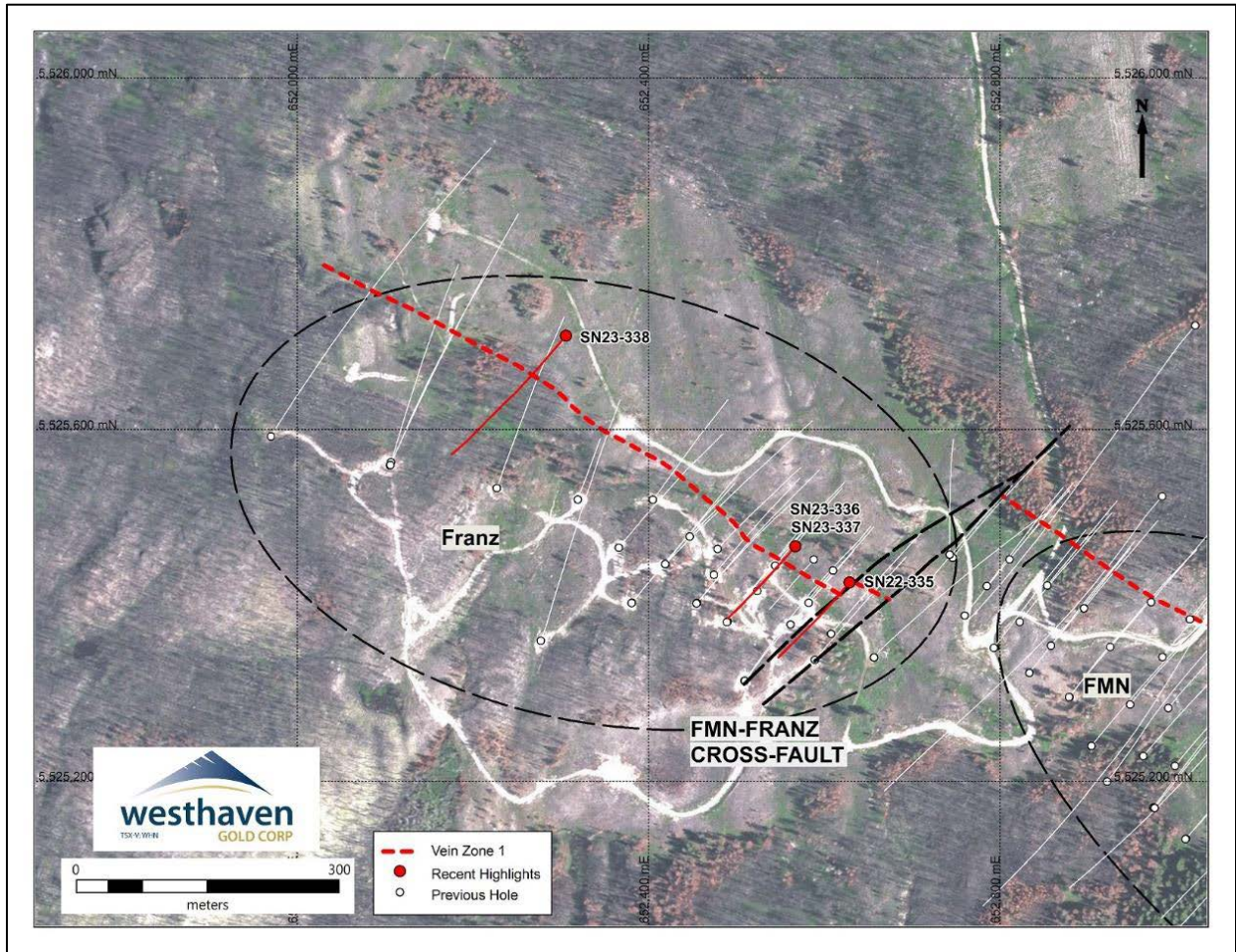
The highest-grade gold assays in the 2022 Franz Zone drilling occur in drill holes SN22-333 (100.0 g/t Au from 11.08 m to 12.00 m) and SN22-334 (37.8 g/t Au from 56.06 m to 57.00 m). These gold-bearing intersections are hosted by multiphase massive to colliform-crustiform banded quartz veins and brecciated quartz veins with gold-bearing cockade ginguro-adularia bands.

A first pass model of the Franz vein zone was created in 2022 (Bonnet, 2023a) using the drill hole data interpolated to a surface outcrop map. The vein zone at Franz shows the similar trend to Zone 1 at South Zone and FMN, with the subvertical orientation moderately dipping to the southwest. Oriented drill core data for the veining from Franz, when displayed in a stereonet, is similar to that of the South Zone and also suggests a series of shallow dipping faults. Mineralization is the strongest with most of the heavy quartz veining, as determined by metre-by-metre quartz measurements obtained during geological logging (Paarup, 2023), and extends approximately 180 m along strike and to a depth of 130 m from surface. Franz vein zone and local stratigraphy appears consistent with the northwestern end of FMN, and is offset to the southwest by 170 m as a result of a northeast to north-northeast trending cross fault. Previous drilling suggests the underlying granodiorite basement drops suddenly to the northwest of the Franz vein, most probably due to a second subparallel fault (Bonnet, 2023a). Basalt dykes were logged at Franz and do not appear to cut the vein zone (Bonnet, 2023a).

#### **10.6.1.2 2023 Drilling**

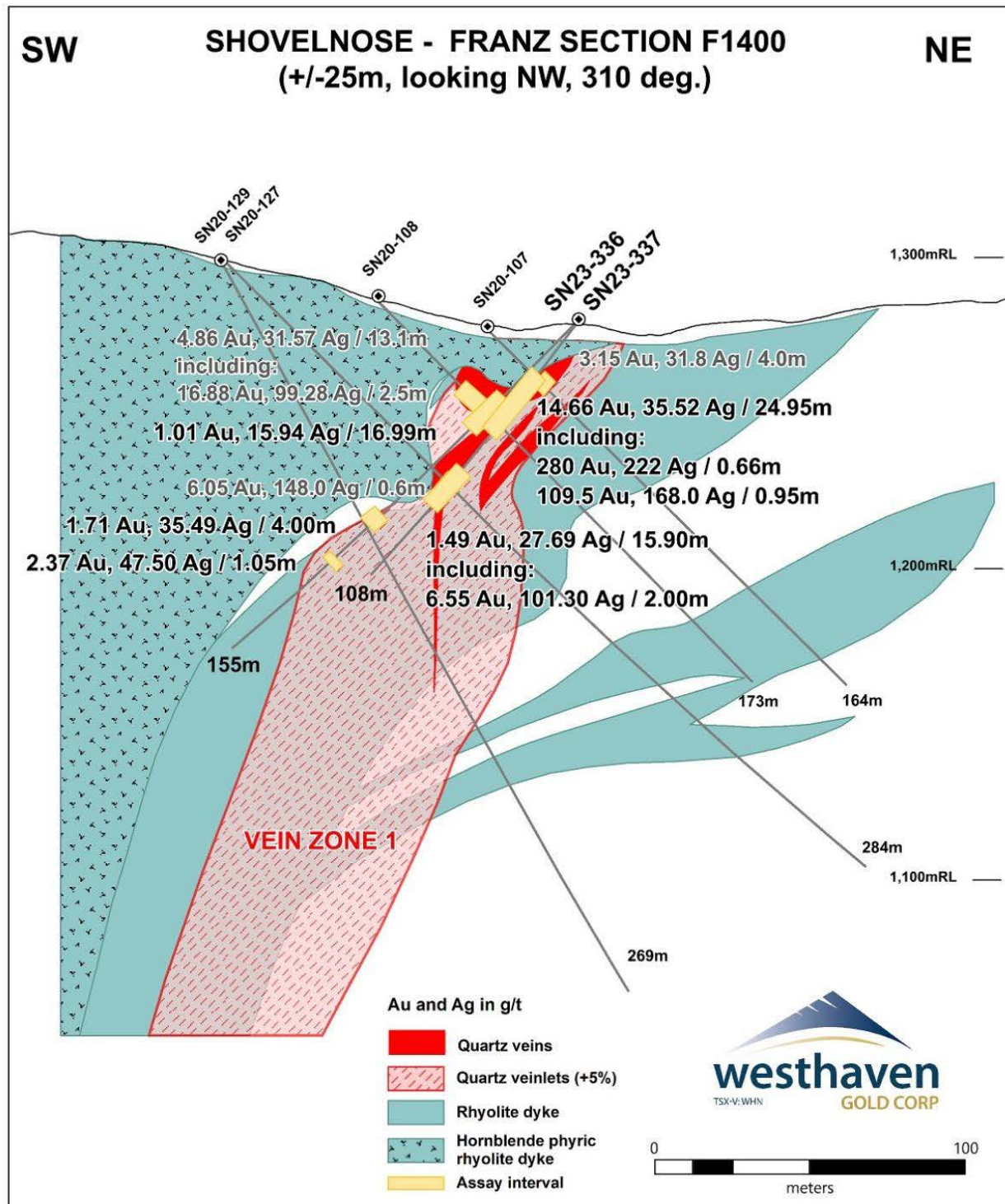
The 2023 drill program, to the effective date of this Report, involved completion of three drill holes totalling 516 m at the Franz Zone. Drill holes SN23-336 and SN23-337 were completed on the southeast part of Franz, whereas drill hole SN23-338 was completed on the northwestern part of the Zone (Figure 10.14). Assay highlights for the 2023 drill holes at Franz Zone are listed in Table 10.8 and shown with geological interpretation in Figure 10.15.

**FIGURE 10.14 2023 DRILLING AT FRANZ ZONE**



Source: Westhaven (2023)

FIGURE 10.15 FRANZ CROSS-SECTIONAL PROJECTION F1400



Source: Westhaven (2023)

## 10.6.2 FMN Zone

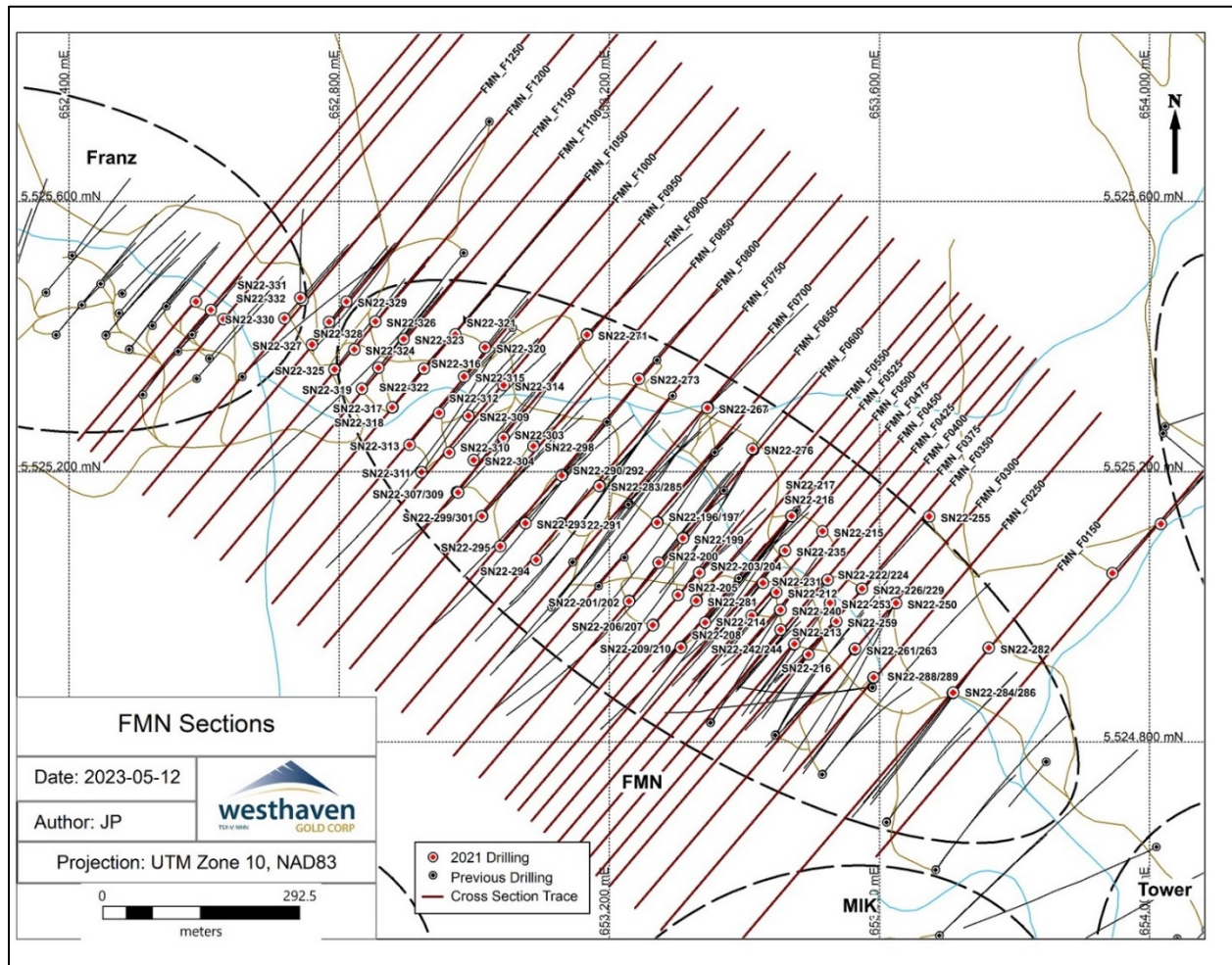
The FMN Zone is located along the mineralized Vein Zone 1 trend on the Shovelnose Property, approximately 1 km west-northwest of the South Zone (Figure 10.1). Prior to 2021, FMN had not been aggressively explored, due to limited outcrop, extensive overburden, and challenging topography. Drilling in 2021 involved completion of 25 drill holes on 11 cross-sections over 700 horizontal metres targeting the northwest expansion of the Vein Zone 1 trend (Westhaven, 2022b).

The results of the drilling in 2021 revealed that the host lithologies in FMN consist of five main rock packages: 1) an upper package of heterolithic tuffs interbedded with subordinate flows and tuffs of primarily rhyolite and minor andesite compositions; 2) a middle sequence of primarily thicker porphyritic andesite brecciated/banded flows with intercalated tuffs/heterolithic tuffs; 3) a lower package of primarily intermediate flows dominated by dacitic flows/tuffs with minor andesite and thinner intervals of heterolithic breccias with or without quartz fragments; 4) a basal sediment package of a primarily subaerial sequence of laminated mudstone; and 5) a plutonic basement of granodioritic rocks of the Nicola Group (Westhaven, 2022b).

Drilling at FMN in 2022 resulted in the completion of 96 drill holes for a total of 25,102.5 m. The majority of the drilling was completed at 50 m spacings, with 25 m infill drilling locally (Figure 10.16). Cross-sectional projection 0700 was created from the 2022 drilling (Figure 10.17). The two drill holes completed on Cross-section 0700 were SN22-265 and SN22-267, which were collared on pad SN21-P06. The objective of the 2022 FMN drilling was to target the northwest expansion of the Vein Zone 1 trend, based on IP resistivity survey features. Additional cross-sections with 2022 drill holes are available in Paarup (2023).

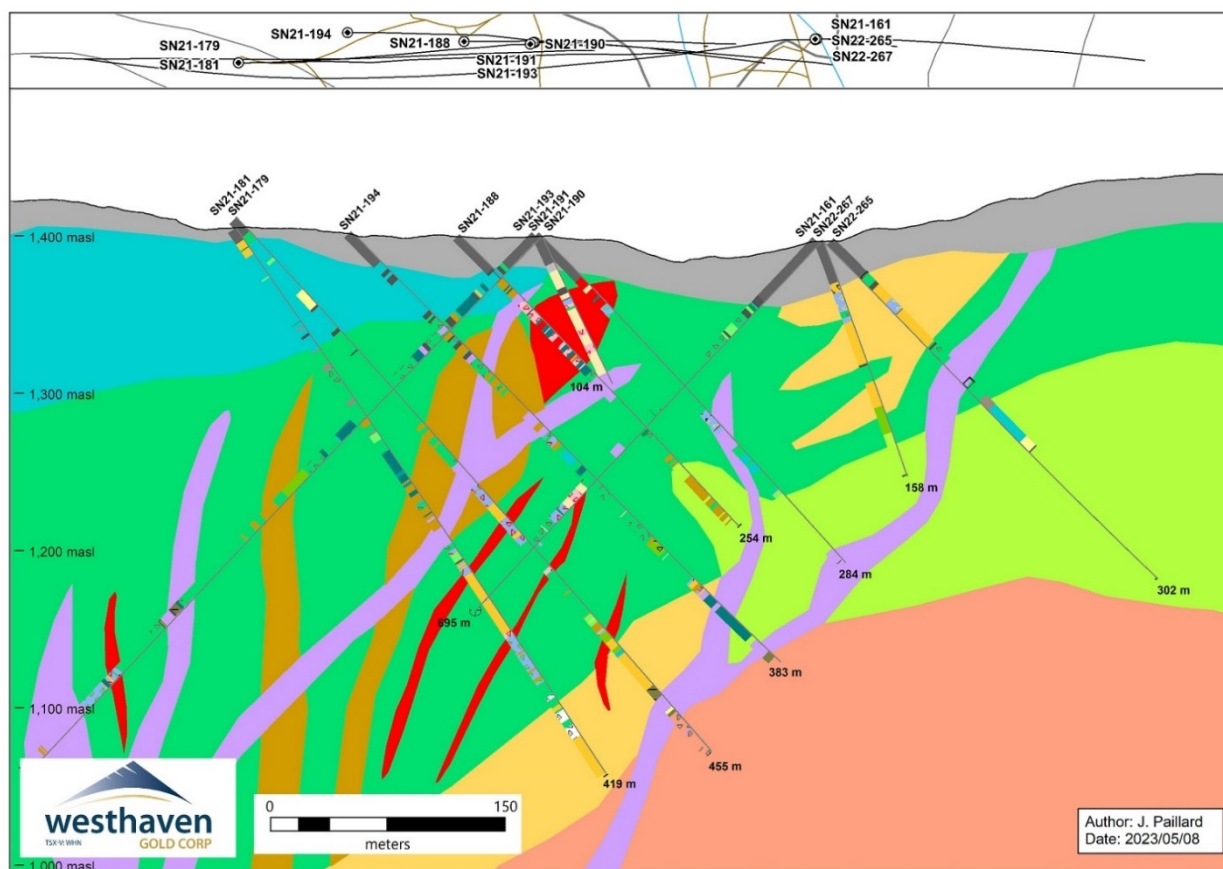
Drilling and geological logging based on cross-sectional projection 0700 indicate that the underlying lithologies in this portion of FMN can be generally divided into three packages: 1) an upper package of autobrecciated andesite and rhyolite flows with hydrothermal rhyolite breccia and a minor dacite flow lens; 2) a middle package of rhyolitic/dacitic tuff, including heterolithic and welded tuffs; and 3) basement composed of granodiorite thought to be from Jurassic/Triassic Nicola Group (Figure 10.17). Approximately 30 m of overburden was recovered in both drill holes from cross-section F0700. The overburden was composed of andesite pebbles and massive aphanitic rhyolite cobbles in a washed-out silt-sand matrix.

**FIGURE 10.16 FMN DRILL HOLE COLLAR PLAN**



Source: Paarup (2023)

**FIGURE 10.17 FMN CROSS-SECTION F0700**



*Source: Paarup (2023)*

The stratigraphy of drill hole SN22-265 is intersected by a 21 m thick latite dyke at 105.6 m that crosscuts dacite tuffs and an andesite flow subparallel to Vein Zone 1. Faulting is observed in drill holes SN22-265 and SN22-267 intersecting flows and tuffs, commonly as strongly clay altered material. However, the extent of the effect the faulting has on the local geology on this cross-section is unknown at this time.

Major veining was not encountered on cross-section 0700 during the 2022 drilling. Calcite veins were the most abundant vein type in the 2022 drilling. Thin  $\leq 5\%$  quartz carbonate veins,  $\leq 20$  mm, were observed in the dacites in drill hole SN22-265 and the felsic lithologies in drill hole SN22-267. Rare chalcedony veins are present in drill hole SN22-265, exclusively in the welded tuff and 3% chalcedony veins in drill hole SN22-267 are observed in felsic lithologies. Black chalcedony veins (1%) are present in both drill holes and range between 2 mm to 5 mm in width.

Results of the 2022 drilling have been incorporated into the general geological model of the South Zone area. In summary, 3-D modelling suggests stratigraphy at FMN is cut by several m-scale dykes ranging from mafic to felsic composition and, most conspicuously, 20 m to 30 m thick latite, basalt and rhyolite dykes that intersect the volcanic/tuff packages and sub-parallel the Vein Zone 1 trend; the rhyolite dyke intrudes the lower granodiorite basement (Westhaven, 2022b).

The main gold/silver mineralization at FMN is hosted in the subvertical, slightly undulating northwest-trending vein system identified as Zone 1. Similar to the South Zone, gold mineralization occurs over a 300 m vertical range from the 1,100 to 1,400 m asl level that represents a shallow boiling paleo-horizon with typical epithermal features. However, the higher-grade values at FMN appear to be restricted to elevations between 1,100 and 1,250 m asl, with lower gold values from 1,250 to 1,400 m asl.

FMN mineralization is associated with a major strike-slip structure trending northwest-southeast, along which the main vein zone (Zone 1) developed. This major structure also has a normal component of movement, as demonstrated by major stratigraphy offsets dropping to the southwest. Mineralized vein zones are conformable to the major strike-slip fault and the mineralization is also controlled by secondary faults trending north-south and northeast-southwest (Bonnet, 2022c). Although the FMN Vein Zone 1 trend is continuous, clear breaks exist as marked by sudden absence of veining/mineralization. These breaks are considered to be related to a series of late north-south trending and steeply dipping cross faults.

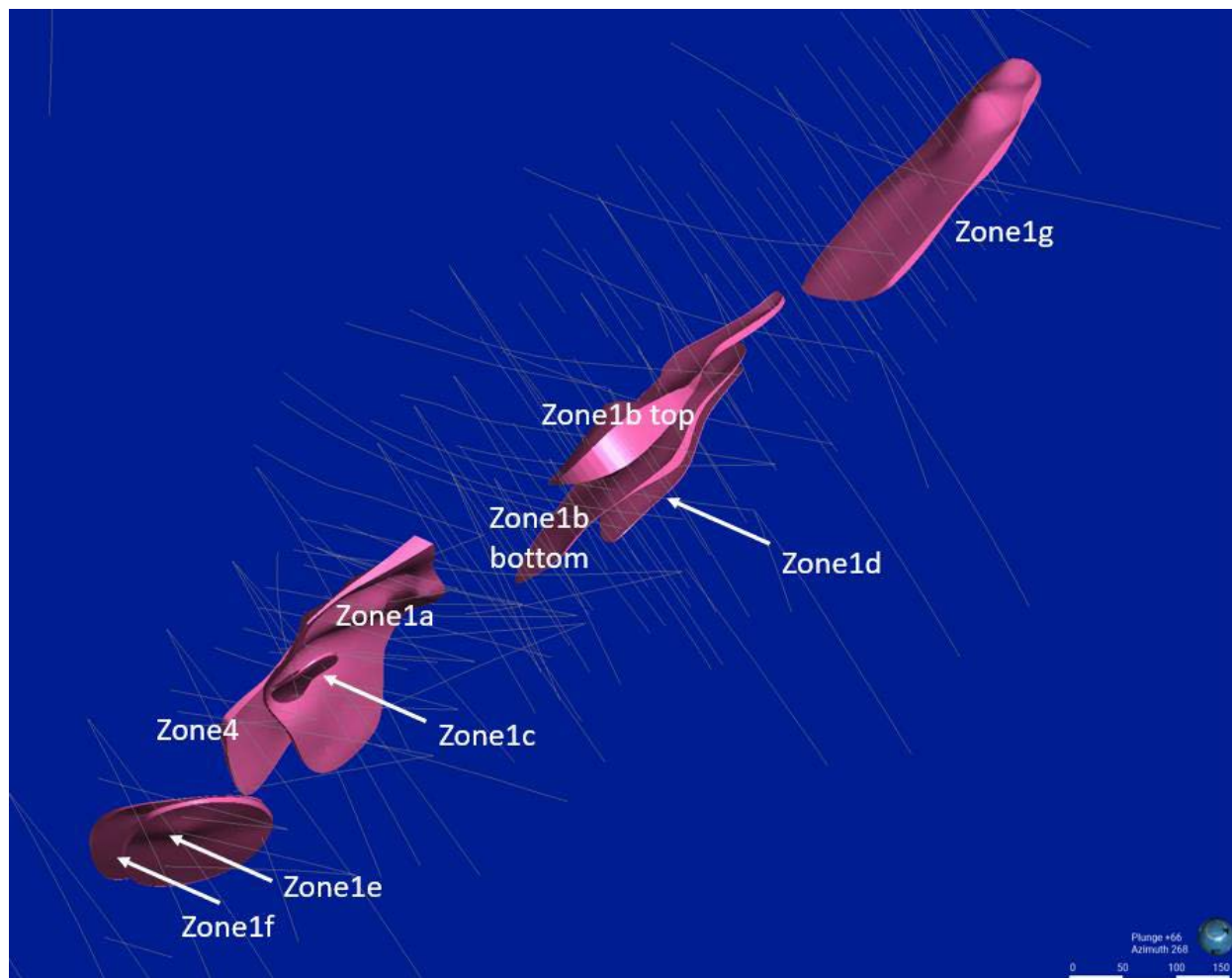
Although all interpreted to be part of Zone 1, FMN Vein Zones have different characteristics moving from the southeast to the northwest along the system (Figure 10.18). For example, Zone 1a consists of banded white chalcedony cm-dm scale veins (locally up to m-scale) and massive cm to dm-scale black chalcedony veins, which is similar to South Zone Vein Zone 1, except that it contains more black chalcedony veins. Zone 1b\_top is predominantly black chalcedony (South Zone Vein Zone 2 type), whereas Zone 1b\_bottom is predominantly white chalcedony with some black chalcedony (South Zone Vein Zone 1 type). Zone 1g at the northwestern end of FMN is white chalcedony only (South Zone Vein Zone 3 type). The FMN Vein Zones are hosted predominantly in rhyolite tuff at surface and dacite/andesite flows at depth.

Although broken-up in places, FMN Main Vein Zone (Zone 1) aligns with this trend, and although Vein Zone 2 veining is not present here, rhyolite dykes align with what appears to be a shallower splay to the northeast off the main trend. FMN is also hosts an heterolithic breccia unit, forming a sub-vertical body aligned with Vein Zone 1 trend and commonly contains gold-bearing quartz vein fragments. This heterolithic breccia has a thinner and shallower splay to the northeast, which only rarely entrains quartz clasts (Bonnet, 2022).

Upper-level low-grade gold mineralization is characterized by weakly brecciated coherent multiphase veining with early-stage dark chalcedony + pyrite/marcasite ± adularia cut by younger phase pale grey/white massive to banded colloform/crustiform veins ± adularia, marcasite and ginguero. Elevated molybdenum and silver XRF values indicate a lower boiling point in this wider part of the vein system.

The deeper, lower-level high-grade gold mineralization is characterized by multi-phase, strongly hydrothermally-brecciated and fractured quartz/chalcedony veins + adularia + marcasite ± ginguero clots/bands in a chaotic assemblage where the vein zone narrows. Silver values and pathfinder element selenium are elevated in this part of the system. Pervasive adularia with disseminated pyrite is the dominant wall rock alteration type where significant gold mineralization occurs.

**FIGURE 10.18 3-D MODEL OF QUARTZ VEINING AT FMN ZONE**



*Source: Paarup (2023)*

*Notes: Vein Zones at FMN looking to the west (azimuth 268°) from an angle about 66° above the horizon (from Bonnet, 2022c).*

FMN is cut by basalt, latite, rhyolite and hornblende-phyric rhyolite dykes. A swarm of at least eight steeply-dipping basalt dykes in the central part of FMN are oriented north-south, changing orientation in the northwestern part of FMN to a more northwesterly-trend with a shallower-dip. The center part of FMN is also cut by a swarm of ten north-south trending, steeply to moderately dipping latite dykes that similarly change to a more northwesterly-trend in the northwestern part of FMN. The latite dykes are slightly thicker than the basalt dykes and interpreted to be older. One of the latite dykes curves a little near-surface, which makes it appear like a sill on a vertical cross-section looking to the northwest. The basalt and latite dykes are interpreted to post-date mineralization (Bonnet, 2022).

At least three different rhyolite dykes are present, running roughly northwest-southeast, sub-parallel to Vein Zone. These dykes are interpreted to be older, pre- to syn-mineralization, as in places they are cut by mineralized quartz veinlets, are locally brecciated and host mm- to cm-scale veinlets/patches of sulphide. Cross-faulting also offsets these dykes into 'pieces' like that with the quartz veining.



A subvertical hornblende-phyric dyke (distinct from the basic rhyolites) trends sub-parallel to Vein Zone 1, becoming significantly thicker (from  $\leq 10$  m up to 100 m) near surface in the northwestern part of FMN.

Although the rhyolite and hornblende-phyric rhyolite dykes apparently follow the same trend, with their projection at depth appearing to connect, they are not interpreted to be related. The former have a creamy beige aphanitic to fine-grained groundmass, minor mm-scale white phenocrysts  $\pm$ mm-scale black phenocrysts, local banding with local hematite alteration, and commonly host mineralized quartz veinlets. The latter dykes are clearly hornblende-phyric, creamy beige, locally orange to grey, locally hematite altered, and rarely veined (mostly carbonate with minor quartz veinlets).

A series of en-echelon strongly clay altered xenolithic rhyolitic dykes have been identified in the centre part of FMN, in the cross-fault corridor. They do not extend along strike ( $< 50$  m) and are potentially en-echelon features.

### **10.6.3 Portia Zone**

The Portia Zone is located north of the Tower Zone and at the southeastern end of FMN (Figure 10.19). Two drill holes, SN22-305 and SN22-306, were completed at Portia in 2022. The purpose of 2022 drilling at the Portia was: 1) to retest the silica flooded zone and elevated mercury and sulphur values intersected in the last 4 m of previous drill hole SN-12-05; and 2) to test the region towards the south for a possible block fault between drill holes SN12-05 and SN20-122.

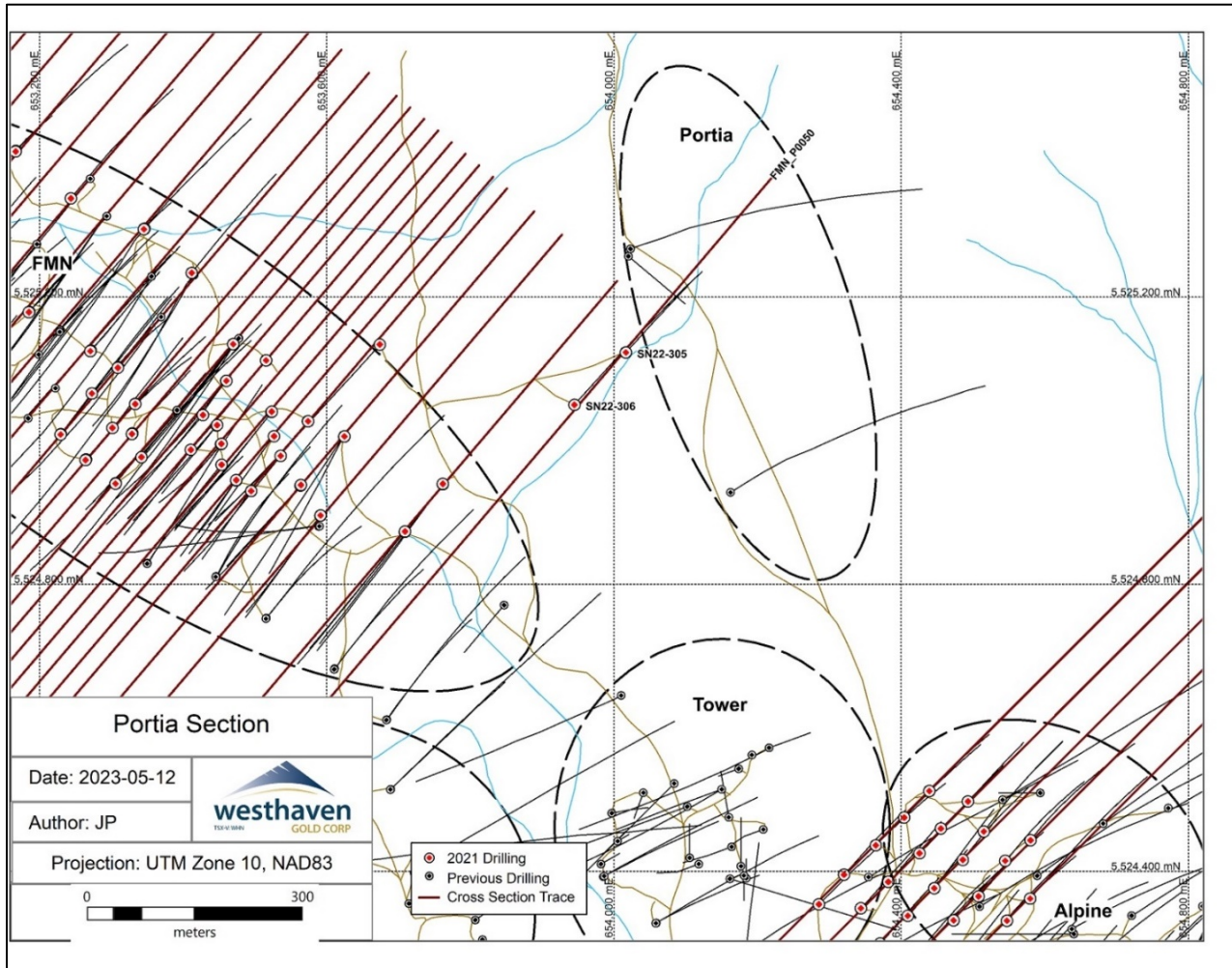
The interpreted geology of Portia, based on the four drill holes and shown on cross-section (Figure 10.20), can be generally divided into three main lithologies: 1) an upper felsic cap composed of rhyolite flows and interbedded heterolithic and welded tuffs; 2) a middle package of autobrecciated flows and tuffs of primarily dacitic composition intercalated with subordinate rhyolite flows/tuffs; and 3) a lower sequence composed of mixture of intermediate tuffs/flows and epiclastic sedimentary rocks.

Rare pale to dark grey quartz veins and quartz carbonate veins generally are constrained to dacite flows and generally  $\leq 3$  cm thick, discontinuous and massive. Thin ( $\leq 1$  mm)  $\leq 1\%$  quartz-pyrite veins occur throughout drill hole SN22-305. Very rare hairline hematite veins occur exclusively in hornblende phyric rhyolite dyke in both drill holes. Calcite veins and stockworks (1 to 3%) are observed throughout all units with widths  $\leq 20$  mm.

The felsic cap composed of the hornblende phyric rhyolite flow observed in drill holes SN12-05 and SN20-122 appears to be “down dropped” relative to the footwall, which suggests that a normal fault is responsible for the minor offset downward in the hanging wall (Figure 10.20).

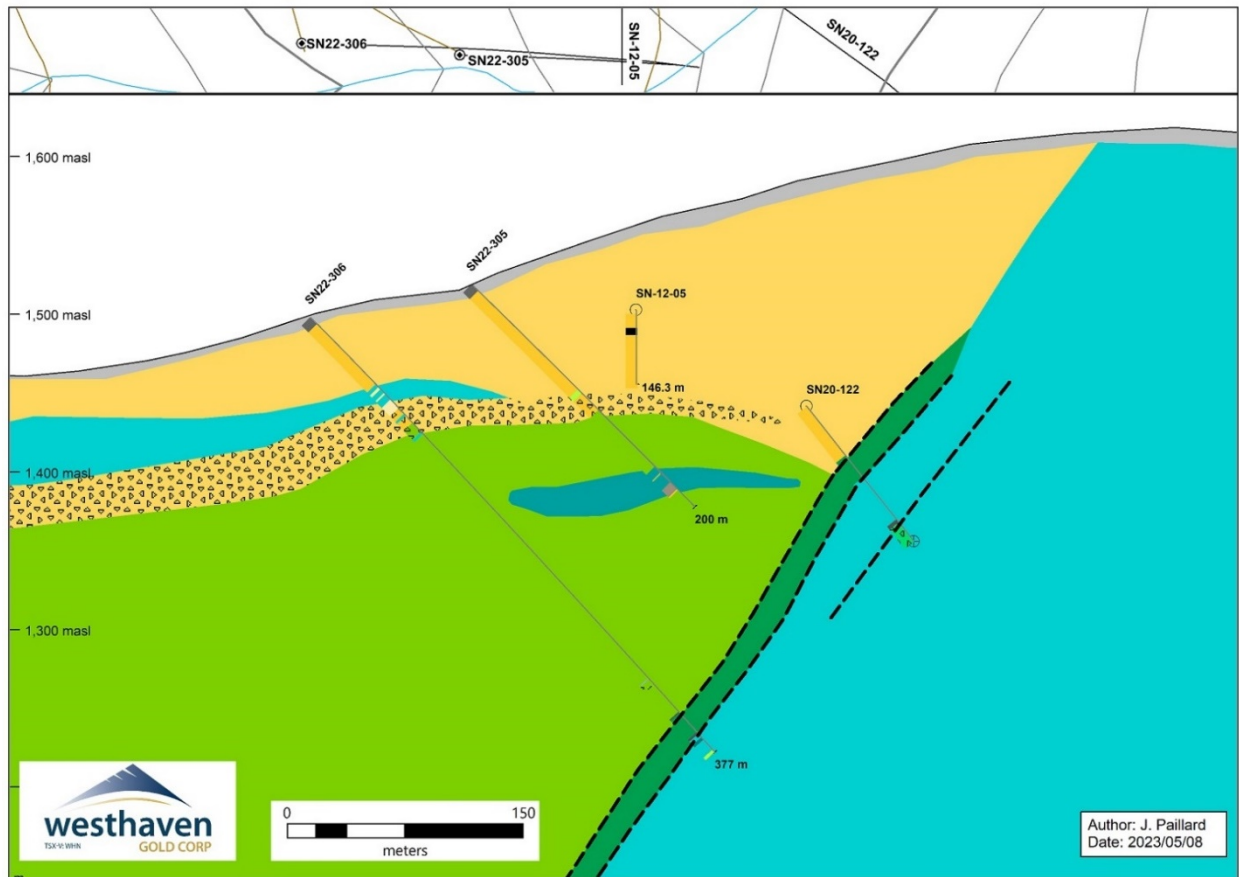
Significant gold mineralization was not identified in the 2022 drill holes. However, elevated Zr/TiO<sub>2</sub> ratios and Fe percentages in the dacite flow were noted in both.

**FIGURE 10.19 PORTIA ZONE DRILL HOLE COLLAR PLAN**



Source: Paarup (2023)

**FIGURE 10.20 PORTIA ZONE CROSS-SECTION P0050E**



Source: Paarup (2023)

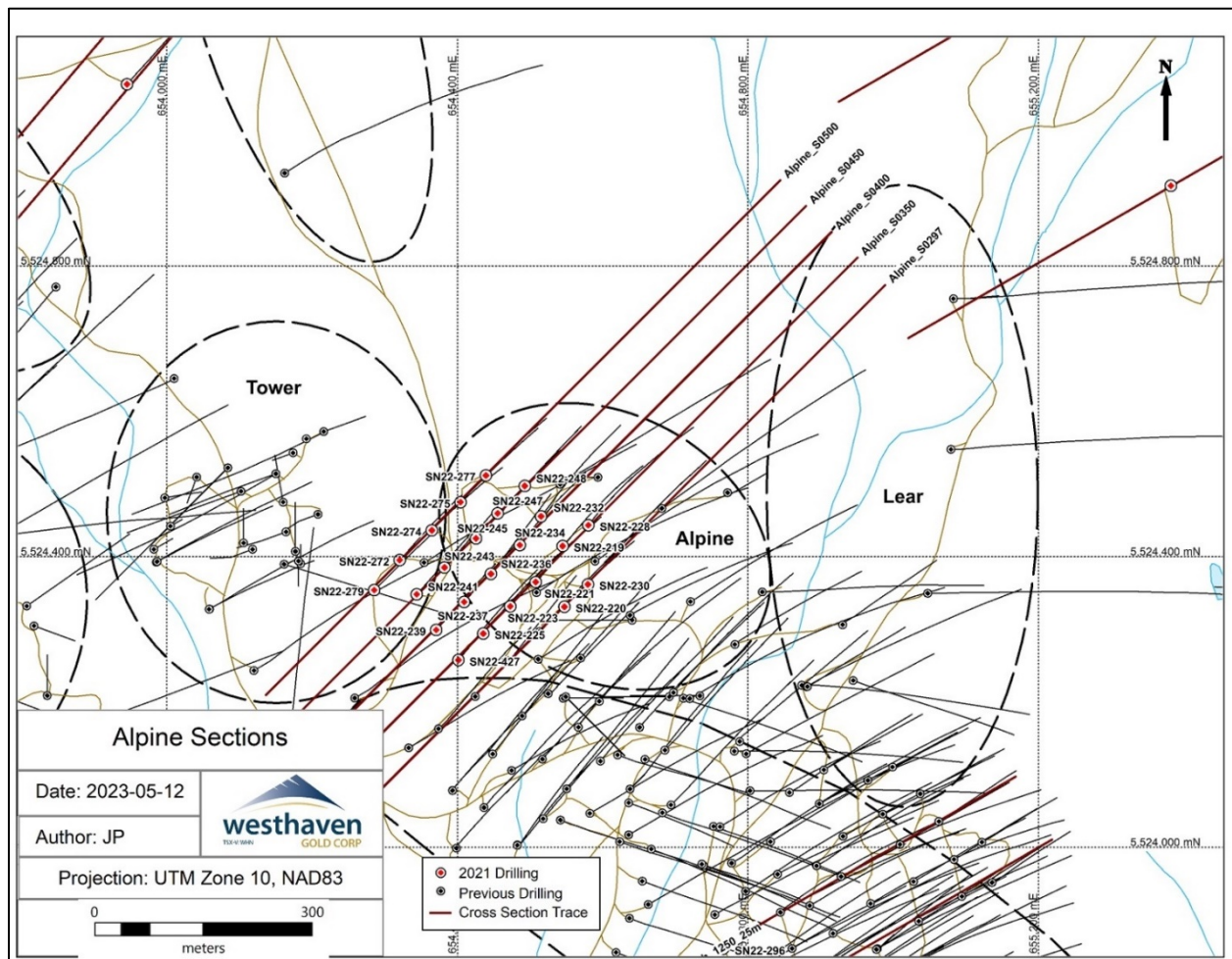
### 10.6.4 Alpine Zone

The Alpine Zone is situated within the main mineralized trend on the Shovelnose Property that hosts the Franz, FMN and South Zones (Figures 10.10 and 10.21). The majority of veining at Alpine is interpreted to be related to Vein Zone 2, a co-parallel and shallower structure located approximately 100 m to 300 m northeast of Vein Zone 1.

The purpose of 2022 drilling at Alpine was to test: 1) the location, depth and continuity of Vein Zone 2; 2) confirm the presence of potentially mineralized rhyolite outside of the veining and establish its depth; and 3) target Vein Zone 2 at 50 m step-outs west from drill hole SN22-219. Alpine was tested by 24 drill holes in 2022 (Figure 10.21).

The interpreted geology of Alpine was based on five drill holes completed on cross-section S0400 (Figure 10.22), each collared on individual pads. Cross-section S0400 is representative of the geology and mineralization encountered at Alpine.

**FIGURE 10.21 ALPINE ZONE DRILL HOLE COLLAR PLAN**

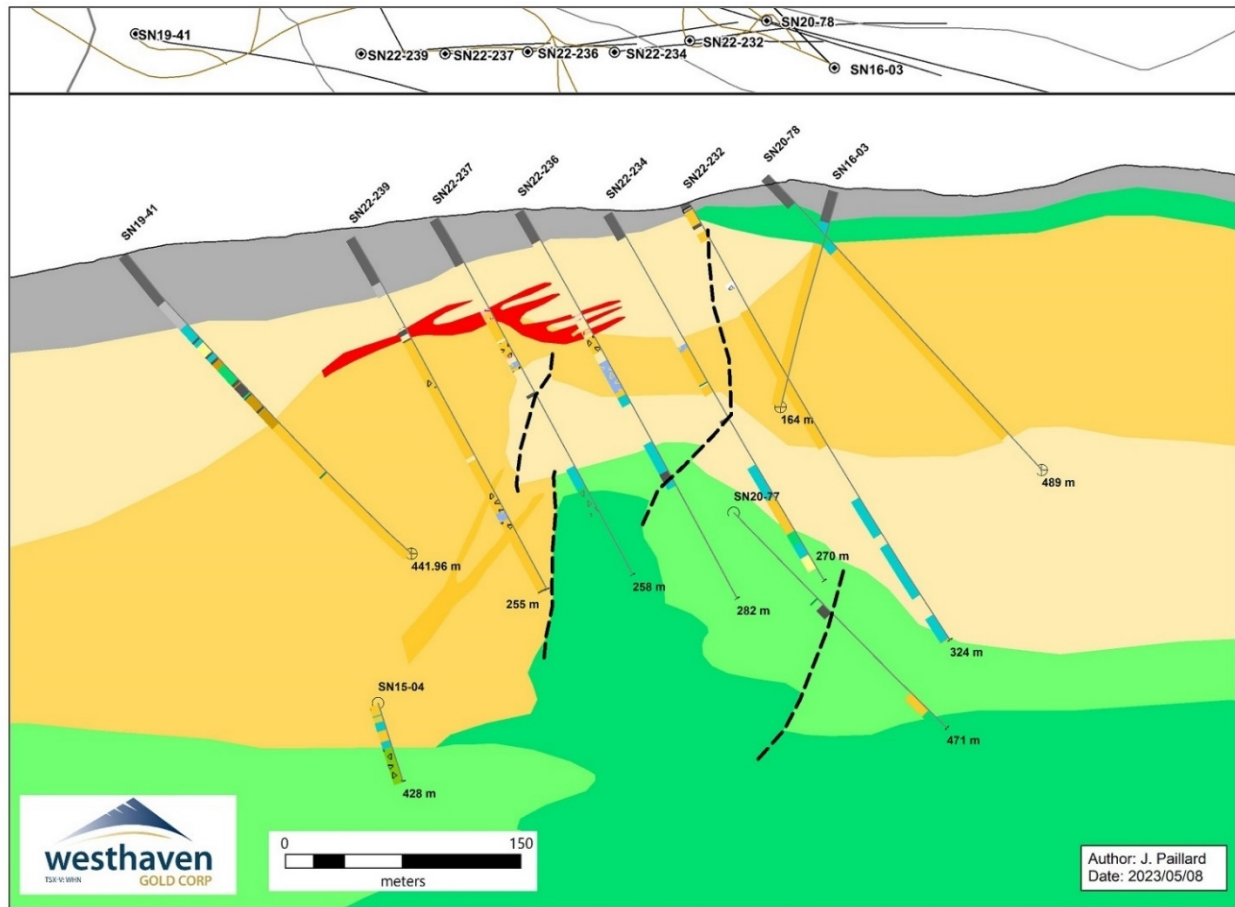


Source: Paarup (2023)

Rocks encountered during drilling at Alpine can be divided into two main lithological packages: 1) an upper felsic package including interbedded coherent and autobrecciated rhyolite flows, hornblende-phyric rhyolite flows, hydrothermally brecciated rhyolite and xenolithic rhyolite flows intercalated with rhyolite tuffs; and 2) an intermediate lower or ‘basement’ package composed of massive and lesser auto-brecciated andesite flows with andesite tuffs with intercalated heterolithic and welded tuffs (Figure 10.22).

The overburden dips shallowly to the southwest (co-parallel to the topography) and consists of 70% unsorted, cobble-sized rhyolite tuffs, 25% cobble-sized rhyolite flow fragments, and 5% dark green andesite pebbles in a silt-sand unconsolidated matrix.

**FIGURE 10.22 ALPINE ZONE CROSS-SECTION 0400**



*Source: Paarup (2023)*

Faults occur in each of the 2022 drill holes and in previous drilling at Alpine. The faults appear to have preferentially developed in rhyolites and felsic tuffs, exhibiting strong clay alteration adjacent to tectonized fault gouge. However, the structural implications on the stratigraphy or Vein Zone 2 have not been studied at this time.

Vein Zone 2 was intersected in all the 2022 drill holes. However, drill hole SN22-236 intersected the most significant quartz veining intersection to date at Alpine, hosted by strongly potassic altered rhyolite tuffs and flows. Three vein generations of quartz veins are observed: 1) the vast majority are early dark/medium grey massive quartz vein phase (60% quartz by volume, up to 15 cm thickness) crosscut by; 2) rare medium grey massive quartz veins ± brassy coloured sulphides (30 to 35%, up to 10 cm thickness), and are in turn cut by; and 3) late-stage light grey quartz-amethyst veins (5%, measuring mm-scale) intersecting the drill core axis at moderate angles. Calcite veins and stockworks are found in both the felsic and mafic lithologies (1 to 10%, ≤3.0 cm in width), and hairline quartz-pyrite veinlets occur preferably in the felsic units, mainly proximal to quartz veins. Brecciated quartz veins are generally dark to grey massive quartz/chalcedony hosting silicified felsic wall rock fragments.

The highest gold grade intersections occur in drill holes SN22-236 (15.4 g/t Au in rhyolite tuff from 78.83 m to 80.00 m) and SN22-237 (3.17 g/t Au in a brecciated quartz vein from 99.02 m to

100.23 m). Elevated arsenic values from XRF measurements in drill hole SN22-232 (40 to 1,095 ppm As) and SN22-236 (42 to 1,140 ppm As) suggest the presence of mineralized fluids and (or) boiling, which warrants follow-up drilling, particularly where they occur in felsic lithological units.

Vein Zone 2 remains open to the northwest in the gap between the Alpine and Tower Zones.

The 24 drill holes completed at Alpine in 2022 (6,321.5 m) increased the total amount of drilling to 37 drill holes and 11,001.4 m at this Zone. These drill results have been merged into the South Zone geological model and are discussed in a general sense below (Bonnet, 2023b).

The Alpine Zone is located approximately 600 m northwest of the South Zone, in an area where the vein zones (Figure 10.22) appear to flatten. At Alpine, veining is composed of mostly black chalcedony veins, with dm- to m-scale brecciated intervals and mm- to cm-scale veinlets. The vein zones are 1 to 5 m thick on average and locally up to 8 to 10 m, shallowly-dipping to the southwest, and enveloped with mineralized veinlets.

Drilling in 2022 followed the original orientation of South Zone main vein zone (Zone 1a), extending it to the northwest along the main northwesterly mineralized trend. It also added several small vein zones in the Alpine area, interpreted to be related to Zone 2, with a shallower (borderline flat) dip to the southwest. Vein Zone 2 at Alpine is predominantly hosted in near the surface (top) rhyolite tuff unit, and locally in underlying brecciated rhyolite flow units. These vein zones may be exploiting a contact lithology between tuffs and flows. For comparison, in the drill core of South Zone, Zone 2 is moderately dipping to the southwest, composed of a stockwork of cm- to dm-scale white and black chalcedony veins with a higher concentration in black chalcedony veining compared to Zone 1. Despite the significant change in dip, Alpine vein zones are currently interpreted to be part of Zone 2, extending to the northwest (Bonnet, 2023b).

Stratigraphy previously modelled at the South Zone (Westhaven, 2022b) continues northeast to Alpine, shallowing upwards and maintaining the plunge to the southeast. The mafic basement, which combines heterolithic/andesite tuffs overlying andesite flows, is currently modelled to be in direct contact with the near surface rhyolite lapilli tuff at Alpine. However, there are rhyolite units of varying intercept lengths intercalated in-between. Those rhyolite units are currently logged as flows. However, their spatial distribution is not consistent laterally, which suggests the presence of fault offsets. More work should be done regarding the structural setting of this area, to determine if it can help explain the inconsistent rhyolite distribution. Note that rhyolite units in the drill core of South Zone also showed inconsistencies, and were modelled with the aid of fault offsets.

The possibility of fault offset at Alpine is to be considered. However, the fact that the rhyolite tuff/mafic basement contact appears to be consistent with the drill core of South Zone suggests that the rhyolite units may be intrusive bodies rather than flows. In 2022, virtually all rhyolite units originally logged as flows in the FMN/Franz area during 2020/21 were re-coded as dykes. The re-coding of those units was prompted by the observation of their spatial distribution strongly pointing towards dyke-like bodies. This poses the question of the possibility of the same thing happening at the Alpine Zone.

Several intervals from the 2022 Alpine drilling hosted intervals of post-mineralization basalt dykes that aligned with a swarm of sub-parallel north-south trending, steeply northwest-dipping basalt bodies previously modelled at the nearby South Zone.

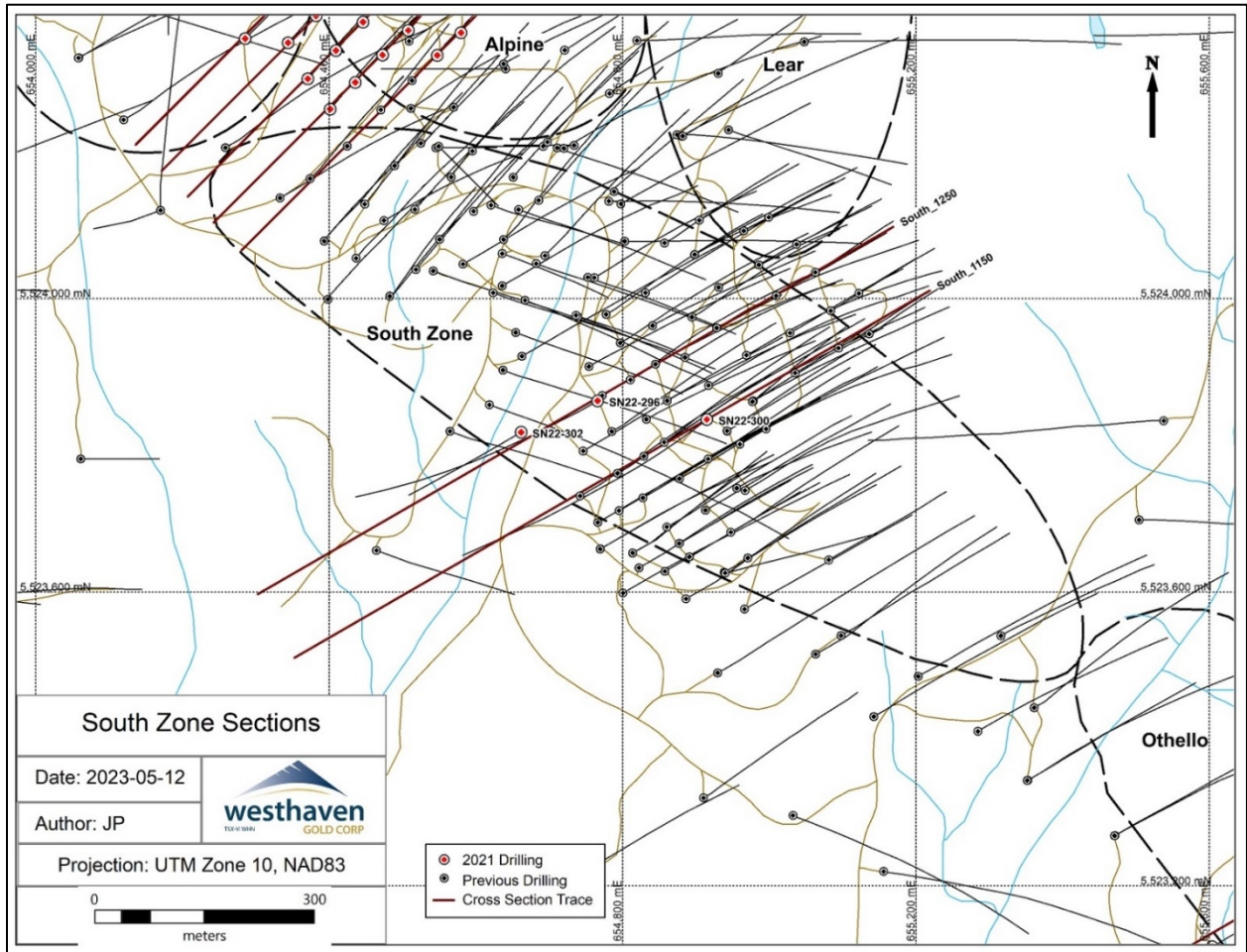
### **10.6.5 South Zone**

The South Zone represents the main concentration of veining on the Shovelnose Property (Westhaven, 2022a). Results from historical drilling have produced an initial Mineral Resource Estimate of 841,000 Indicated ounces at 2.47 g/t AuEq and 277,000 Inferred ounces at 0.94 g/t AuEq (Westhaven, 2022a). The South Zone is located near the southeast end of the main mineralized trend on the Shovelnose Property that hosts the Alpine, Tower FMN, Franz and Othello prospects (Figure 10.23). Drilling in 2022 was situated of Vein Zone 1, southwest of the known mineralization.

The South Zone was tested by three drill holes in 2022 on two cross-sections (F1150 and F1250; Figure 10.23). The purpose of the 2022 drilling at the South Zone was three-fold: 1) test the hanging wall southwest of Vein Zone 1 for potential northeast dipping structures sub-parallel to the South Zone fault system (aka a “conjugate flower structure”); 2) explore adjacent to the area of Vein Zone 1, where mineralization is thickest; and 3) follow-up testing for chalcedony veining and potassic alteration identified in previous drilling.

Drilling and geological logging data suggest the lithology can be generally divided into three main packages: 1) upper rhyolite flows (including minor auto-brecciated rhyolite flows and rhyolite hydrothermal breccia); 2) a middle package composed of interbedded rhyolitic to andesitic tuffs (different textures and particle sizes comprised of ash tuffs, heterolithic tuffs, and welded tuffs); and 3) an intermediate basement composed of andesite flows. The upper and middle packages and the overburden/bedrock contact dip shallowly to the southwest (Figure 10.24). Overburden was partially recovered in drill hole SN22-302, with a 2.63 m interval of limonitic stained rhyolite flow fragments contained in an altered sandy matrix.

**FIGURE 10.23 SOUTH ZONE DRILL HOLE COLLAR PLAN**



Source: Paarup (2023)



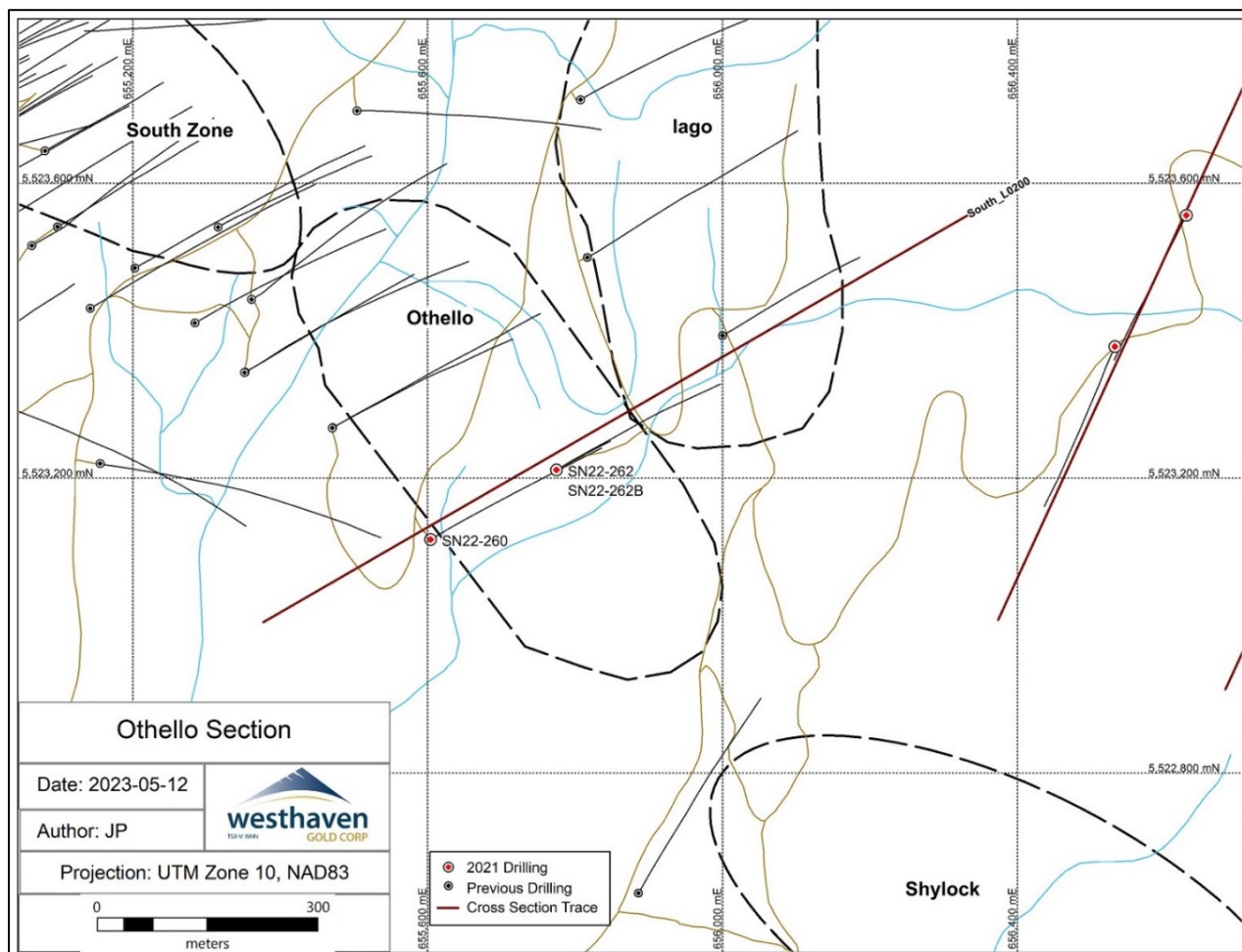


212 ppm As) and SN22-300 (10 to 250 ppm As) suggest reaction with mineralized hydrothermal fluids, and therefore warrant follow-up, particularly in the felsic units.

### 10.6.6 Othello Zone

The Othello Zone is located 1 km southeast of mineralization at the South Zone (Figure 10.25). Cross-section 0200E (Figure 10.26) was developed to incorporate the three drill holes completed here in 2022, and also includes previous drill hole SN20-61. The purpose of drilling Othello in 2022 was four-fold: 1) investigate outcrops of potassic-altered bleached and flow-banded rhyolite with chalcedony veins grading up to 81 ppb Au; 2) investigate outcrops of rhyolite and brecciated rhyolite with >3% potassium and 0.141 ppm Hg; 3) investigate a possible extension of the mineralized South Zone structure; and 4) in-fill a 500 m gap between pad POT-01 and drill hole SN20-61. The overburden is relatively thin in the southwestern part of the cross-section (~15 m), and thickens significantly to the northwest (~39 m) near drill hole SN20-61.

**FIGURE 10.25 OTHELLO ZONE 2022 DRILL HOLE COLLAR PLAN**



Source: Paarup (2023)

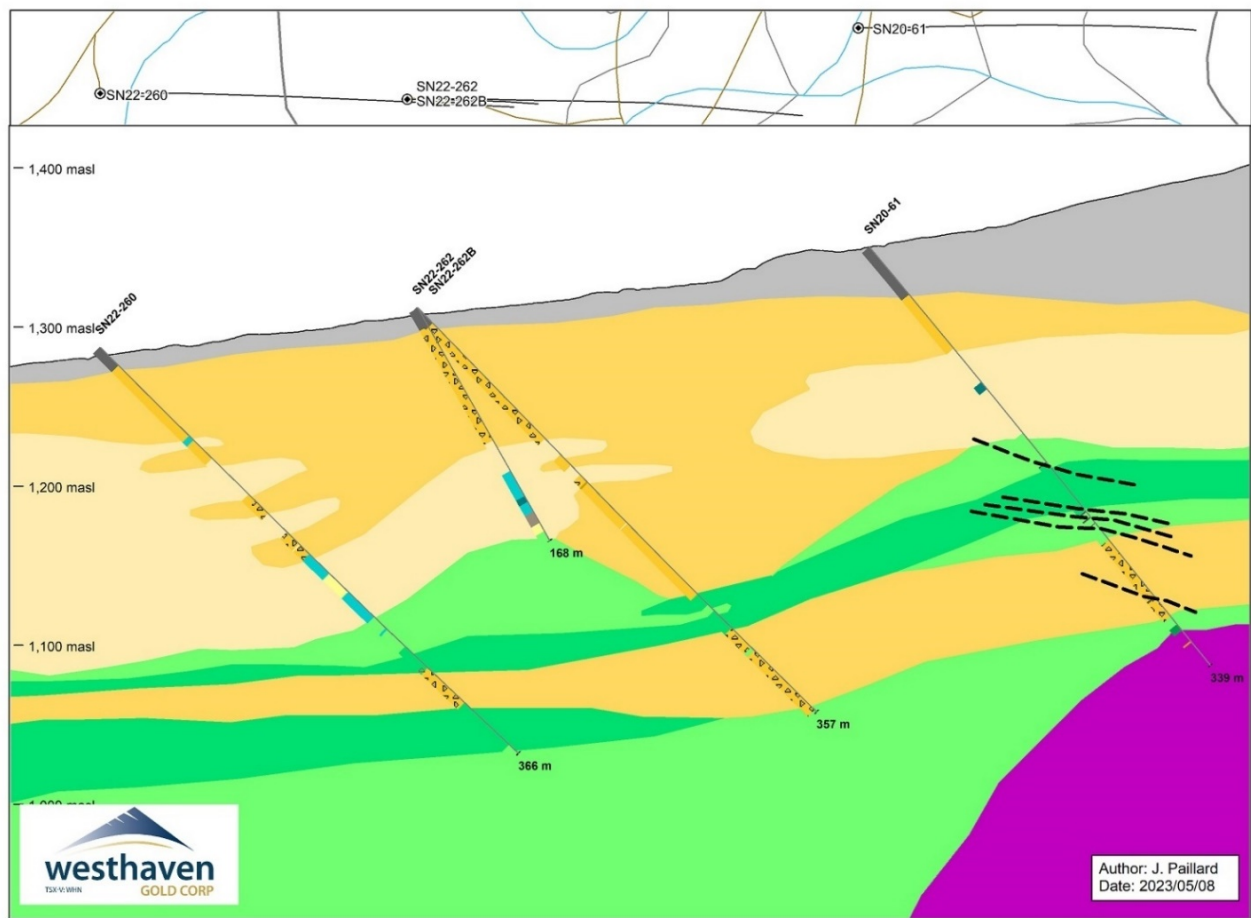
Lithologies at Othello can be broken down into three packages: 1) an upper massive rhyolite flow (with auto-brecciated rhyolite flows and minor xenolithic rhyolite flows); 2) a middle package

composed of interbedded rhyolitic to andesitic tuffs comprised of ash tuffs, heterolithic tuffs, and 3) welded tuffs and an intermediate package consisting of andesite flows and tuffs at depth as shown on Figure 10.26. A syenite pluton was intersected at the bottom of previous drill hole SN20-61.

A basalt dyke (<2 m) cuts drill hole SN20-61 and extends as far as drill hole SN22-262b. A cm-scale fault zone is only observed in drill hole SN20-61 and consists of 60% dark green fragments of tectonized andesite in a dark grey and very soft clay matrix (Figure 10.26).

Calcite veins,  $\leq 10$  mm in width, are observed throughout all units and most abundant (5 to 10%) in drill hole SN22-260. Chalcedony veins are  $\leq 5$  mm wide and occur preferentially within the felsic lithologies of the 2022 drill holes (1 to 5%). Quartz-carbonate veins,  $\leq 15$  mm in width, occur mainly in the felsic lithologies, such as rhyolite flows and tuffs (1 to 3%).

**FIGURE 10.26 OTHELLO ZONE CROSS-SECTIONAL PROJECTION SOUTH\_L0200E**

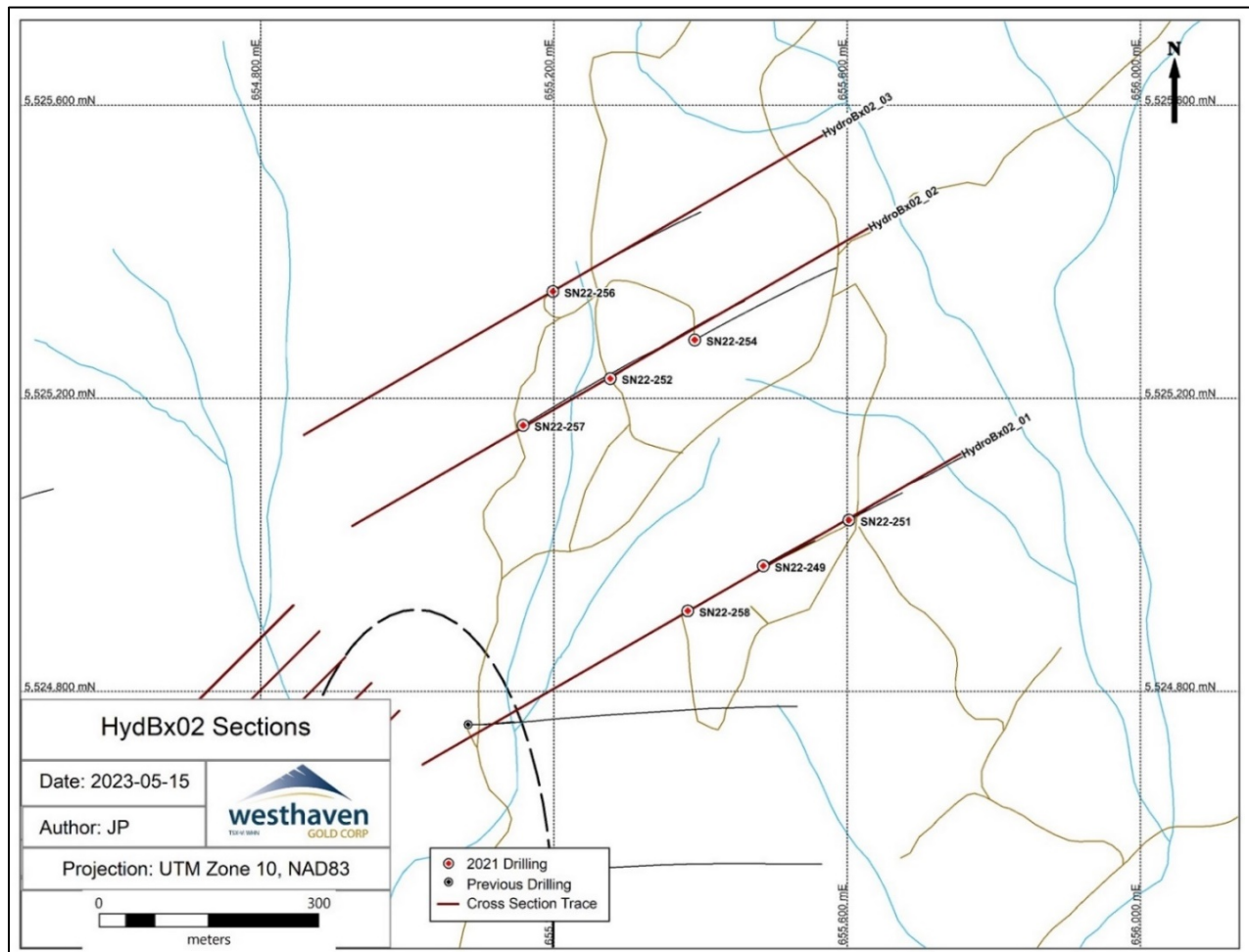


Source: Paarup (2023)

## 10.6.7 HYD BX-02

The HYD BX-02 Target is situated 1.2 km northeast of the South Zone and is sub-parallel to the main mineralized trend that hosts the FMN, Alpine and Othello Zones (Figure 10.1). HYD BX-02 was tested by seven drill holes in 2022, each collared on individual pads (Figure 10.27). The purpose of the 2022 drilling at HYD BX-02 was to test for: 1) hydrothermal breccia at depth that is exposed at surface; 2) alteration defined by elevated pathfinder elements, particularly potassium in surficial rock grab samples; and 3) arsenic enrichment defined by in-soil As anomalies that intensify to the east of the main mineralized trend.

**FIGURE 10.27 HYD BX-02 DRILL HOLE COLLAR PLAN**

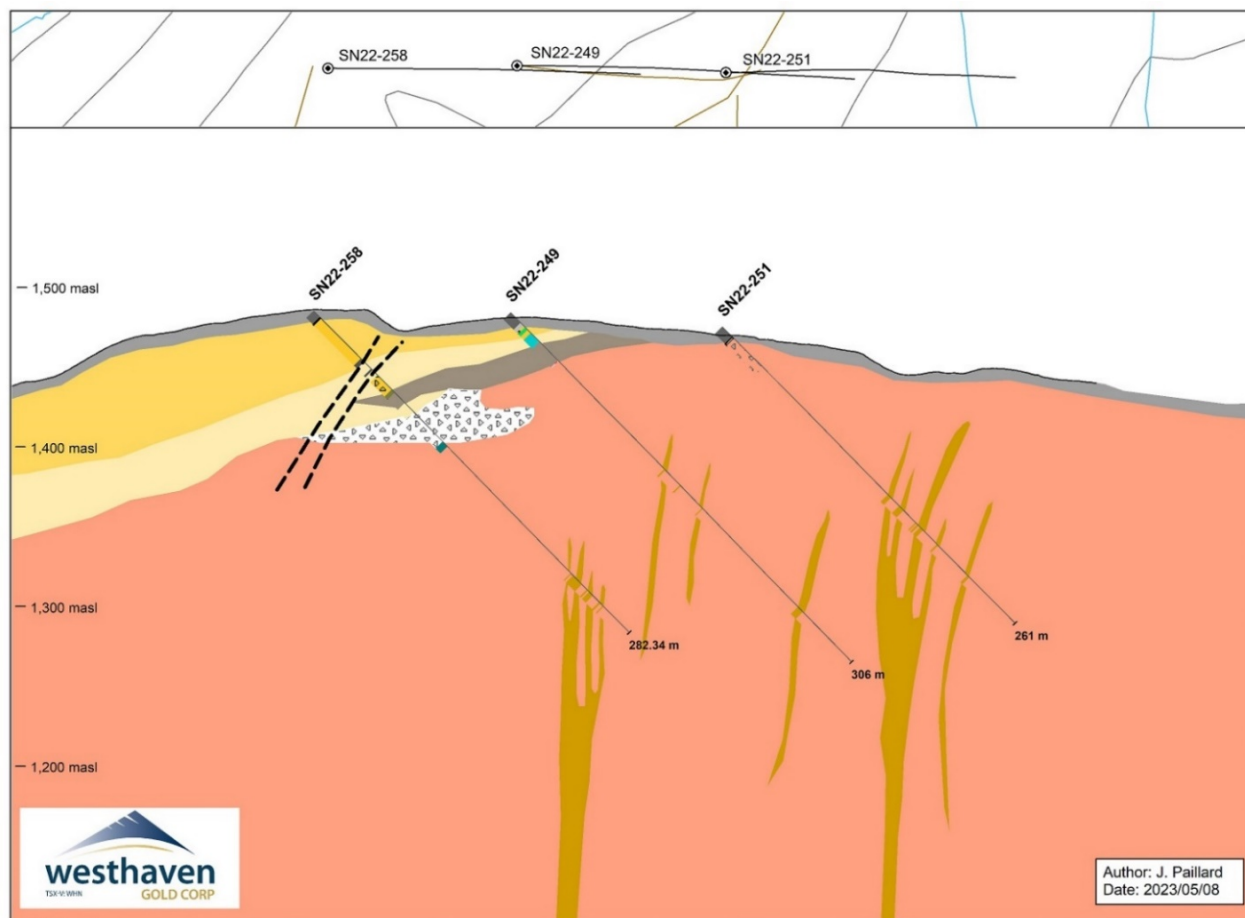


Source: Paarup (2023)

The interpreted geology of HYD BX-02 based on the seven drill holes, can be divided generally into three main lithological packages: 1) an upper package comprising rhyolite flows with interbedded minor autobrecciated rhyolite flows; 2) a middle package composed of interbedded rhyolitic tuffs, including heterolithic welded tuffs, brecciated tuffs, and ash tuffs with minor lenses of epiclastic sandstone and conglomerate; and 3) a massive granodiorite unit at the base that may belong to the Nicola Group, which serves as the local basement and hosts several basalt dykes

(Figure 10.28). The upper and middle packages, and the upper surface of the granodiorite, all dip shallowly to the southwest.

**FIGURE 10.28 HYD BX-02 CROSS-SECTIONAL PROJECTION HYDROBX02\_01**



*Source: Paarup (2023)*

Basalt dykes 0.5 m to 10 m thick occur in all seven drill holes completed at HYD BX-02. All dykes are confined to the granodiorite unit and are interpreted to be subvertical in orientation. At the present time, continuity between cross-sections is unclear. However, elsewhere on the Property, similar basalt dykes trend roughly north-south.

Faults are present, most abundantly in the basement granodiorite. One fault was observed in a brecciated rhyolite flow (Figure 10.28).

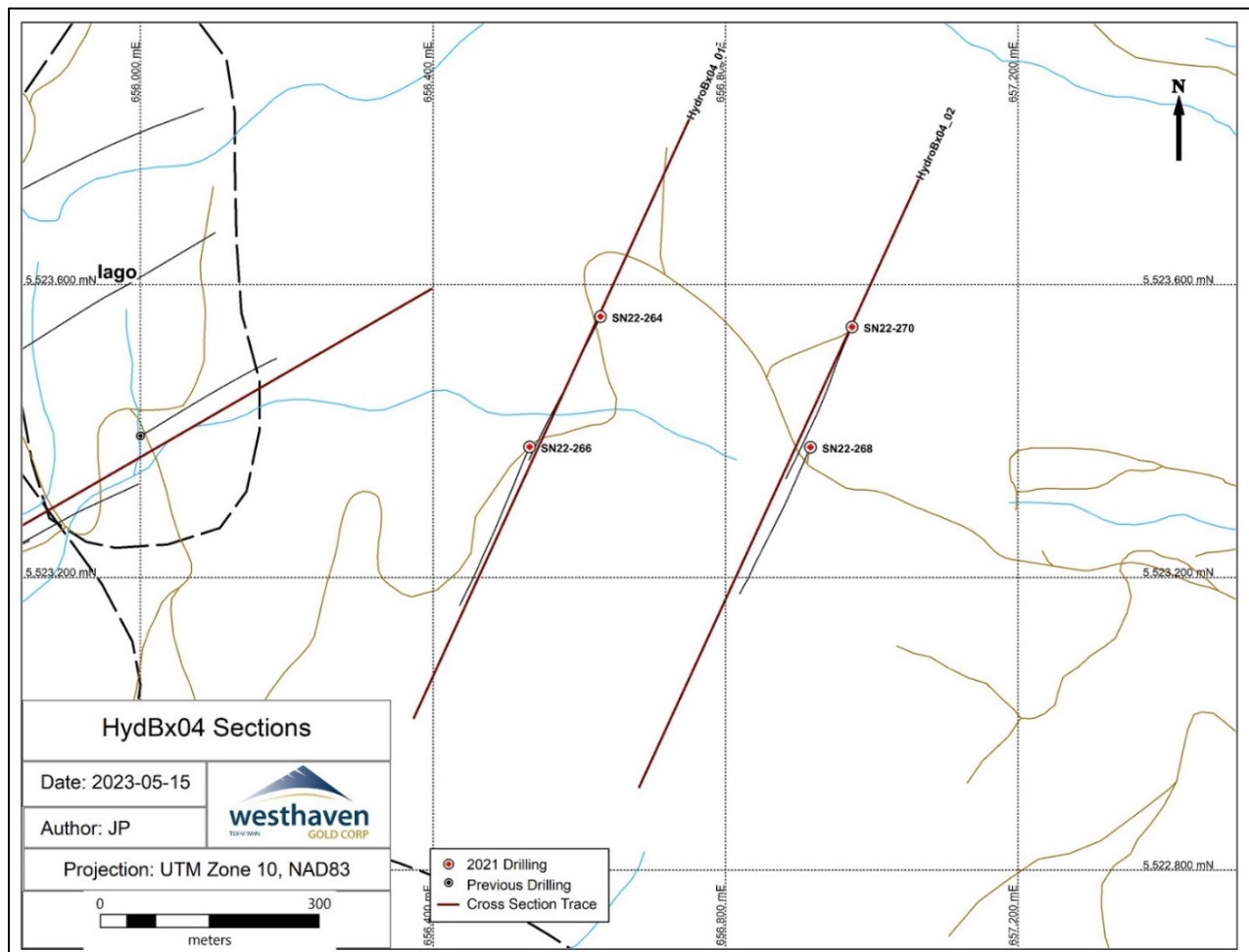
Calcite veins  $\leq 10$  mm wide are the most common vein type (5 to 10%) observed in the 2022 drilling at HYD BX-02. White and black chalcedony veins  $\leq 10$  mm wide and 2 to 5% in volume occur in the felsic lithologies and also in the granodiorite basement. Rare quartz-carbonate veins  $\leq 20$  mm wide also occur in the felsic units and the granodiorite. Rare hematitic and pyritic veinlets and stringers are mainly confined to the granodiorite.

The highest gold grade intersections occur in drill hole SN22-249 (3.28 g/t Au over 0.9 m) and drill hole SN22-257 (1.39 g/t Au over 1.2 m and 1.23 g/t Au over 6.0 m) in the quartz carbonate veining in the basement granodiorite. These significant gold values and alteration haloes derived from pathfinder elements in the drill core, suggests the potential of a new gold-bearing low sulphidation epithermal system offset 1.2 km north from the main mineralized structure, as currently recognized at Shovelnose. The two gold intersecting holes were drilled on two different cross-sections, revealing the mineralized northwest trend has a strike length of >400 m long.

### 10.6.8 HYD BX-04

The HYD BX-04 Target is located 2 km southeast of South Zone, and 500 m to the northeast of the Othello Prospect (Figure 10.1). The four drill holes completed here were drilled from four individual pads on two separate cross-sections (Figure 10.29). The purpose of the 2022 drilling at HYD BX-04 was to test a bleached rhyolite outcrop with local hydrothermal brecciation that is anomalous in arsenic, antimony, and mercury values. The drill holes were collared near an area of abundant rhyolite breccia float boulders with dark fine-grained sulphides rimming some of the clasts.

**FIGURE 10.29 HYD BX-04 2022 DRILL HOLE COLLAR PLAN**



Source: Paarup (2023)

The interpreted geology of HYD BX-04, based on the four drill holes, as shown in two cross-sections (Figures 10.30 and 10.31), can be broken down into three main packages: 1) an upper rhyolite flow (with autobrecciated rhyolite flows and minor xenolithic rhyolite flows); 2) a middle package of heterolithic tuffs (generally rhyolitic in composition); and 3) an intermediate lower component composed of andesite flows and tuffs. From the cross-sections, there appear to be significant geological changes between drill holes.

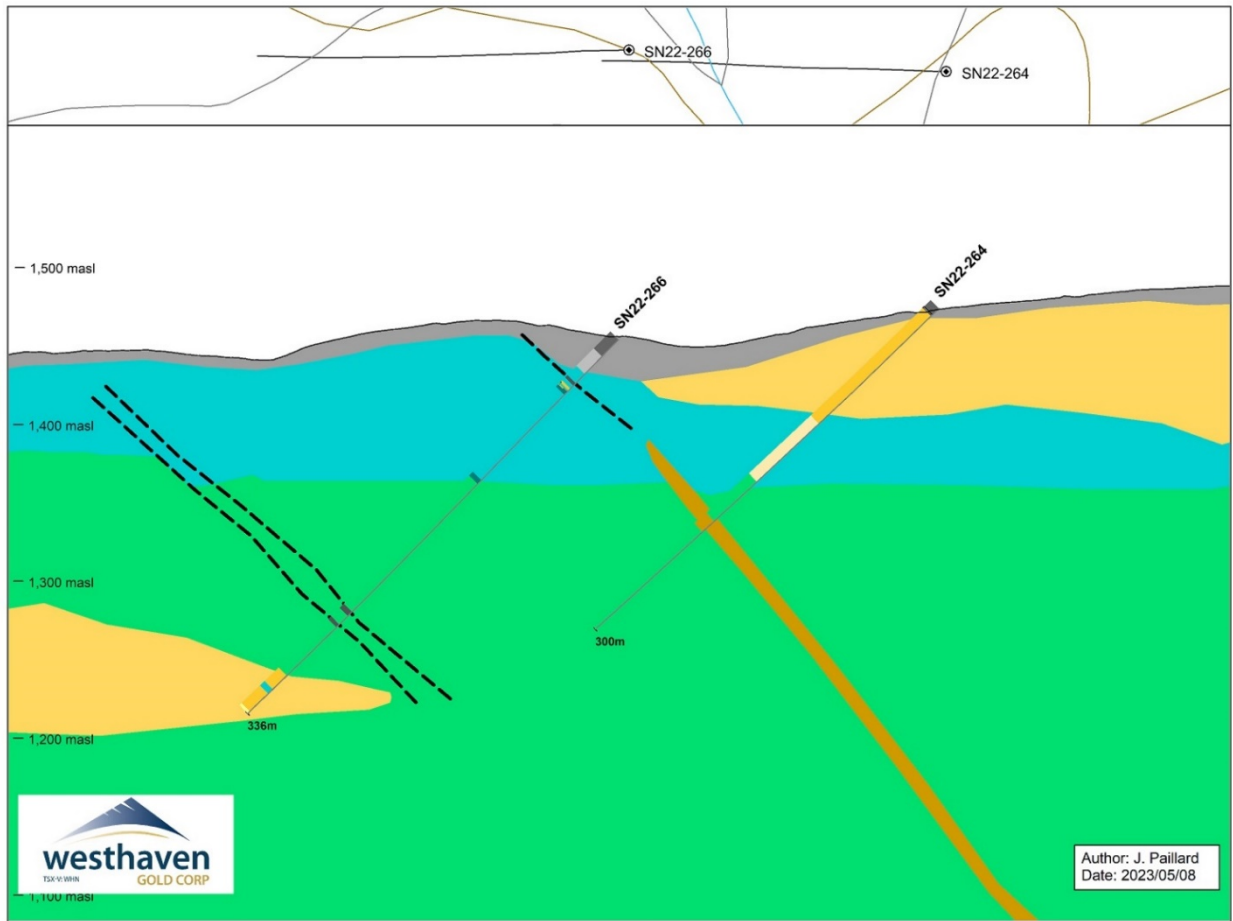
A fault zone occurs in drill holes SN22-266 and SN22-270 (Figures 10.30 and 10.31), and may be oriented roughly northeast-southwest parallel to the drilling direction (205°), suggesting a normal fault with minor movement. Faulting was not observed in the upper rhyolite flow package in SN22-266 and is present in other drill holes here. The presence of this inferred normal fault is also supported by the deeper overburden in drill hole SN22-266. The relative difference between the thicknesses of the upper felsic cap and the thickening intermediate basement between cross-sections might have structural implications; the western section (Figure 10.30) appears to be uplifted and eroded in comparison to the lower, or perhaps down-dropped eastern section (Figure 10.31).

A dark grey basalt dyke intersects the basement andesite tuff, the middle package heterolithic tuff, and the upper package rhyolite flows in drill hole SN22-270. The dyke extends into drill hole SN22-264 intersecting the andesite flow. The dykes are strongly magnetic, have a fresh, unaltered appearance, and contain 5 to 7% feldspar amygdules with xenoliths of entrained andesite at the upper and lower contacts (Figure 10.30).

White and black massive chalcedony veins and quartz-carbonate veins ( $\leq 3\%$  by volume) are exclusively present in the felsic lithologies described above, and are proximal to the moderate to strong altered green clay devitrified zones. Brecciated stockworks of hematized calcite are present throughout the felsic and intermediate units.

A grey massive brecciated quartz vein is emplaced into a rhyolite flow host is observed in drill hole SN22-270. Remnant rhyolite fragments within the veining are intensely bleached, with a vestigial wall-rock texture. The host rock is a light-green porphyritic banded and silicified rhyolite (Figure 10.30). On the accompanying cross-sectional projection, the brecciated quartz vein has been extended roughly northeast-southwest towards drill hole SN22-268, which suggests the brecciation present in the rhyolite flow in drill hole SN22-268 is caused either by fluid pressure during injection of the quartz vein, or by flow brecciation when the andesite flow was emplaced.

**FIGURE 10.30 HYD BX-04 CROSS-SECTIONAL PROJECTION HYDROBX04\_01**



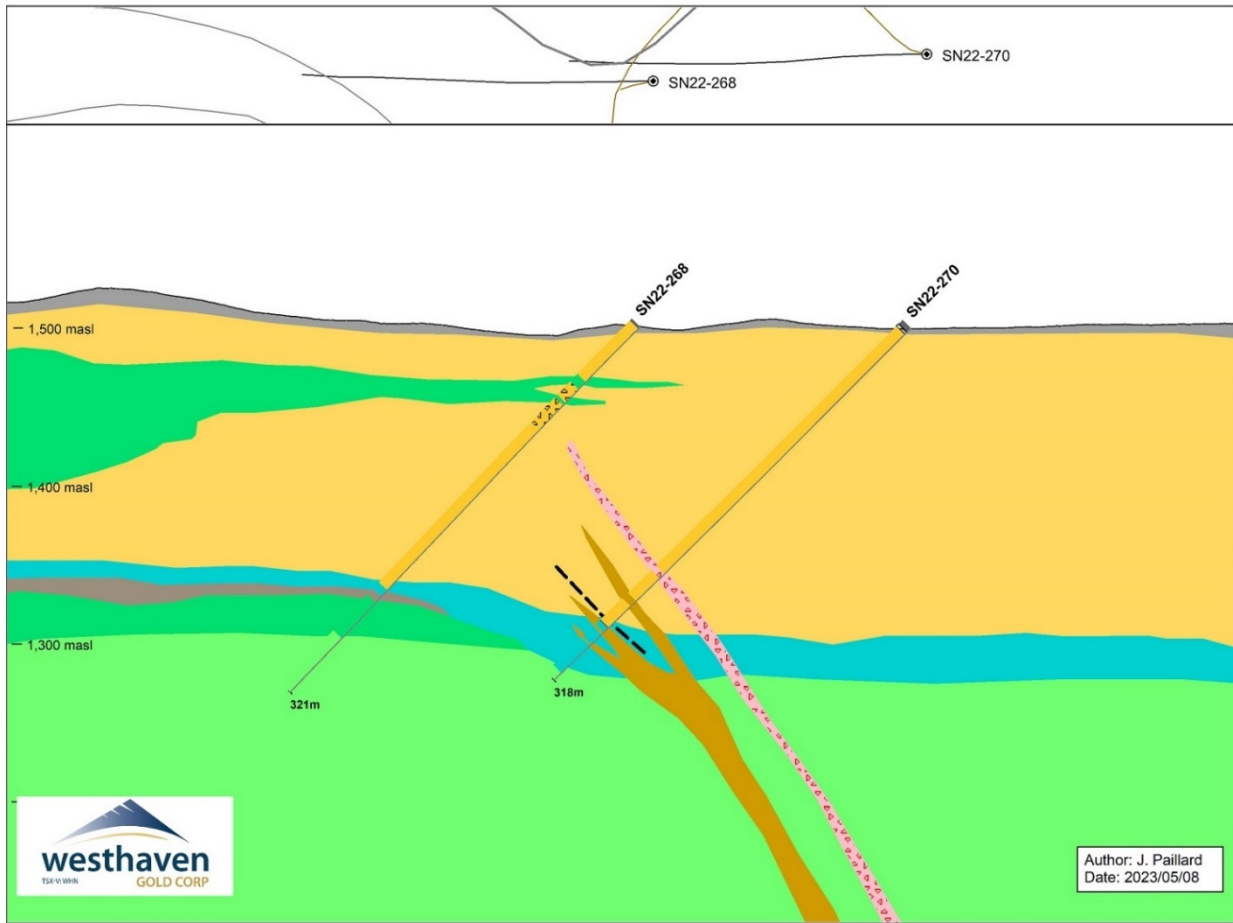
*Source: Paarup (2023)*

A dark grey basalt dyke intersects the basement andesite tuff, the middle package heterolithic tuff, and the upper package rhyolite flows in drill hole SN22-270. The dyke extends into drill hole SN22-264, intersecting the andesite flow. The dykes are strongly magnetic, have a fresh, unaltered appearance and contain 5 to 7% feldspar amygdules with xenoliths of entrained andesite at the upper and lower contacts.

No significant gold mineralization was identified in the 2022 drill holes. Arsenic values (between 1.4 and 50.0 ppm As) in the upper felsic packages and the presence of chalcedony and quartz carbonate veinlets may suggest the presence of circulating fluids in a weak epithermal system.



**FIGURE 10.31 HYD BX-04 CROSS-SECTIONAL PROJECTION HYDROBx02\_02**



*Source: Paarup (2023)*

## **11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY**

The following section discusses the sample preparation, analyses and security procedures carried out by Westhaven at the Shovelnose Gold Property.

### **11.1 SAMPLE PREPARATION AND SECURITY**

All drilling at the Shovelnose Gold Property to date has been completed by Westhaven. At the end of each shift, a representative of the drilling contractor delivers the drill core from the Property to a secure drill core logging facility located in Merritt, BC.

When delivered to the drill core logging facility, all drill core handling is carried out by, or under the supervision of, the project geologist. Care is taken to eliminate sampling biases that can impact the analytical results. All jewelry is removed prior to handling drill core and the work area is kept clean during splitting.

Geotechnical measurements of drill core are taken, including drill core recovery, Rock Quality Designation (“RQD”), fracture frequency, fracture roughness, Intact Rock Strength (“IRS”), bulk density and magnetic susceptibility. All drill core is geologically logged, photographed and sampled. Geological data, including lithology, alteration, mineralization, veining and structural measurements are recorded.

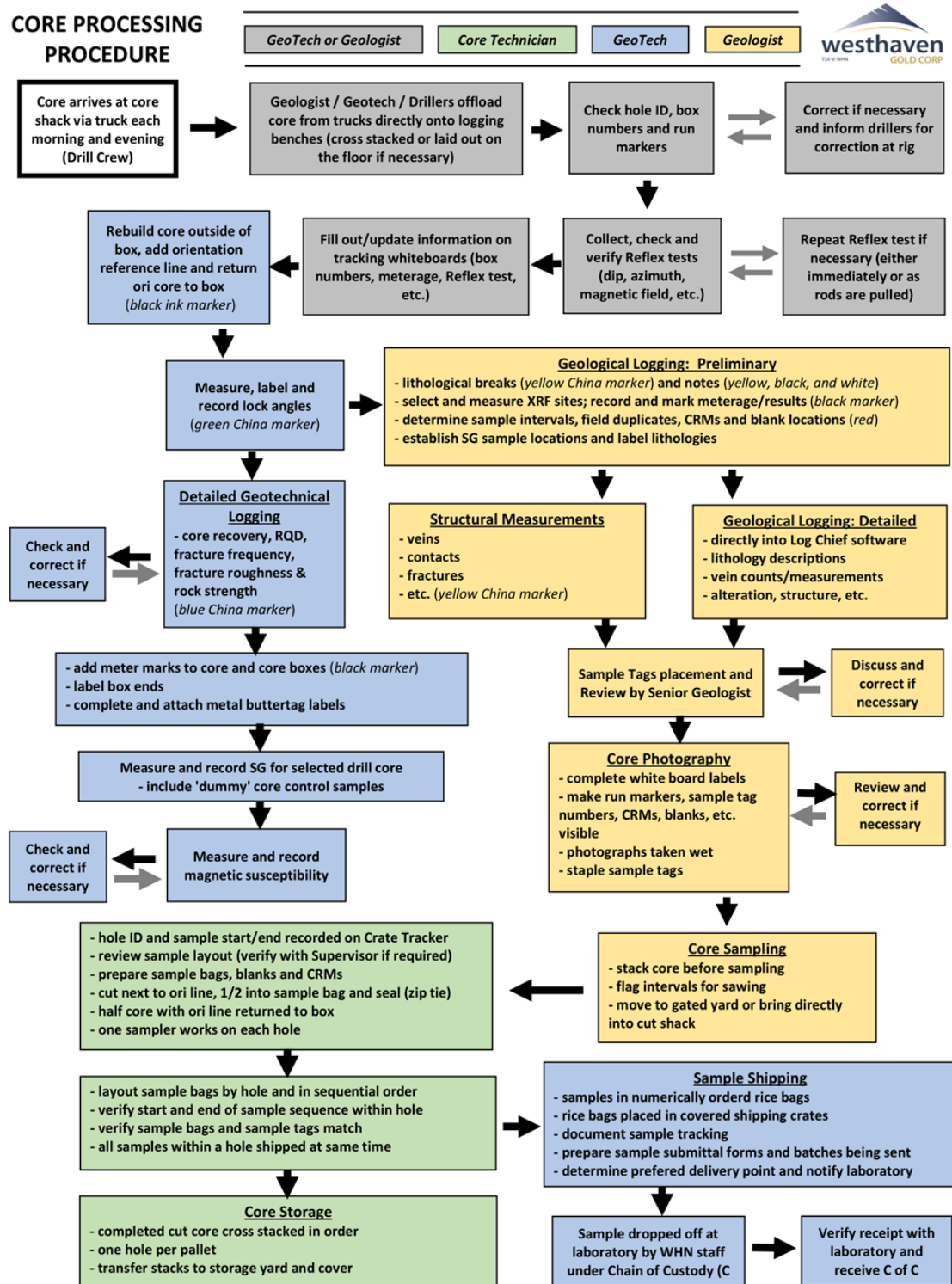
Drill core sample lengths range from, no less than 30 cm, to no greater than 3.25 m (block to block in unmineralized zones), with an average sample length of 1 m in mineralized zones. Care is taken to break samples along lithological features, significant faults and alteration fronts.

Drill core was originally split into halves lengthwise using a conventional manual drill core splitter which has been replaced with a power saw. Cutting is guided by the axis parallel measurement line markings used for drill core orientation measurements. One-half of the drill core is placed into a plastic sample bag with an identifying tag and the bag is sealed using plastic strap closures. The remaining half-drill core with the orientation measurement line is returned in place to the labelled drill core box with a copy of the sample tag affixed to the box. Drill core boxes are labelled with metal tags and catalogued. Boxes of sawn drill core are cross stacked on pallets, drill hole by drill hole, stored and readily accessible in Westhaven’s storage facility in Merritt BC.

The sealed sample bags are placed into large rice sacks, which are labelled with the corresponding sample numbers and company name prior to shipping. Drill core samples collected between 2017 to early 2020 were personally delivered to ALS’s preparation facilities in Kamloops BC by representatives of Westhaven. Starting in early 2020 and continuing through most of 2021, Westhaven arranged for authorized representatives of ALS’s Kamloops office to collect drill core samples in wooden crates directly from Westhaven’s Merritt drill core facility under industry standard Chain of Custody documentation. In November of 2021, seven batches of drill core samples representing exploration drill holes SN21-185 to SN21-191 were delivered by Westhaven personnel directly to the North Vancouver laboratory of ALS, due to delays encountered at the Kamloops facility. In July of 2022, a representative of ALS Kamloops was no longer available to pick-up sample shipments directly from Westhaven’s Merritt core shack facility, and the last pick-up by ALS was undertaken on July 9, 2022. All subsequent samples have been delivered to either

ALS Kamloops or ALS North Vancouver by employees of Westhaven following documented strict Chain of Custody protocol. A summary of Westhaven’s drill core sampling procedures is given in Figure 11.1.

**FIGURE 11.1 WESTHAVEN DRILL CORE PROCESS FLOWSHEET**



Source: Westhaven (August 2023)

## **11.2 BULK DENSITY DETERMINATION**

Bulk density determinations are performed on-site by a logging geologist using the water displacement method. Samples are selected by the logging geologist and must be of a single rock type, competent, no greater than 20 cm in length, and no less than 10 cm in length. Care is taken with zones of veining, where there is typically a mixture of small quartz veins and wall rock, and all bulk density determinations are carried out on select samples containing only vein material, or only wall rock. A “Reference” measurement utilizing an aluminum tube, is taken every twentieth bulk density measurement, for quality control purposes. When measurements are complete, each sample is returned to the original location in the drill core box, taking care that the drill core is placed back in its original location correctly.

## **11.3 SAMPLE PREPARATION AND ANALYSIS**

Drill core samples collected by Westhaven at the Project from 2011 to 2023, have been analyzed at AGAT Laboratories (“AGAT”) in Burnaby, BC, Acme Analytical Laboratories (“Acme”) in Vancouver, BC, ALS Minerals (“ALS”) in Kamloops and Vancouver, BC, or Activation Laboratories Ltd (“Actlabs”) in Kamloops, BC. All the laboratories are independent of Westhaven.

AGAT has developed and implemented at each of its locations a Quality Management System (“QMS”) designed to ensure the production of consistently reliable data. The system covers all laboratory activities and takes into consideration the requirements of the International Standards Organization (“ISO”). AGAT maintains ISO registrations and accreditations. ISO registration and accreditation provide independent verification that a QMS is in operation at the location in question. AGAT Laboratories is certified to ISO 9001:2015 standards and is accredited, for specific tests, to ISO/IEC 17025:2017 standards.

Acme has implemented a quality system compliant with the ISO 9001 Model for Quality Assurance and ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories.

ALS developed and implemented at each of its locations a QMS designed to ensure the production of consistently reliable data. The system covers all laboratory activities and takes into consideration the requirements of ISO standards. ALS maintains ISO registrations and accreditations. ISO registration and accreditation provides independent verification that a QMS is in operation which meets all requirements of ISO/IEC 17025:2017 and ISO 9001:2015. All ALS geochemical hub laboratories are accredited to ISO/IEC 17025:2017 for specific analytical procedures.

The Actlabs’ Quality System is accredited to international quality standards through ISO/IEC 17025:2017 and ISO 9001:2015. The accreditation program includes ongoing audits, which verify the QA system and all applicable registered test methods. Actlabs is also accredited by Health Canada.

A summary of the history of analytical procedures and laboratories for the Shovelnose Gold Property is outlined in Table 11.1.

**TABLE 11.1**  
**SUMMARY OF LABORATORY AND ANALYTICAL PROCEDURES**

<b>Year - Company</b>	<b>Sample Type</b>	<b>Laboratory</b>	<b>Preparation</b>	<b>Analytical Procedure</b>	<b>Analytical Procedure - Finish</b>
2001-2002 Almaden	silt	ACME Analytical Vancouver BC	dry; sieve -80 mesh (-177 µm); 30 g charge	Aqua Regia	ICP-MS
	soil	ACME Analytical Vancouver BC	dry; sieve -80 mesh (-177 µm); 15 g charge	Aqua Regia	ICP-MS
	rock	ACME Analytical Vancouver BC	crush 70% -10 mesh (2 mm); split 250 g; pulverize 95% -150 mesh (100 µm); 30 g leach charge; 29.2 g gold charge	Aqua Regia and Fire Assay	ICP-MS and ICP-ES
	drill core	n/a	n/a	n/a	n/a
2006-2010 Strongbow	silt	ACME Analytical Vancouver BC	dry; sieve -80 mesh (-177 µm); 15 g charge and 30 g charge	Aqua Regia and Fire Assay	ICP-MS
	soil	ACME Analytical Vancouver BC	dry; sieve -80 mesh (-177 µm); 15 g charge; crushed; pulverize 95% -150 mesh (-100 µm); 30 g gold charge	Aqua Regia and Fire Assay	ICP-MS
	rock	ACME Analytical Vancouver BC	crushed; pulverize 95% -150 mesh (-100 µm); 30 g gold charge; crush 70% -10 mesh (2 mm); split 250 g; pulverize 95% -150 mesh (100 µm); 29.2 g charge; metallics assay: pulverize 500 g -2 mm to 95% -150 mesh; screen fine/coarse and assay	Aqua Regia and Fire Assay	ICP-MS and ICP-ES and FA
	drill core	n/a	n/a	n/a	n/a
2011 Westhaven	silt	AGAT Laboratories Burnaby BC	dry; screen -80 mesh; pulp; 1 g charge	Aqua Regia	ICP-OES/ICP-MS
	soil	ACME Analytical Vancouver BC	dry; sieve -80 mesh (-177 µm); 30 g charge	Aqua Regia and Fire Assay	ICP-MS
	rock	ACME Analytical Vancouver BC	crush 70% -10 mesh (2 mm); split 250 g; pulverize 95% -150 mesh	Aqua Regia and Fire Assay	ICP-MS plus ICP-OES/ICP-

**TABLE 11.1**  
**SUMMARY OF LABORATORY AND ANALYTICAL PROCEDURES**

<b>Year - Company</b>	<b>Sample Type</b>	<b>Laboratory</b>	<b>Preparation</b>	<b>Analytical Procedure</b>	<b>Analytical Procedure - Finish</b>
		<i>and</i> AGAT Laboratories Burnaby BC	(100 µm); 30 g leach charge; 29.2 g gold charge		MS <i>and</i> AAS
	drill core	AGAT Laboratories Burnaby BC	crush to 75% -10 mesh (2 mm); split 250 g; pulverize to 80% passing -200 mesh (74 µm), 1 g charge; 30 g gold charge	Aqua Regia <i>and</i> Fire Assay	ICP-OES/ICP-MS <i>and</i> AAS
2012-2013 Westhaven	silt	n/a	n/a	n/a	n/a
	soil	ACME Analytical Vancouver BC	dry; sieve -80 mesh (-177 µm); 30 g charge	Aqua Regia <i>and</i> Fire Assay	ICP-MS
	rock	ACME Analytical Vancouver BC	crush 70% -10 mesh (2 mm); split 250 g; pulverize 95% -150 mesh (100 µm); 15 g leach charge; 29.2 g gold charge	Aqua Regia <i>and</i> Fire Assay	ICP-MS <i>and</i> AAS <b>plus</b> gravimetric
	drill core	ACME Analytical Vancouver BC	crush 70% -10 mesh (2 mm); split 250 g; pulverize 95% -150 mesh (100 µm); 15 g leach charge; 29.2 g gold charge	Aqua Regia <i>and</i> Fire Assay	ICP-MS <i>and</i> AAS <b>plus</b> gravimetric
2014-2015 Westhaven	silt	n/a	n/a	n/a	n/a
	soil	ALS Minerals Kamloops <i>and</i> Vancouver BC	± dry; sieve to -180 micron; 50 g charge	Aqua Regia	ICP-MS
	rock	n/a	n/a	n/a	n/a
	drill core	ALS Minerals Kamloops <i>and</i> Vancouver BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 µm; 0.5 g charge; 30 g gold charge	Aqua Regia <i>and</i> Fire Assay	ICP-MS <i>and</i> AAS
2016 Westhaven	silt	n/a	n/a	n/a	n/a
	soil	n/a	n/a	n/a	n/a
	rock	n/a	n/a	n/a	n/a
	drill core	Actlabs* Kamloops BC	dry; sieve -177 µm; 0.5 g charge (semi-quantitative for gold)	Aqua Regia <i>and</i> Fire Assay	ICP-MS <i>and</i> FA <i>and</i> gravimetric
2017 Westhaven	silt	n/a	n/a	n/a	n/a
	soil	n/a	n/a	n/a	n/a

**TABLE 11.1**  
**SUMMARY OF LABORATORY AND ANALYTICAL PROCEDURES**

<b>Year - Company</b>	<b>Sample Type</b>	<b>Laboratory</b>	<b>Preparation</b>	<b>Analytical Procedure</b>	<b>Analytical Procedure - Finish</b>
	rock	ALS Minerals Kamloops and Vancouver BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 um; 0.5 g charge; 30 g gold charge	Aqua Regia and Fire Assay	ICP-MS and AAS
	drill core	ALS Minerals Kamloops and Vancouver BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 um; 0.5 g charge; 30 g gold charge	Aqua Regia and Fire Assay	ICP-MS and AAS
2018 Westhaven	silt	n/a	n/a	n/a	n/a
	soil	ALS Minerals Kamloops and Vancouver BC	± dry; sieve to -180 micron; 50 g charge	Aqua Regia	ICP-MS
	rock	n/a	n/a	n/a	n/a
	drill core	ALS Minerals Kamloops and Vancouver BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 um; 0.5 g charge; 30 g gold charge	Aqua Regia and Fire Assay	ICP-MS and AAS and gravimetric
2019 Westhaven	silt	n/a	n/a	n/a	n/a
	soil	ALS Minerals Kamloops and Vancouver BC	± dry; sieve to -180 µm; 50 g charge	Aqua Regia	ICP-MS
	rock	ALS Minerals Kamloops and Vancouver BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 um; 0.25 g charge 4 acid; 0.5 g charge Hg; 30 g gold charge	Aqua Regia and 4 Acid and Fire Assay	ICP-MS and AAS and gravimetric
	drill core	ALS Minerals Kamloops and Vancouver BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 um; 0.25 g charge 4 acid; 0.5 g charge Hg; 30 g gold charge ICP; 30 g gold charge gravimetric	Aqua Regia and 4 Acid and Fire Assay	ICP-MS and ICP-AES and Fire Assay and gravimetric
2020 Westhaven	silt	ALS Minerals Kamloops BC	± dry; sieve to -180 µm; 50 g charge	Aqua Regia	ICP-MS
	soil	ALS Minerals Kamloops BC	± dry; sieve to -180 µm; 50 g charge	Aqua Regia	ICP-MS
	rock	ALS Minerals Kamloops BC	fine crushing 70% <2 mm; split 250 g; pulverize	Aqua Regia	ICP-MS and AAS

**TABLE 11.1**  
**SUMMARY OF LABORATORY AND ANALYTICAL PROCEDURES**

<b>Year - Company</b>	<b>Sample Type</b>	<b>Laboratory</b>	<b>Preparation</b>	<b>Analytical Procedure</b>	<b>Analytical Procedure - Finish</b>
			85% <75 um; 0.25 g charge 4 acid; 0.5 g charge Hg; 30 g gold charge		<i>and</i> gravimetric
	drill core	ALS Minerals Kamloops BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 um; 0.25 g charge 4 acid; 0.5 g charge Hg; 30 g gold charge ICP; 30 g gold charge gravimetric	Aqua Regia and 4 Acid and Fire Assay	ICP-MS and ICP-AES and Fire Assay and gravimetric
2021, 2022, and up to July 2023 Westhaven	silt	ALS Minerals Kamloops and Vancouver BC	field sieve wet to -50 mesh (0.3mm) and -100 mesh (0.15mm); ± dry; lab sieve to -140 mesh (0.1mm) and -230 mesh (-0.06mm); 25 to 500 g charge	Aqua Regia and CN	ICP-MS
	soil	ALS Minerals Kamloops and Vancouver BC	± dry; sieve to -180 µm; 50 g charge	Aqua Regia	ICP-MS
	rock	ALS Minerals Kamloops and Vancouver BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 um; 0.25 g charge 4 acid; 0.5 g charge Hg; 30 g gold charge	Aqua Regia and 4 Acid and Fire Assay	ICP-MS and ICP-AES and Fire Assay and gravimetric
	drill core	ALS Minerals Kamloops and Vancouver BC	fine crushing 70% <2 mm; split 250 g; pulverize 85% <75 um; 0.25 g charge 4 acid; 0.5 g charge Hg; 30 g gold charge ICP; 30 g gold charge gravimetric	Aqua Regia and 4 Acid and Fire Assay	ICP-MS and ICP-AES and Fire Assay and gravimetric

**Source:** Westhaven (August 2023)

\* In 2016, drill core samples were initially sent to Actlabs of Kamloops, BC. Laboratory checks of 70 samples with ALS confirmed the multi-element ICP and fire assay results from Act Labs were comparable to ALS. However, gold analysis in multi-element ICP was unreliable. All 2016 drill core samples were re-analyzed by ACT Labs for gold using fire assay methods.

Drill core samples with visible gold present have also been analyzed by screen metallic method from 2018.



## 11.4 QUALITY ASSURANCE/QUALITY CONTROL REVIEW

Westhaven commenced drilling at the Project in 2011 and, from this time, implemented a Quality Assurance / Quality Control (“QA/QC” or “QC”) program, which included the routine insertion of certified reference material (“CRMs”) and blanks into the sample stream sent for geochemical analysis. At the initiation of drilling through to drill hole SN18-14 (drilled in 2018), the gold analyses were done by an aqua regia method with ICP finish (AR\_ICPMS). Only drill core samples with a higher gold grade from this period were rerun by fire assay, the CRMs were not. Certification of the CRMs used was based upon round robin analysis by Fire Assay of 30 g sample size, and the CRMs were therefore not suited to the AR\_ICPMS method used at the Project. The Authors have not reviewed the CRM results for the 2011 to 2017 period.

In 2018 (from drill hole SN18-15), Westhaven changed the method for analyzing gold to fire assay and, from this time, the CRMs used at the Project were suitable for use and have therefore been included by the Authors in the assessment of QA/QC carried out at the Shovelnose Gold Property.

In 2019, QC protocol for drill core sampling consisted of inserting CRMs and blanks into the drill core sample stream at a frequency of at least one CRM and one blank per 23 samples.

Commencing in 2020, Westhaven implemented formal written standard operating procedures for QC sample insertion. CRMs are inserted every 25 samples, on multiples of 25, alternating three CRMs from Canadian Resource Laboratories of Langley, BC (“CDN”) and two from OREAS North America Inc. of Mansfield, Ontario (“OREAS”), such that three CDN and one of the OREAS CRMs are inserted every 100 samples. Blanks are placed randomly between CRMs, at the same rate of insertion. Double blanks are positioned following samples with visible gold or strong ginguero mineralization.

The collection of field duplicates (quartered drill core) was initiated in 2021, at a rate of one every 25 samples, from drill holes at the South Zone and select other drill holes showing evidence of mineralization, and situated between CRMs and blanks. Field duplicates are also prepared for samples within vein zones, with suspected high grade, ginguero mineralization and (or) visible gold.

CRM insertion continued at a rate of one every 25 samples throughout 2022 to July 2023, however, three CDN CRM and five OREAS CRMs were in use. The CDN and OREAS CRMs were inserted consecutively, with this pattern resulting in a desired insertion rate of three CDN and five OREAS CRMs for every 200 samples.

Westhaven currently monitors laboratory assay performance of all CRM and blank material as results are received. Deviations greater than  $\pm 3$  standard deviations from the expected certified mean value of each CRM are followed-up with the lab in a timely manner and samples re-assayed if required.

## **11.4.1 2011 to 2018 (Pre-Drill Hole SN18-15) Drilling**

### **11.4.1.1 Performance of Certified Reference Materials**

As described in the introduction of Section 11.4, the CRM results for gold have not been assessed by the Authors for this time period, since they are not suited to the aqua regia method used at the Project from 2011 to 2018.

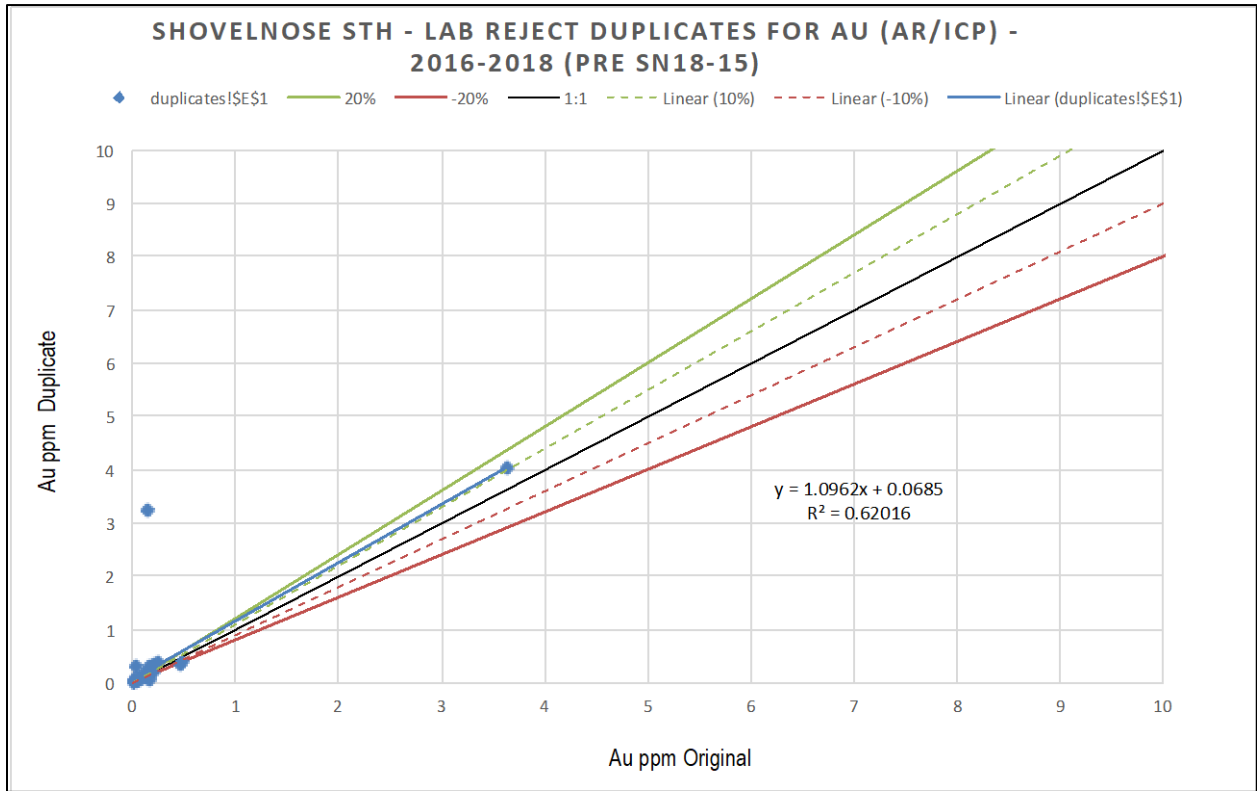
### **11.4.1.2 Performance of Blanks**

The Authors reviewed ALS's internal laboratory blanks for both gold and silver for 2015 to 2018 and no material contamination issues were noted.

### **11.4.1.3 Performance of Laboratory Duplicates**

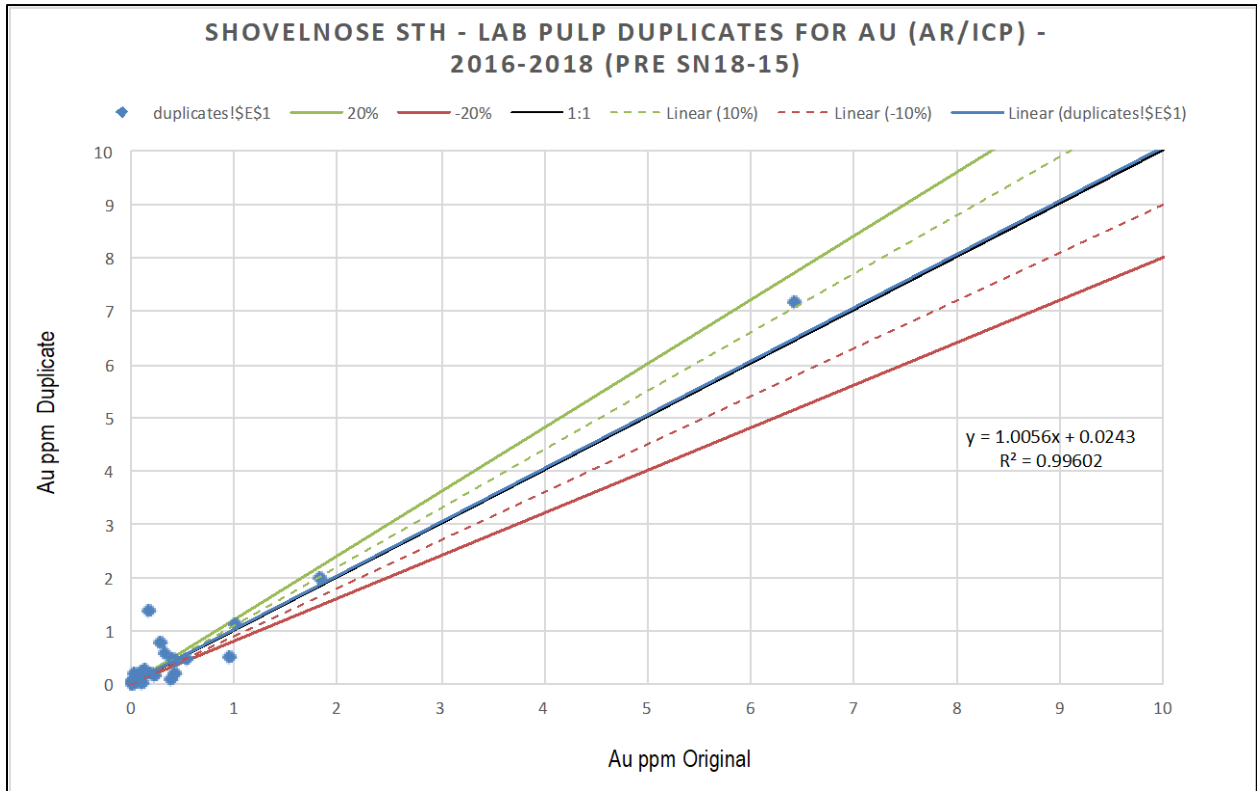
The internal laboratory duplicate data for the AR/ICP and FA/AAS analyses for gold were examined for the 2016 to 2018 drill programs, up to and including drill hole SN18-14. All data were assessed together due to the smaller amount of drilling carried out throughout these drilling campaigns. The data were scatter graphed (Figures 11.2 to 11.5). The coefficient of determination ("R<sup>2</sup>") values for the AR/ICP coarse reject duplicate data (N=47) were estimated to be 0.620 and 0.996 for the pulp data (N=86). The R<sup>2</sup> values for the FA/AAS coarse reject duplicate data (N=13) were estimated to be 0.997 and 0.998 for the pulp data (N=57).

**FIGURE 11.2 2016 TO 2018 (PRE-HOLE SN18-15) COARSE REJECT DUPLICATE AR/ICP RESULTS FOR AU**



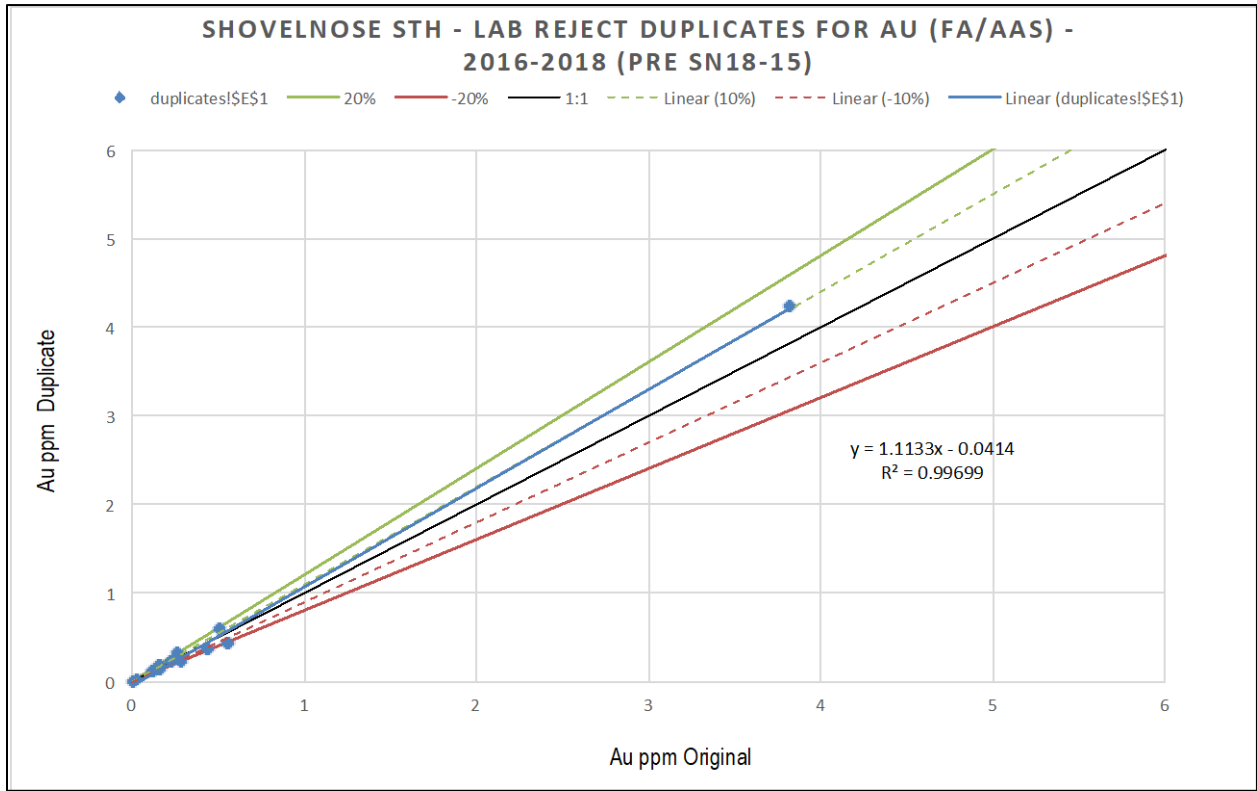
Source: P&E (2021)

**FIGURE 11.3 2016 TO 2018 (PRE-HOLE SN18-15) PULP DUPLICATE AR/ICP RESULTS FOR AU**



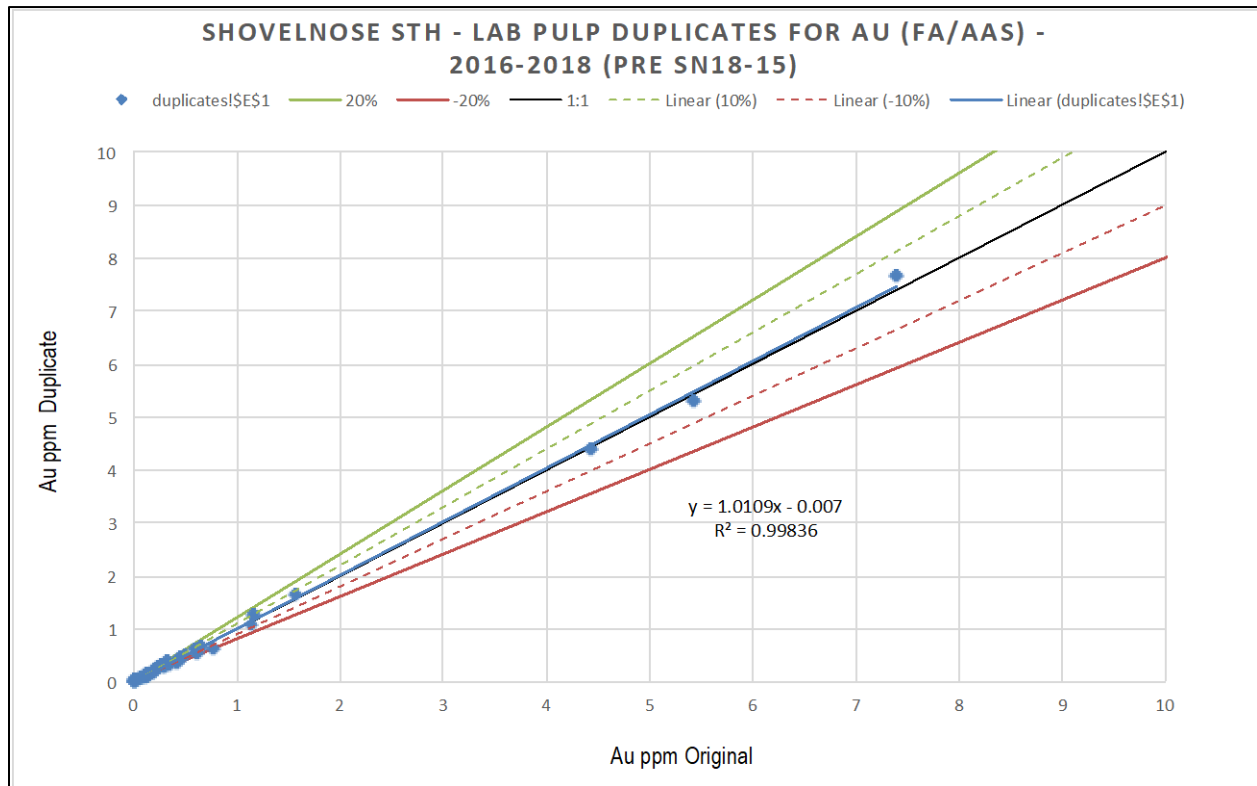
Source: P&E (2021)

**FIGURE 11.4 2016 TO 2018 (PRE-HOLE SN18-15) COARSE REJECT DUPLICATE FA/AAS RESULTS FOR AU**



Source: P&E (2021)

**FIGURE 11.5 2016 TO 2018 (PRE-HOLE SN18-15) PULP DUPLICATE FA/AAS RESULTS FOR AU**



Source: P&E (2021)

The average coefficients of variation (“CoV<sub>AV</sub>”) for the AR/ICP data were calculated at 35.0% for the coarse rejects and 33.4% for the pulps. The CoV<sub>AV</sub> for the FA/AAS data were calculated at 13.3% for the coarse rejects and 6.6% for the pulps. Repeatability issues are evident with the AR/ICP method for gold, with a lack of significant improvement in precision at the pulp level. Westhaven modified the analytical method used for gold to fire assay partway through the 2018 drill campaign, and resolved issues encountered with the AR/ICP method. The FA/AAS precision evaluation show acceptable levels of precision at both the coarse reject and pulp duplicate stages.

### 11.4.2 2018 (Post-Drill Hole SN18-14) Drilling

In 2018, for drill holes SN18-15 to SN18-22, a total of 1,536 drill core samples were submitted to ALS, including 51 CRM samples and 86 blanks, for a total of 137 check samples and an overall insertion rate of 8.9%.

#### 11.4.2.1 Performance of Certified Reference Materials

A total of 51 CRMs was submitted in 2018, representing a 3.3% insertion rate. Three CDN CRMs were used throughout this period including: CDN-GS-P6A, CDN-GS-1V and CDN-GS-5T. All CRMs were certified for both gold and silver. However, overlimit analyses were not undertaken for the CDN-GS-5T CRM.

Criteria for assessing CRM performance are based as follows. Data falling within  $\pm 3$  standard deviations ( $\sigma$ ) from the certified mean value, pass. Data falling outside  $\pm 3$  ( $\sigma$ ) from the certified mean value, fail.

CRM CDN-GS-P6A, the lowest grade CRM used in the 2018 program, returned 18 results, with two results for gold falling outside of the  $\pm 3 \sigma$  from the certified mean value. CRM CDN-GS-1V returned 16 results, with one result for gold and one result for silver falling outside of the  $\pm 3 \sigma$  from the certified mean value. CRM CDN-GS-5T, the highest-grade CRM used in 2018, returned 17 results, with two results for gold falling outside of the  $\pm 3 \sigma$  from the certified mean value. No results were available for silver.

The Authors considers the CRM data to demonstrate acceptable accuracy in the 2018 South Zone diamond drilling data.

#### **11.4.2.2 Performance of Blanks**

The blanks are inserted at a rate of one in 18 samples. All blank data for Au and Ag were graphed. If the assayed value in the certificate was indicated as being less than detection limit, the value was assigned the value of -0.001 for data treatment purposes. An upper tolerance limit of ten times the detection limit value was set. There were 86 data points to examine, representing a frequency of 5.6%.

The vast majority of data plot at or below set tolerance limits for both elements. The highest-grade blank result returned for gold is 0.051 g/t Au, with a total of eight blanks (9.3%) returning  $>0.01$  g/t Au. Most elevated gold blank results directly follow high-grade drill core samples and those not directly following returned results just over the 0.01 ppm Au limit.

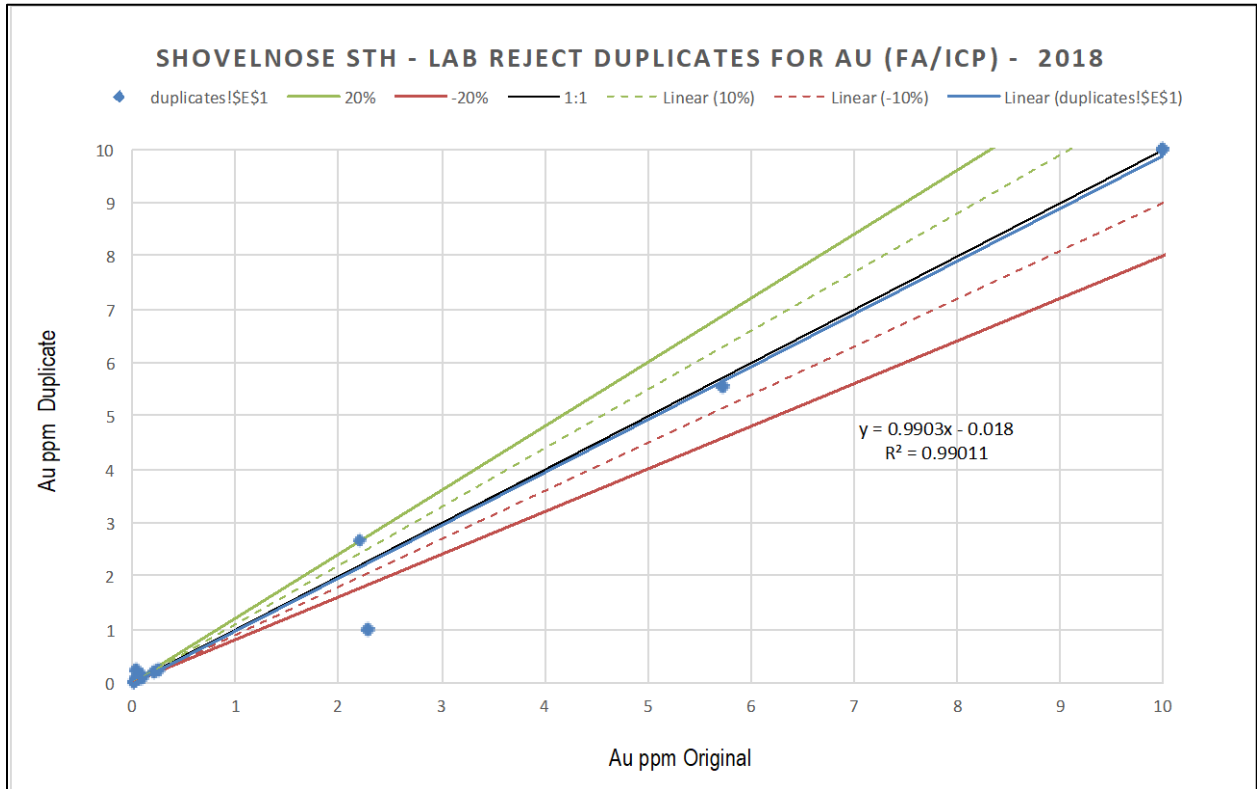
There were nine silver blank results returning values greater than ten times the lower detection limit, with the highest result returning 0.48 ppm Ag. However, all except one of the elevated silver blanks directly follow high-grade drill core results and the result that does not directly follow elevated results, returned results just over the 0.1 ppm silver tolerance limit, at 0.15 ppm Ag.

The Authors does not consider contamination to be significant to the integrity of the 2018 drilling data.

#### **11.4.2.3 Performance of Laboratory Duplicates**

The internal laboratory duplicate data for the FA/ICP analyses for gold were examined for the 2018 drill program (there were too little data for FA/GRAV analyses to allow for meaningful assessment). There were 22 coarse reject and 62 pulp duplicate pairs in the dataset. The data were scatter graphed (Figures 11.6 and 11.7). The  $R^2$  values for the coarse reject duplicate data was estimated to be 0.990 and 0.999 for the pulp data. The  $CoV_{AV}$  were calculated at 32.1% for the coarse rejects and 15.2% for the pulps, both acceptable levels of precision.

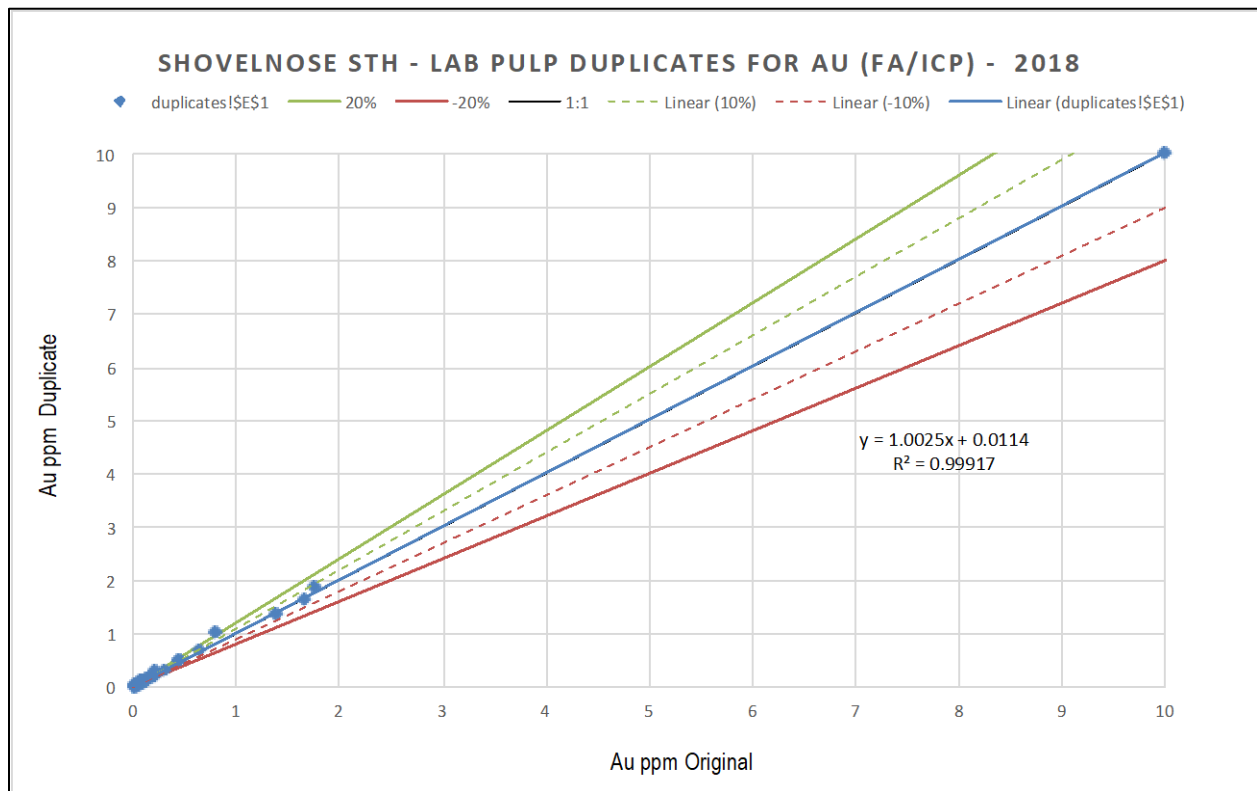
**FIGURE 11.6 2018 COARSE REJECT DUPLICATE RESULTS FOR AU**



Source: P&E (2021)



**FIGURE 11.7 2018 PULP DUPLICATE RESULTS FOR AU**



Source: P&E (2021)

### 11.4.3 2019 Drilling

In 2019, a total of 9,506 drill core samples were submitted to ALS, including 416 CRM samples and 509 blanks, for a total of 925 check samples and an overall insertion rate of 9.7%.

#### 11.4.3.1 Performance of Certified Reference Materials

A total of 416 CRMs was submitted in 2019, representing a 4.4% insertion rate. Only 412 gold and 409 silver samples were processed due to a later-reversed Company policy requiring ALS to request permission to process pulps triggering over-limit analyses. At the time of the policy reversal, four gold and seven silver samples were unable to be processed as the pulps had already been disposed. All six CRMs used during the program were purchased from CDN, including: CDN-GS-P6A, CDN-GS-P6C, CDN-GS-1V, CDN-GS-1Z, CDN-GS-5T and CDN-GS-25. All CRMs are certified and monitoring was undertaken for both gold and silver. Criteria for assessing CRM performance is as described in Section 11.4.2.1. A summary of the CRM performance results for the 2019 program is presented in Table 11.2.

**TABLE 11.2**  
**SUMMARY OF CERTIFIED REFERENCE MATERIALS USED IN 2019**

Reference Material	Certified Mean Value (ppm)	±1 σ (ppm)	±2 σ (ppm)	ALS Results		
				No. Results	No. Exceeding ±3 σ	% ±3 σ Failures
<b>Monitoring Gold</b>						
CDN-GS-P6A	0.738	0.028	0.056	100	6	6.0
CDN-GS-P6C	0.767	0.039	0.078	6	1	16.7
CDN-GS-1V	1.02	0.049	0.098	101	7	6.9
CDN-GS-1Z	1.155	0.0475	0.095	4	0	0.0
CDN-GS-5T	4.86	0.13	0.26	100	1	1.0
CDN-GS-25	25.6	0.47	0.94	101	12	11.9
<b>Monitoring Silver</b>						
CDN-GS-P6A	81	3.5	7	100	3	3.0
CDN-GS-P6C	66	2.75	5.5	6	0	0.0
CDN-GS-1V	71.7	2.5	5	101	0	0.0
CDN-GS-1Z	89.5	2.2	4.4	4	0	0.0
CDN-GS-5T	126	5	10	95	1	1.1
CDN-GS-25	99.5	3.7	7.4	103	0	0.0

*Note: Reference Materials are certified, σ = standard deviation.*

A total of 27 (6.6%) data points for gold exceeded ±3 σ from the certified mean value and four (1.7%) for silver. A number of failed returned CRM results (seven in total) were investigated and found to be misallocated CRMs. No action or follow-up with the laboratory was taken with any of the failed CRMs in the 2019 QAQC program.

CRM CDN-GS-P6A, one of two low-grade CRMs used in the 2019 drilling campaign, returned 100 results, with six (6%) results for gold and three (3%) results for silver falling outside of the ±3 σ from the certified mean value. A slight high bias was noted in the data for silver results. Pre-packaged pulp material from CDN-GS-P6A was exhausted in December 2019. The second low-grade CRM, CDN-GS-P6C, was introduced to replace CDN-GS-P6A and returned six results, with one (16.7%) result for gold falling outside of the ±3 σ from the certified mean value. CRM CDN-GS-1V, one of two low-grade CRMs used in the 2019 drilling campaign, returned 101 results, with seven (6.9%) results for gold falling outside of the ±3 σ from the certified mean value. Pre-packaged pulp material from CRM CDN-GS-1V was exhausted in December 2019. The CDN-GS-1Z CRM, was introduced to replace CDN-GS-1V and returned four results, none of which fell outside of the ±3 σ from the certified mean value for either gold or silver. CRM CDN-GS-5T returned 100 results for gold and 95 for silver, with one (1%) result for gold and one (1.1%) result for silver falling outside of the ±3 σ from the certified mean value. A slight low bias was noted in the data for gold and a slight high bias for silver. CRM CDN-GS-25, the high-grade gold CRM used at the Project in 2019, returned 101 results for gold and 103 for silver, with 12 (11.9%) results for gold falling outside of the ±3 σ from the certified mean value.

The Authors considers that the CRM data demonstrates acceptable accuracy in the Shovelnose 2019 diamond drilling data.

#### **11.4.3.2 Performance of Blanks**

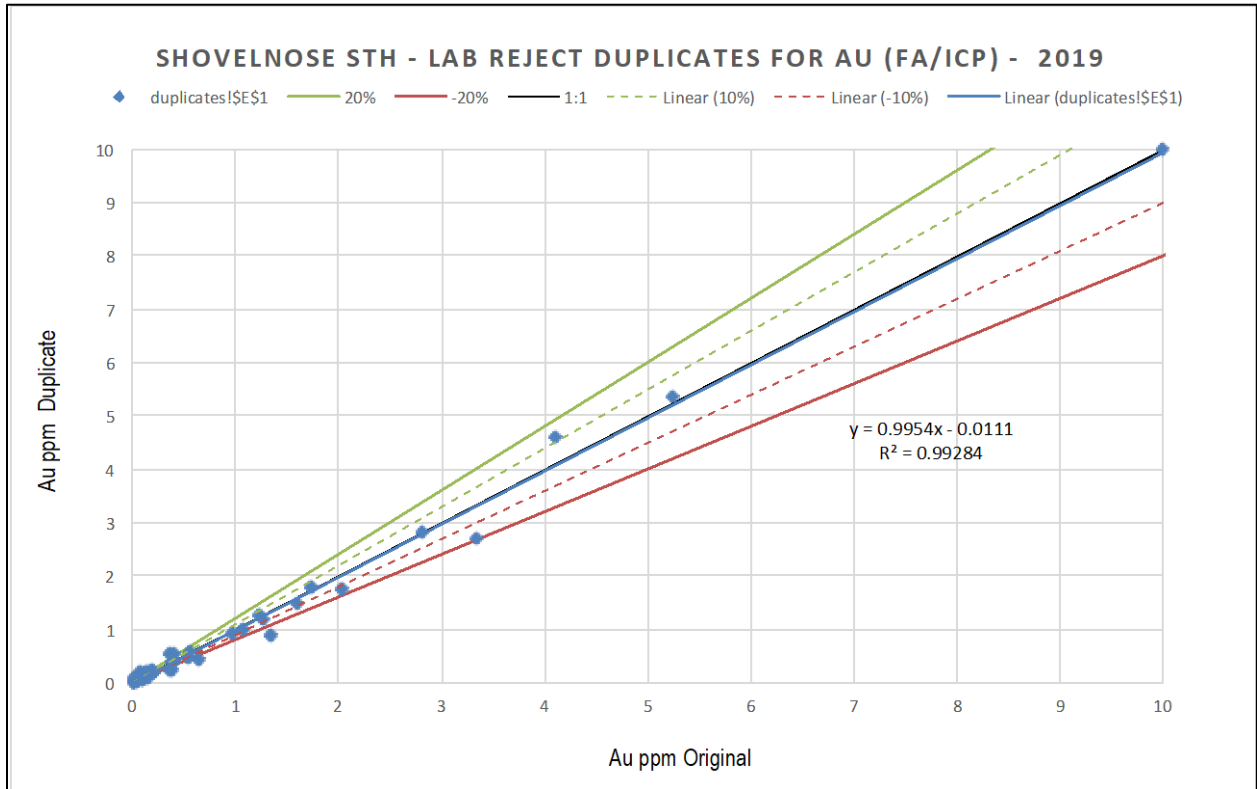
Blank material used at the Project is composed of an unmineralized granitic rock product called “Colorado Canyon” and prepared by the commercial gravel/aggregate outfit “Metro-Reload” in Kamloops B.C. The blanks consist of crushed rock fragments in the 1.0 to 8.0 cm size range and are bagged at Metro-Load by Westhaven staff using poly bags. Since the product is not lab certified, Westhaven conducted in-house auditing on the geochemical compilation of the blank material, using ioGas-Reflex software to confirm that the same granite rock was used throughout the 2019 season.

The blanks are inserted at a frequency of one in 25 samples. All blank data for Au and Ag were graphed. If the assayed value in the certificate was indicated as being less than detection limit, the value was assigned the value of -0.001 for data treatment purposes. An upper tolerance limit of ten times the detection limit was set. There were 509 data points to examine representing a frequency of 5.4%. The vast majority of data plotted at or below the set tolerance limits. A total of 49 (9.6%) blank results for gold fell above the set tolerance limit and 52 (10.2%) for silver. The Authors do not consider contamination to be significant to the integrity of the 2019 drilling data.

#### **11.4.3.3 Performance of Laboratory Duplicates**

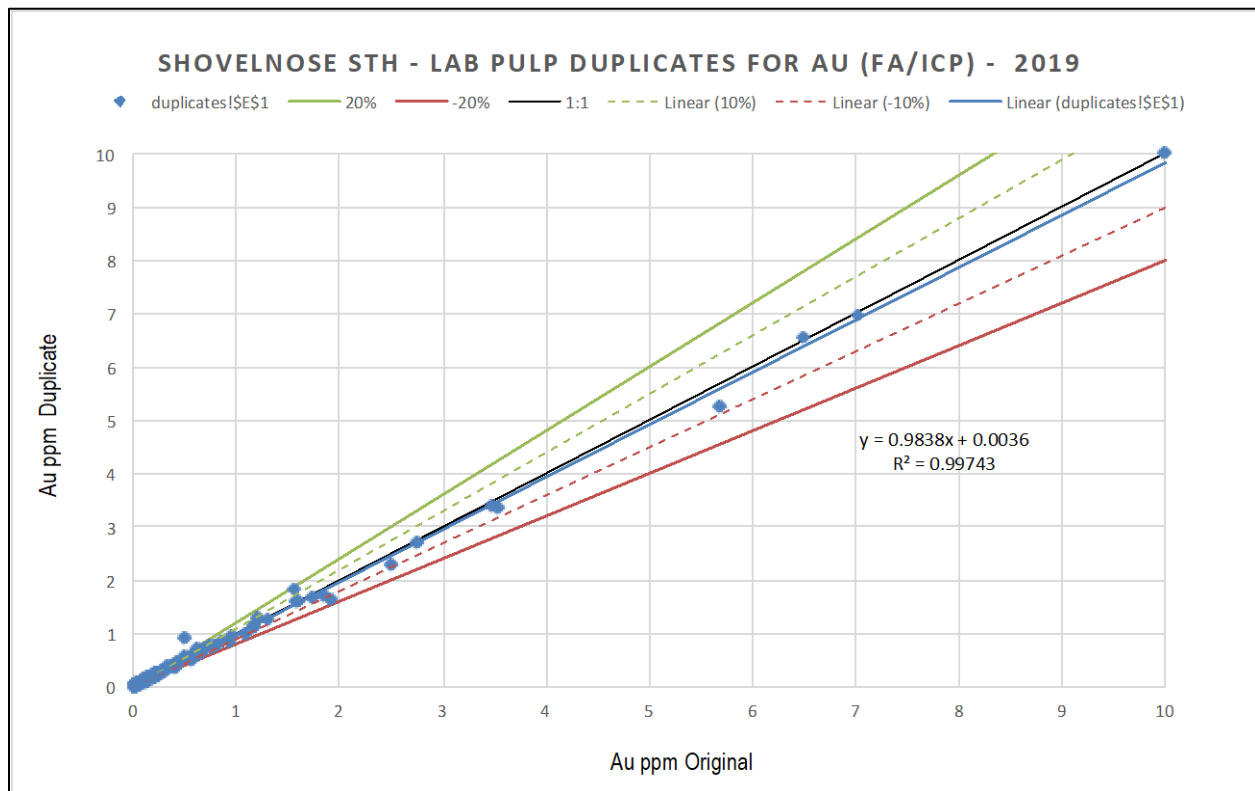
The internal laboratory duplicate data for the FA/ICP analyses for gold were examined for the 2019 drill program (there were too little data for FA/GRAV analyses to allow for meaningful assessment). There were 93 coarse reject and 246 pulp duplicate pairs in the dataset. The data were scatter graphed (Figures 11.8 and 11.9). The  $R^2$  values for the coarse reject duplicate data was estimated to be 0.993 and 0.997 for the pulp data. The  $CoV_{AV}$  were calculated at 18.8% for the coarse rejects and 11.9% for the pulps, both acceptable levels of precision.

**FIGURE 11.8 2019 COARSE REJECT DUPLICATE RESULTS FOR AU**



Source: P&E (2021)

**FIGURE 11.9 2019 PULP DUPLICATE RESULTS FOR AU**



Source: P&E (2021)

### 11.4.4 2020 Drilling

A total of 18,577 drill core samples were sampled at the Property in 2020 and submitted to ALS for analysis; including 836 CRM samples and 1,062 blanks for a total of 1,898 QC samples and an overall insertion rate of 10.3%.

Formal batch-by-batch review of received assay results commenced in late July 2020, after the Company’s relational database had been installed and populated. In early November 2020 the Company’s internal QA/QC policies were developed and approved. The more systematic and timely review process was undertaken on an ‘as received’ immediate basis for approximately half of the 2020 drill core samples (9,184 of 18,577) and focused primarily on CRMs (Westhaven’s and ALS’s) with re-assays requested for failed gold CRMs only.

#### 11.4.4.1 Performance of Certified Reference Materials

In 2020, approximately 25% of the samples were in the South Zone (4,795 samples). This section reviews the samples from the South Zone only. A total of 204 CRMs for gold and 206 for silver were submitted in 2020, at an insertion rate of 4.3%. There were five CRMs used during the program, which were purchased from CDN, including: CDN-GS-P6C, CDN-GS-1Z, CDN-GS-4L, CDN-GS-25 and CDN-GS-30C. All CRMs are certified for and monitor both gold and silver, except for CDN-GS-30C, which is certified for gold only.

The use of the CDN-GS-P6C CRM was discontinued later in the 2020 program, due to inconsistent results, and the mass of CRMs sent for analysis was doubled from 60 g to 120 g to accommodate for any repeat or overlimit analyses required. Criteria for assessing CRM performance is as described in Section 11.4.2.1. A summary of the CRM performance results for the 2020 program is presented in Table 11.3.

<b>TABLE 11.3</b>						
<b>SUMMARY OF CERTIFIED REFERENCE MATERIALS USED IN 2020</b>						
<b>Reference Material</b>	<b>Certified Mean Value (ppm)</b>	<b><math>\pm 1 \sigma</math> (ppm)</b>	<b><math>\pm 2 \sigma</math> (ppm)</b>	<b>ALS Results</b>		
				<b>No. Results</b>	<b>No. Exceeding <math>\pm 3 \sigma</math></b>	<b>% <math>\pm 3 \sigma</math> Failures</b>
<b>Monitoring Gold</b>						
CDN-GS-P6C	0.767	0.039	0.078	52	7	13.5
CDN-GS-1Z	1.155	0.0475	0.095	51	1	2.0
CDN-GS-4L	4.01	0.15	0.30	49	0	0.0
CDN-GS-25	25.6	0.47	0.94	50	1	2.0
CDN-GS-30C	32.14	0.445	0.89	2	0	0.0
<b>Monitoring Silver</b>						
CDN-GS-P6C	66	2.75	5.5	49	7	14.3
CDN-GS-1Z	89.5	2.2	4.4	58	8	13.8
CDN-GS-4L	125.9	3.65	7.3	49	0	0.0
CDN-GS-25	99.5	3.7	7.4	50	0	0.0

*Notes: Reference materials are certified,  $\sigma$  = standard deviation.*

A total of nine (4.4%) data points for gold exceeded  $\pm 3 \sigma$  from the certified mean value and 15 (7.3%) for silver. A number of failures were investigated and found to be misallocated CRMs. Follow-up action with the laboratory was taken for any of the failed CRMs in the 2020 QAQC program.

CRM CDN-GS-P6C, the lowest-grade CRM used in the 2020 program, returned 52 results for gold and 49 for silver. A total of seven (13.5%) results for gold and seven (14.3%) results for silver fall outside of the  $\pm 3 \sigma$  from the certified mean value. This CRM returned the highest number of gold failures for the second year running, potentially revealing inhomogeneity issues. Re-assays were requested for gold failures initially. However, when it was clear that the CRM itself was unreliable, these results were not considered as part of the Company's QC review. A slight high bias was noted in the data for gold results. This CRM has been discontinued and the introduction of a comparable CRM from an alternative manufacturer has been sought for the 2021 program.

The CDN-GS-1Z CRM, returned 51 results for gold and 58 for silver, with one (2.0%) result for gold and eight (13.8%) results for silver falling outside  $\pm 3 \sigma$  from the certified mean value. A slight high bias was noted in the silver data. CRM CDN-GS-4L returned 49 results, with no failures for gold or silver recorded. The high-grade CDN-GS-25 CRM returned 50 results for gold and silver, with one (2.0%) failure for gold and no failures for silver recorded. The highest-grade CRM used

at the Project in 2020, the CDN-GS-30C CRM (certified for gold only), returned two results for gold, with no results falling outside  $\pm 3 \sigma$  from the certified mean value.

The Authors considers the CRM data to demonstrate acceptable accuracy in the Shovelnose South Zone 2020 diamond drilling data.

#### **11.4.4.2 Performance of Blanks**

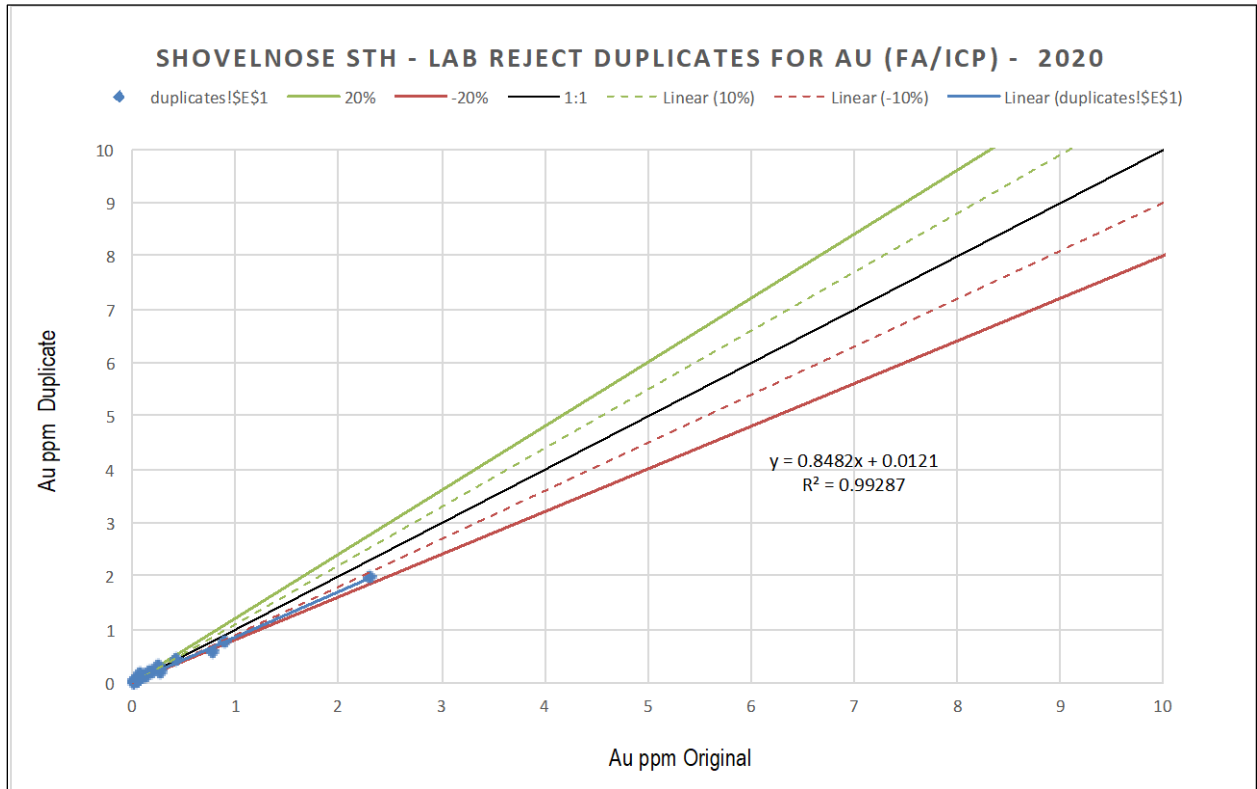
The same procedures and blank material used at the Project in 2019 (as described in section 11.4.3.2) were used in 2020. A total of 228 CRMs was submitted in 2020, at an insertion rate of 5.7%. All data for gold falls below the set tolerance level of 0.01 ppm, with the highest result returning a value of 0.006 ppm. All silver blank results, except for one result returning a value of 0.14 ppm, fall below the set tolerance limit of 0.1 ppm.

The Authors do not consider contamination to be significant to the integrity of the 2020 drilling data.

#### **11.4.4.3 Performance of Laboratory Duplicates**

The ALS internal laboratory duplicate data for the FA/ICP analyses for gold were examined for the 2020 drill program (there were too little data for FA/GRAV analyses to allow for meaningful assessment). There were 38 coarse reject and 104 pulp duplicate pairs in the dataset. The data are scatter graphed (Figures 11.10 and 11.11). The  $R^2$  values for the coarse reject duplicate data were estimated to be 0.993 and for the pulp data 0.995. The  $CoV_{AV}$  were calculated at 17.2% for the coarse rejects and 15.6% for the pulps, both acceptable levels of precision.

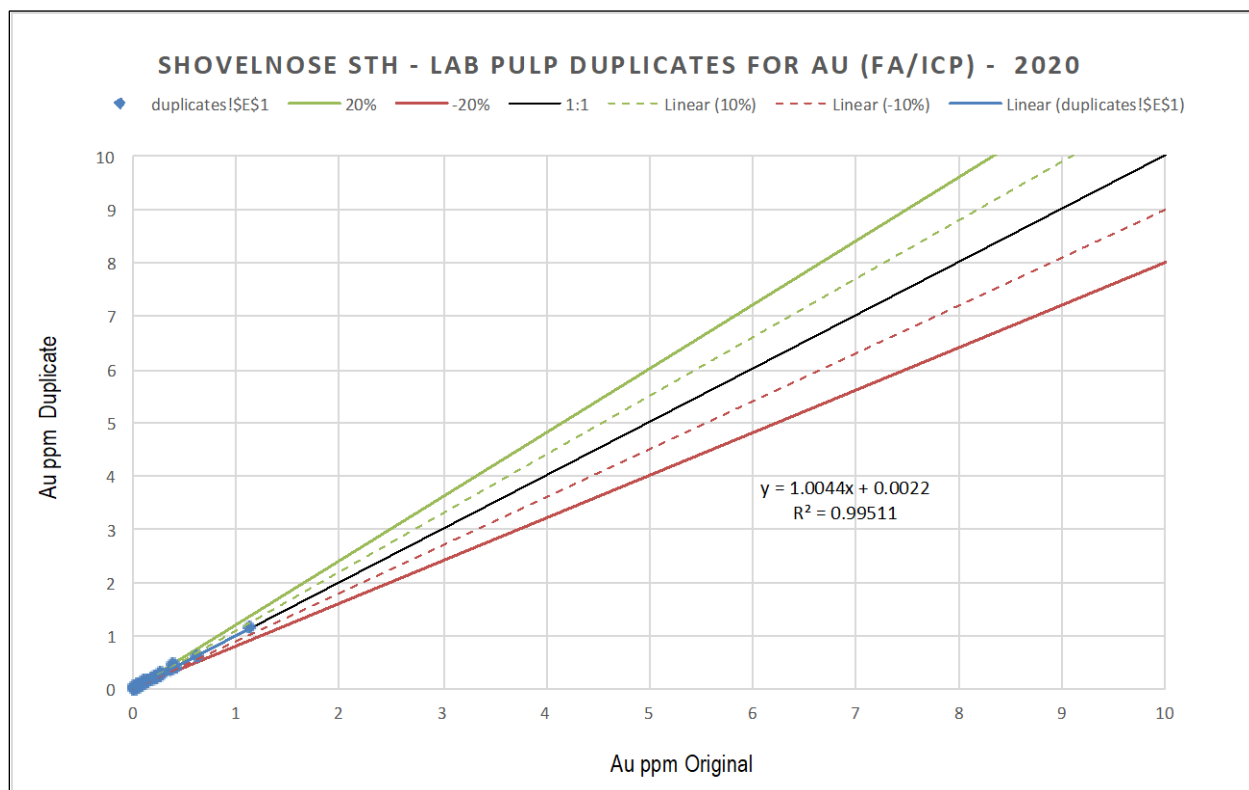
**FIGURE 11.10 2020 COARSE REJECT DUPLICATE RESULTS FOR AU**



Source: P&E (2021)



**FIGURE 11.11 2020 PULP DUPLICATE RESULTS FOR AU**



Source: P&E (2021)

### 11.4.5 2021 Drilling

A total of 17,614 drill core samples were sampled at the Property in 2021 and submitted to ALS for analysis. Approximately half of the samples were in the South Zone (8,955 samples). Of these, 6,695 samples were included in the Mineral Resource Estimate and are reviewed in this Report section. A total of 310 CRMs for gold and 243 for silver were submitted in 2021, representing a 4.6% insertion rate. There were ten CRMs used during the program, which were purchased from CDN and OREAS, including: OREAS 231, OREAS 219, OREAS 252B, OREAS 233, CDN-GS-1Z, OREAS 238, CDN-GS-4L, CDN-ME-1902, OREAS 245 and CDN-GS-30C. All CRMs are certified for and monitor both gold and silver, except for CDN-GS-30C, which is certified for gold only, and the OREAS 238 CRM, which is certified for both gold and silver, however, silver certification is by aqua regia method only. Criteria for assessing CRM performance is as described in Section 11.4.2.1.

A summary of the CRM performance results for the 2021 program is presented in Table 11.4. The OREAS 238 CRM results for silver have been included. However, it should be noted that round robin certification was achieved using aqua regia method and the silver sample results included in Table 11.4 were analyzed by the four acid method.

**TABLE 11.4**  
**SUMMARY OF CERTIFIED REFERENCE MATERIALS USED IN 2021**

Reference Material	Certified Mean Value (ppm)	$\pm 1 \sigma$ (ppm)	$\pm 2 \sigma$ (ppm)	ALS Results		
				No. Results	No. Exceeding $\pm 3 \sigma$	% $\pm 3 \sigma$ Failures
<b>Monitoring Gold</b>						
OREAS 231	0.542	0.015	0.03	12	0	0.0
OREAS 219	0.76	0.024	0.05	26	0	0.0
OREAS 252B	0.837	0.028	0.056	36	0	0.0
OREAS 233	1.05	0.029	0.06	14	0	0.0
CDN-GS-1Z	1.155	0.0475	0.095	66	5	7.6
OREAS 238	3.03	0.08	0.16	11	0	0.0
CDN-GS-4L	4.01	0.15	0.3	55	2	3.6
CDN-ME-1902	5.38	0.21	0.42	12	0	0.0
OREAS 245	25.73	0.546	1.092	11	1	9.1
CDN-GS-30C	32.14	0.445	0.89	67	1	1.5
<b>Monitoring Silver</b>						
OREAS 231	0.177	0.024	0.048	12	0	0.0
OREAS 219	0.203	0.014	0.028	26	0	0.0
OREAS 252B	0.264	0.034	0.068	36	0	0.0
OREAS 233	0.295	0.016	0.032	14	0	0.0
CDN-GS-1Z	89.5	2.2	4.4	66	7	10.6
OREAS 238*	0.220	0.015	0.045	11	0	0.0
CDN-GS-4L	125.9	3.65	7.3	55	0	0.0
CDN-ME-1902	356	6.33	19	12	0	0.0
OREAS 245	1.44	0.071	0.142	11	0	0.0

*Notes: Reference materials are certified,  $\sigma$  = standard deviation.*

*\* CRM OREAS 238 is certified for Ag by aqua regia method only / 11 results listed are by 4-acid method.*

#### **11.4.5.1 Performance of Certified Reference Materials**

A total of nine (2.9%) data points for gold exceeded  $\pm 3 \sigma$  from the certified mean value and seven (2.9%) for silver. All failed returned CRM results for gold were investigated and the following protocol was taken:

- A rerun of  $\pm 5$  samples surrounding the failed CRM is requested for the batch;
- The rerun batch is imported when received, and the batch is evaluated according to QC protocol to confirm the rerun CRM falls within three standard deviations; and

- The ten samples surrounding the failed CRM are superseded with the rerun gold results.

Throughout the 2021 drill program, the Company reviewed silver CRM results. However, no reruns were requested for a failure of over three standard deviations. The charts show results with corrected re-run batch values and not the original failed samples.

No failures were recorded for either element for the OREAS 231, OREAS 219, OREAS 252B, OREAS 233, OREAS 238, CDN-ME-1902. The CDN-GS-1Z CRM, returned 66 results, with five (7.6%) results for gold and seven (10.6%) results for silver falling outside of the  $\pm 3 \sigma$  from the certified mean value. A slight high bias was noted in the data for silver results. CRM CDN-GS-4L returned 55 results, with two (3.6%) results for gold and no failures recorded for silver. The OREAS 245 CRM returned 11 results, with one (9.1%) result for gold falling outside of the  $\pm 3 \sigma$  from the certified mean value and no failures recorded for silver. A slight low bias for gold was noted. The CDN-GS-30C CRM returned 67 results for gold, with one (1.5%) result for gold falling outside of the  $\pm 3 \sigma$  from the certified mean value.

The Authors consider the CRM data to demonstrate acceptable accuracy in the South Zone 2021 diamond drilling data.

#### **11.4.5.2 Performance of Blanks**

The same procedures and blank material used at the Project in 2019 (as described in section 11.4.3.2) were used in 2021. There were 399 data points to examine representing a frequency of 6.0%.

The vast majority of data plots at or below set tolerance limits for both elements. The highest-grade blank result returned for gold is 0.191 g/t Au, with a total of ten blanks (2.5%) returning  $>0.01$  g/t Au. All elevated gold blank results directly follow high-grade core samples and demonstrate that the blank and double blank insertion procedure continue to prevent carry-over of gold, most probably occurring during the crushing and (or) pulverizing stage.

There were 25 blank results for silver returning values greater than ten times the lower detection limit, with the highest result returning 0.7 ppm silver. The majority of elevated gold blanks correlate with elevated blank silver results and the great majority of elevated blank silver results directly follow high-grade drill core or CRM results. Two results that do not directly follow elevated results, returned results just over the 0.1 ppm silver tolerance limit, at 0.16 ppm and 0.19 ppm.

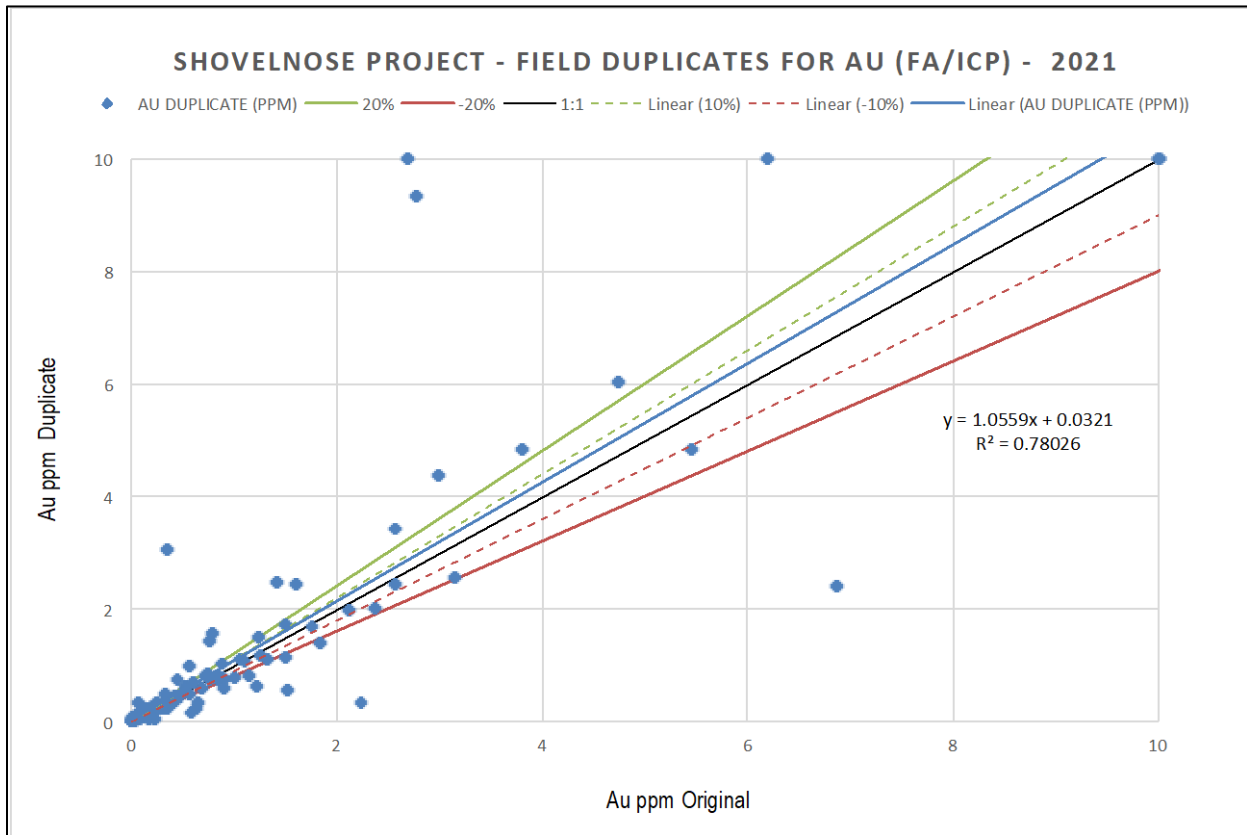
The Authors do not consider contamination to be significant to the integrity of the 2021 drilling data.

#### **11.4.5.3 Performance of Field Duplicates**

The field duplicate data for gold and silver were examined by the Authors. There were 249 pairs for gold in the dataset and 337 for silver. Data were scatter graphed (Figures 11.12 and 11.13) and demonstrate observable variance. The  $R^2$  values for the field duplicate data were estimated to be 0.780 for gold and 0.977 for silver. The average coefficient of variation was calculated at 20.8%

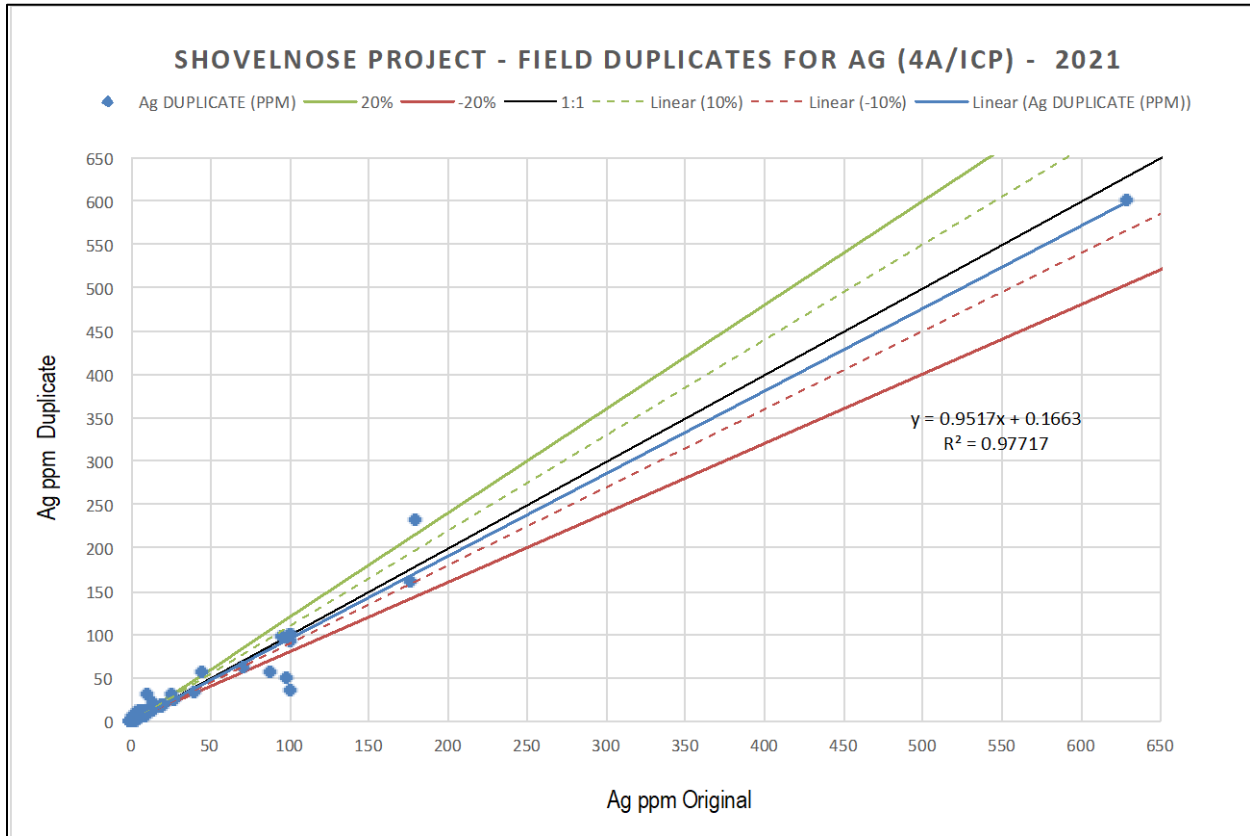
for the gold field duplicates and 19.2% for the silver, both acceptable levels of precision at the field duplicate level.

**FIGURE 11.12 2021 FIELD DUPLICATE RESULTS FOR AU**



Source: P&E (2021)

**FIGURE 11.13 2021 FIELD DUPLICATE RESULTS FOR AG**

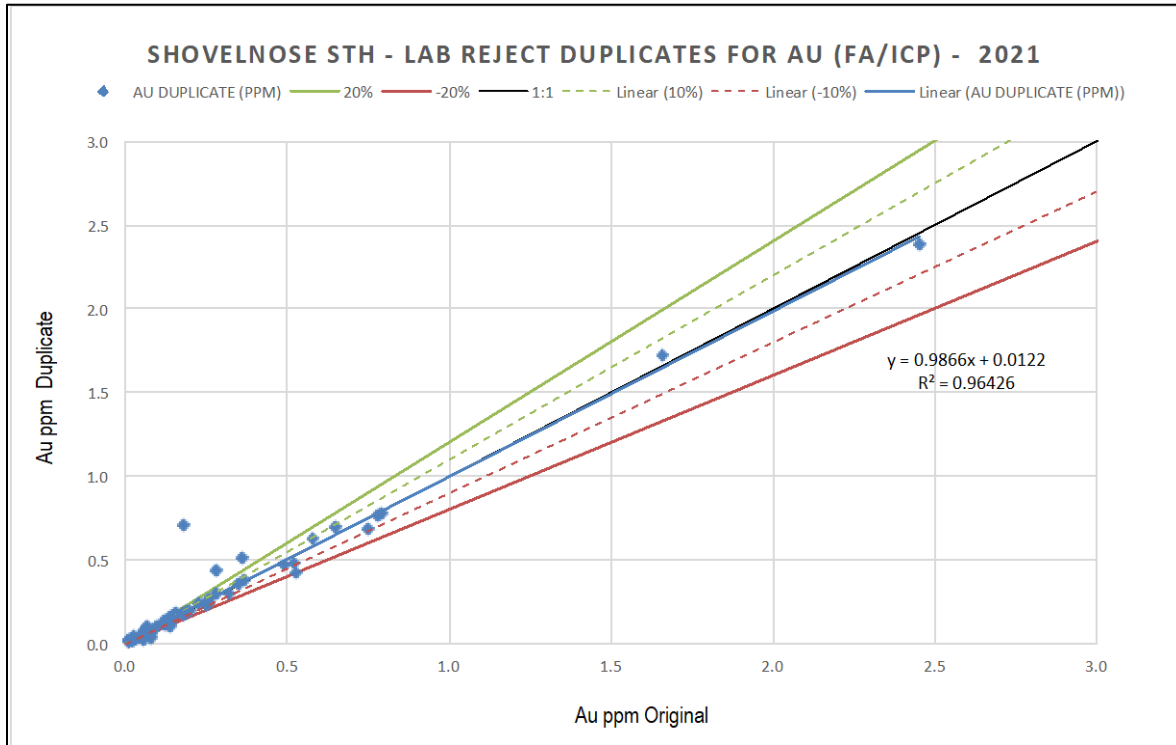


Source: P&E (2021)

#### 11.4.5.4 Performance of Laboratory Duplicates

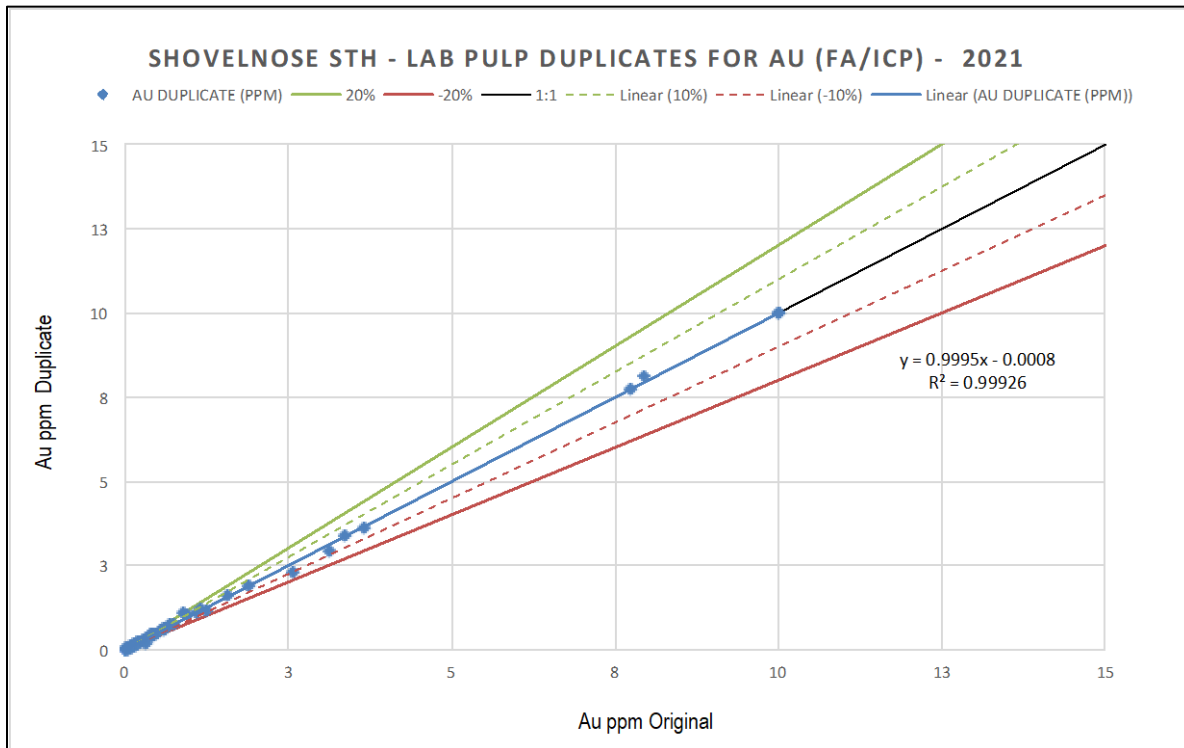
The internal laboratory duplicate data for the FA/ICP analyses for gold were examined for the 2021 drill program (there were too little data for FA/GRAV analyses to allow for meaningful assessment). There were 76 coarse reject and 162 pulp duplicate pairs in the dataset. The data were scatter graphed (Figures 11.14 and 11.15). The  $R^2$  values for the coarse reject duplicate data were estimated to be 0.964 and 0.999 for the pulp data. The  $CoV_{AV}$  were calculated at 18.3% for the coarse rejects and 11.0% for the pulps, both acceptable levels of precision.

**FIGURE 11.14 2021 COARSE REJECT DUPLICATE RESULTS FOR AU**



Source: P&E (2021)

**FIGURE 11.15 2021 PULP DUPLICATE RESULTS FOR AU**



Source: P&E (2021)

#### **11.4.6 2021 South Zone Historical Field Duplicate Program**

Westhaven carried out an historical field duplicate program on select archived drill core from the 2018 to 2020 drilling campaigns at the South Zone. Field duplicate sampling had only been initiated in the 2021 drill season and, as a result, historical field duplicate sampling was carried out to provide data for the earlier-drilled holes in which only coarse reject and pulp duplicate check data was available.

Historical sampling of archived drill core was undertaken in the M1 lot. Sample intervals were still clearly marked and care was taken to realign shifted drill core based on available grease pencil/marker reference ticks. It is possible that some drill core fragments may have crossed over into adjacent sample intervals due to handling and material may have settled into the wood grain of the drill core box or been washed out of the box by rain or snow melt.

Sampling of the entire remaining half-split drill core was undertaken. Drill core was found to be in various states of preservation depending on rock type, clay content, age and amount of weathering; from intact to very disaggregated with weathered material stuck to the base of the drill core boxes. As a result, drill core trays were carefully scraped to include as much of the sample as possible by using various hand tools. No water was applied during this process.

New sample numbers were assigned and QC samples, including CRMs (n=10) and blanks (n=19) were inserted into the historical field duplicate sample stream, bringing the total number of samples from 182 drill core samples to 211. Samples were analyzed for gold by FA/ICPES, with samples returning results greater than 10 g/t Au, reanalyzed by FAOG/GRAV. The Authors reviewed all QC sample results for the historical duplicate sampling program and considers blank and CRM performance to be acceptable.

The Authors reviewed the historical field duplicate data and a summary of the assessment is given in Table 11.5. Precision levels for gold at the field duplicate level, are generally estimated at around a  $CoV_{AV}$  of 34% to 35%. When the historical field duplicate data are compared to the internal lab duplicate data, precision levels improve towards the pulp level and are at acceptable levels for this style of gold mineralization.

**TABLE 11.5**  
**SUMMARY OF HISTORICAL FIELD DUPLICATE RESULTS**

Table 11.5 Summary of Historical Field Duplicate Results at Shovelnose							
YEAR	ANALYTICAL METHOD		NO. RESULTS	CV <sub>AV</sub> DUPLICATES			COMMENTS
	ORIGINAL	REPEAT		HISTORICAL FIELD	LAB REJECT	LAB PULP	
2018	AR/ICPXS	FA/ICPES	90	35.2	32.1	15.2	Field duplicate precision for AR/ICPXS vs FA/ICPES is similar to FA/ICPES vs FA/ICPES in 2019 to 2021, however there is little improvement in precision from field duplicate to coarse reject duplicate level.
	FA/AAS	FA/ICPES	57	--	--	23.9*	A subset of the 2018 AR/ICPXS data, comprising duplicate pulp samples that were reassayed in 2018 by FA/AAS. Repeatability at the pulp level is poor between the two methods.
2019	FA/ICPES	FA/ICPES	67	34.2	18.8	11.9	Improvement noted in precision as grain size decreases.
2020	FA/ICPES	FA/ICPES	11	35.2	17.2	15.6	Improvement noted in precision as grain size decreases.
2021	FA/ICPES	FA/ICPES	249	20.8	18.3	11.0	Improved field duplicate precision in real-time duplicated data. Improvement noted in precision as grain size decreases.

Source: P&E (2021)



#### **11.4.7 2021 South Zone Umpire Sampling Program**

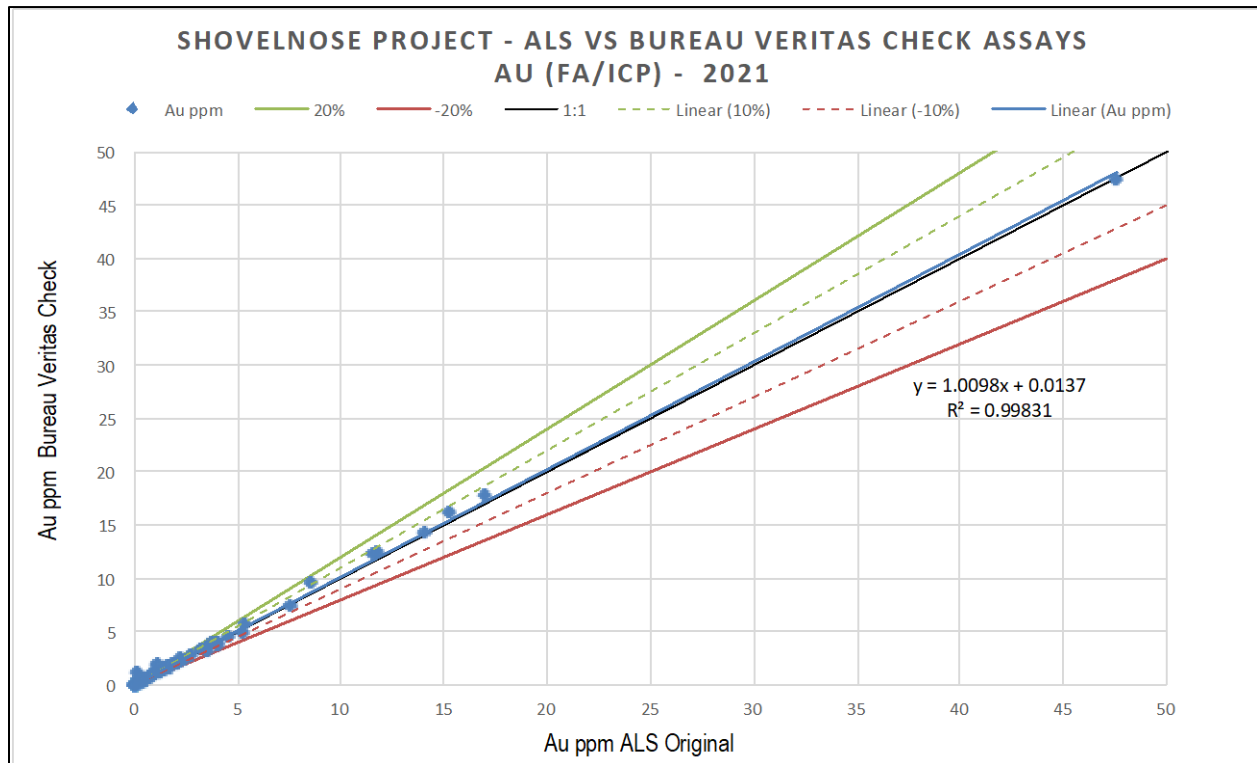
Westhaven carried out an umpire-sampling program to confirm the integrity of the analytical results from the Company's 2018, 2019 and 2020 drilling campaigns at the South Zone. Select pulverized pulp samples were submitted for check assaying at a secondary laboratory (Umpire Laboratory) to check original analyses performed at a primary laboratory. All original samples were analyzed at ALS in Vancouver and the check assays were conducted at a Bureau Veritas lab in Vancouver, and included pulp samples from drill holes SN18-03, SN18-09, SN19-05, SN19-20, SN19-37 and SN20-60.

A total of 303 check samples were submitted to Bureau Veritas during the 2021 diamond drilling campaign, representing 1.5% of the total batch of Mineral Resource samples sent to the primary laboratory. Both the original samples and check assays were analyzed by fire assay with an ICP or gravimetric finish.

A range of QC samples were also submitted with the pulp samples selected for check assaying for the umpire sampling program, including CRMs (n=16) and blanks (n=30). The Authors reviewed all QC sample results for the umpire sampling program and considers blank and CRM performance to be acceptable.

The Authors reviewed the umpire assay results and comparisons were made between the primary lab results and the umpire lab results with the aid of scatter plots (Figure 11.16). There is good correlation between the two sets of data, with data falling on or close to the 1:1 line, an  $R^2$  value of 0.998 and  $CoV_{AV}$  precision estimated to be 17.3%. A very slight high bias is revealed in the Bureau Veritas assay results. The Authors do not consider any biases exhibited in the data to be of material impact to the current Mineral Resource Estimate and considers the data to be acceptable for use in the current Mineral Resource Estimate.

**FIGURE 11.16 2021 ALS VERSUS BUREAU VERITAS UMPIRE SAMPLING RESULTS FOR AU**



Source: P&E (2021)

#### 11.4.8 March 2021 to July 2023 Drilling

A total of 28,886 drill core samples from 207 drill holes were sampled at the Property in the period from March 2021 to July 2023 and submitted to ALS for analysis. A total of 1,313 CRMs, 1,620 blanks and 1,216 field duplicates were submitted from March 2021 to July 2023, representing an insertion rate of 4.5% and 5.6%, respectively. There were 14 different CRMs used during the program, which were purchased from CDN and OREAS, including: CDN-GS-1Z, CDN-GS-4L, CDN-GS-30C, CDN-ME-1811, CDN-ME-1902, OREAS-219, OREAS-231, OREAS-233, OREAS-238, OREAS-238b, OREAS-245, OREAS-252B, OREAS-601c and OREAS-609b. All CRMs are certified for and monitor both gold and silver, except for CDN-GS-30C, OREAS 219 and OREAS 238, which are certified for gold only. Criteria for assessing CRM performance is as described in Section 11.4.2.1.

A summary of the CRM performance results for the March 2021 to July 2023 program is presented in Table 11.6. The table expresses results from corrected re-run batches and not those of original failed batches.

**TABLE 11.6**  
**REFERENCE MATERIALS USED AT SHOVELNOSE FROM MAR 2021 TO JUL 2023**

Reference Material	Certified Mean Value (ppm)	±1 $\sigma$ (ppm)	±2 $\sigma$ (ppm)	ALS Results		
				No. Results	No. Exceeding ±3 $\sigma$	% ±3 $\sigma$ Failures
<b>Monitoring Gold</b>						
OREAS-231	0.521	0.015	0.030	148	0	0.0
OREAS-219	0.760	0.024	0.048	63	0	0.0
OREAS-252B	0.837	0.028	0.056	50	0	0.0
OREAS-601c	0.996	0.048	0.096	75	0	0.0
OREAS-233	1.05	0.029	0.058	109	0	0.0
CDN-GS-1Z	1.155	0.0475	0.095	116	0	0.0
CDN-ME-1811	2.05	0.12	0.24	61	0	0.0
OREAS 238	3.03	0.08	0.16	133	0	0.0
OREAS-238b	3.08	0.085	0.170	9	0	0.0
CDN-GS-4L	4.01	0.15	0.3	23	0	0.0
OREAS-609b	4.97	0.260	0.520	44	0	0.0
CDN-ME-1902	5.38	0.21	0.42	154	0	0.0
OREAS 245	25.73	0.546	1.092	151	0	0.0
CDN-GS-30C	32.14	0.445	0.89	177	3	1.7
<b>Monitoring Silver</b>						
OREAS-231	0.177	0.024	0.048	63	0	0.0
OREAS-238b	0.245	0.034	0.068	9	0	0.0
OREAS-252B	0.264	0.034	0.068	50	0	0.0
OREAS-233	0.295	0.016	0.032	148	0	0.0
OREAS 245	1.44	0.071	0.142	151	0	0.0
OREAS-609b	24.6	1.03	2.06	44	0	0.0
OREAS-601c	50.3	2.31	4.62	75	0	0.0
CDN-GS-1Z	89.5	2.2	4.4	116	0	0.0
CDN-ME-1811	90	2	4	61	1	1.6
CDN-GS-4L	125.9	3.65	7.3	23	0	0.0
CDN-ME-1902	356	6.33	19	154	0	0.0

*Notes: Reference materials are certified,  $\sigma$  = standard deviation.*

*Source: P&E (2023)*

#### 11.4.8.1 Performance of Certified Reference Materials

A total of three out of 1,313 data points (0.2%) for gold exceeded ±3  $\sigma$  from the certified mean value and seven out of 940 data points (0.7%) for silver. All CRM failures for gold and silver were investigated and the following protocol was taken:

- A rerun of  $\pm 10$  samples surrounding the failed CRM is requested for the batch;
- The rerun batch is imported when received, and the batch is evaluated according to QC protocol to confirm the rerun CRM falls within three standard deviations; and
- The 20 samples surrounding the failed CRM are superseded with the rerun gold results.

The Authors consider the CRM data to demonstrate acceptable accuracy in the Project March 2021 to July 2023 diamond drilling data.

#### **11.4.8.2 Performance of Blanks**

The same procedures and blank material used at the Project in 2019 (as described in section 11.4.3.2) were used from March 2021 to 2023. There were 1,620 data points to examine representing a frequency of 5.6%.

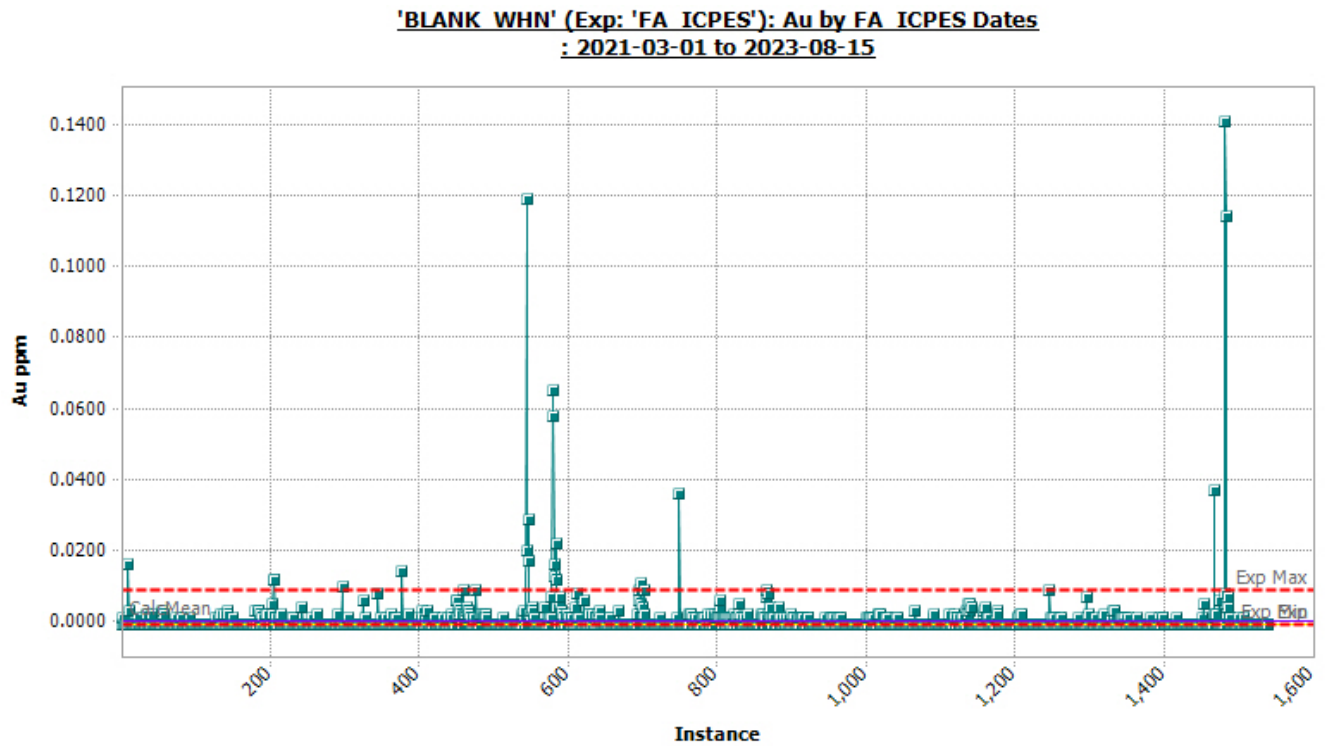
The vast majority of data plots at or below set tolerance limits for both elements. The highest-grade blank result returned for gold is 0.175 g/t Au, with a total of five blanks (0.3%) returning  $>0.01$  g/t Au (see Figure 11.17). All elevated gold blank results directly follow high-grade core samples and demonstrate that the blank and double blank insertion procedure continue to prevent carry-over of gold, most probably occurring during the crushing and (or) pulverizing stage.

Figure 11.18 outlines the blank results for silver and shows 42 results (2.6%) greater than ten times the lower detection limit, with the highest result returning 1.32 ppm silver. The majority of elevated silver blanks correspond to elevated blank gold results and directly follow high-grade drill core results.

All blank failures for gold and silver were investigated and first checked if the blank directly follows high-grade drill core results. If not and it is determined that the blank has failed, the lab is asked to rerun the failed blank  $\pm 10$  samples on either side of the blank. Once the rerun results are received, they are loaded into the database and supersede the original values.

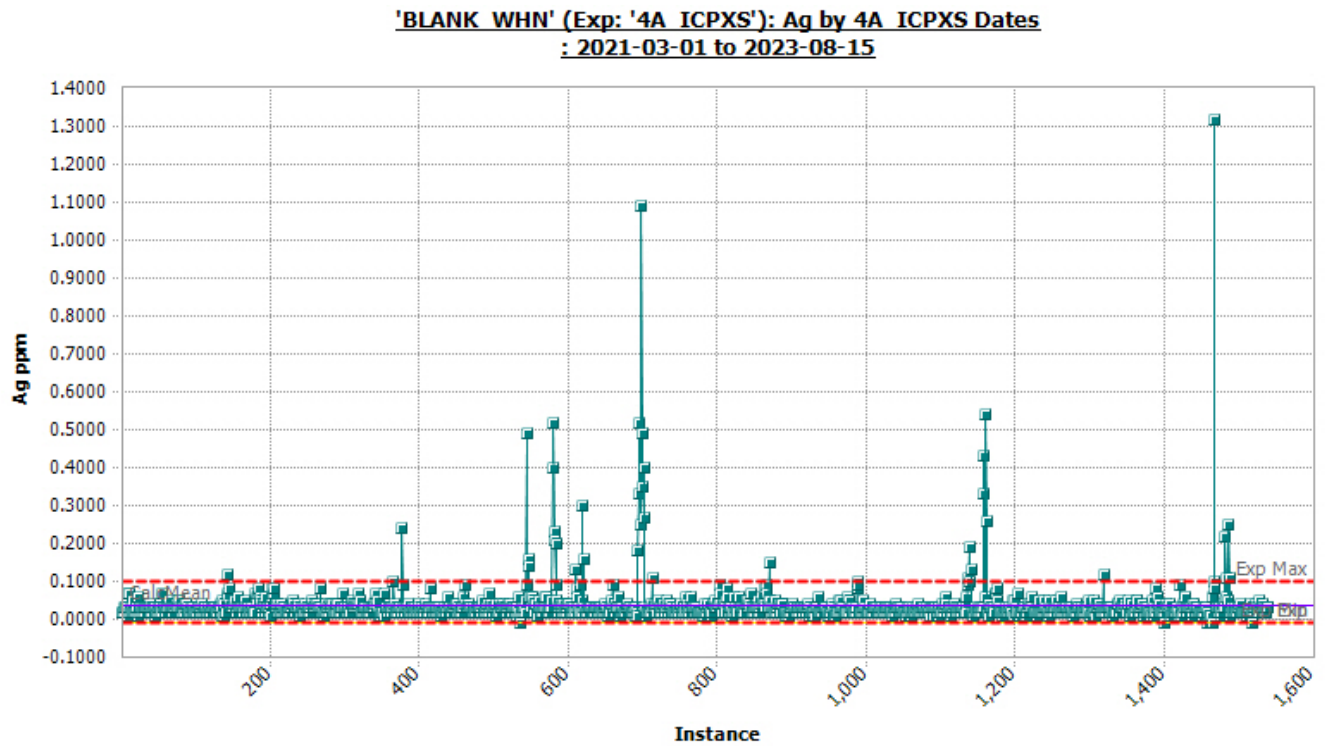
The Authors do not consider contamination to be significant to the integrity of the March 2021 to July 2023 drilling data.

**FIGURE 11.17 MARCH 2021-JULY 2023 PERFORMANCE OF BLANKS FOR AU**



Source: P&E (2023)

**FIGURE 11.18 MARCH 2021-JULY 2023 PERFORMANCE OF BLANKS FOR AG**

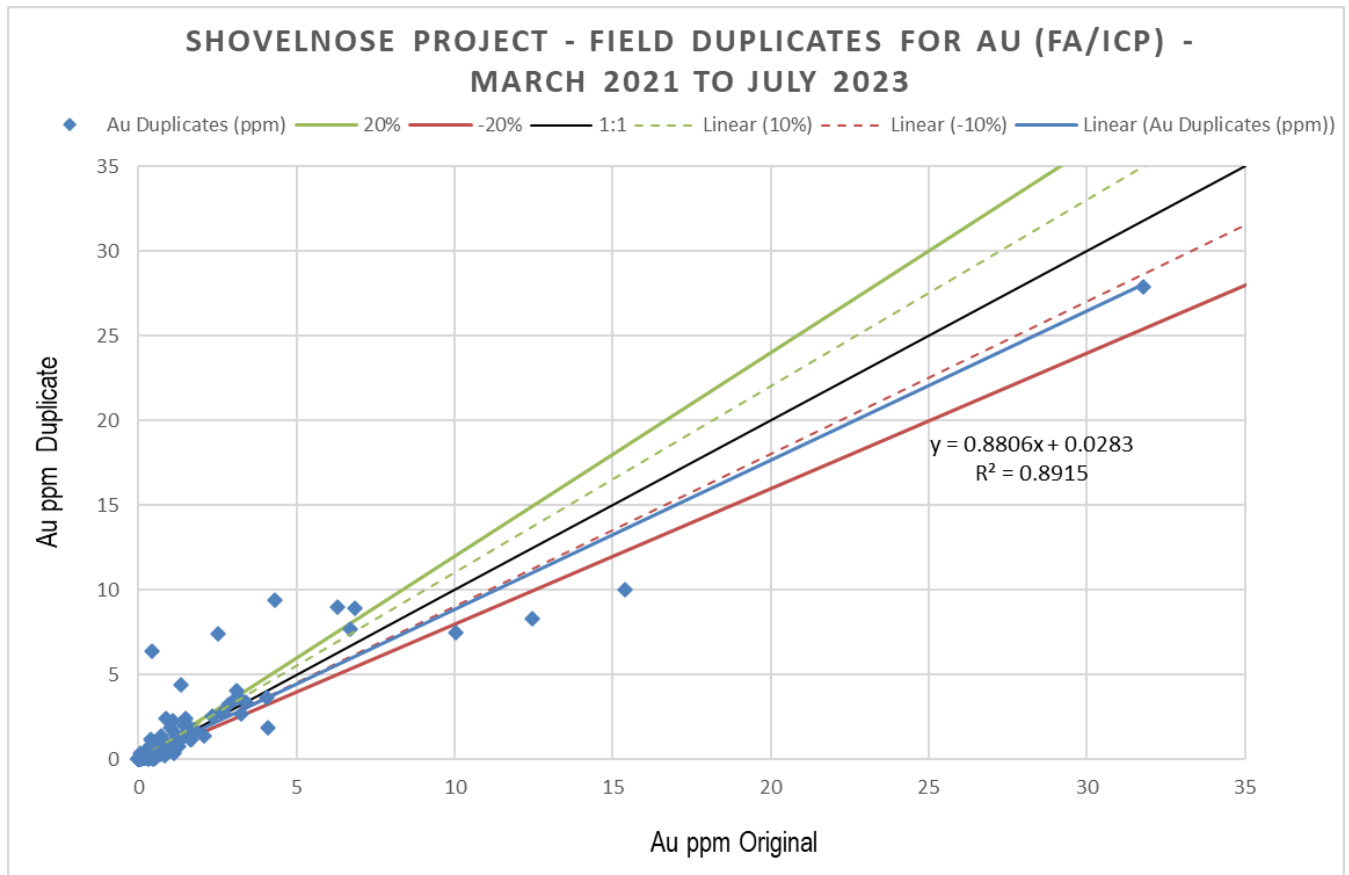


Source: P&E (2023)

### 11.4.8.3 Performance of Field Duplicates

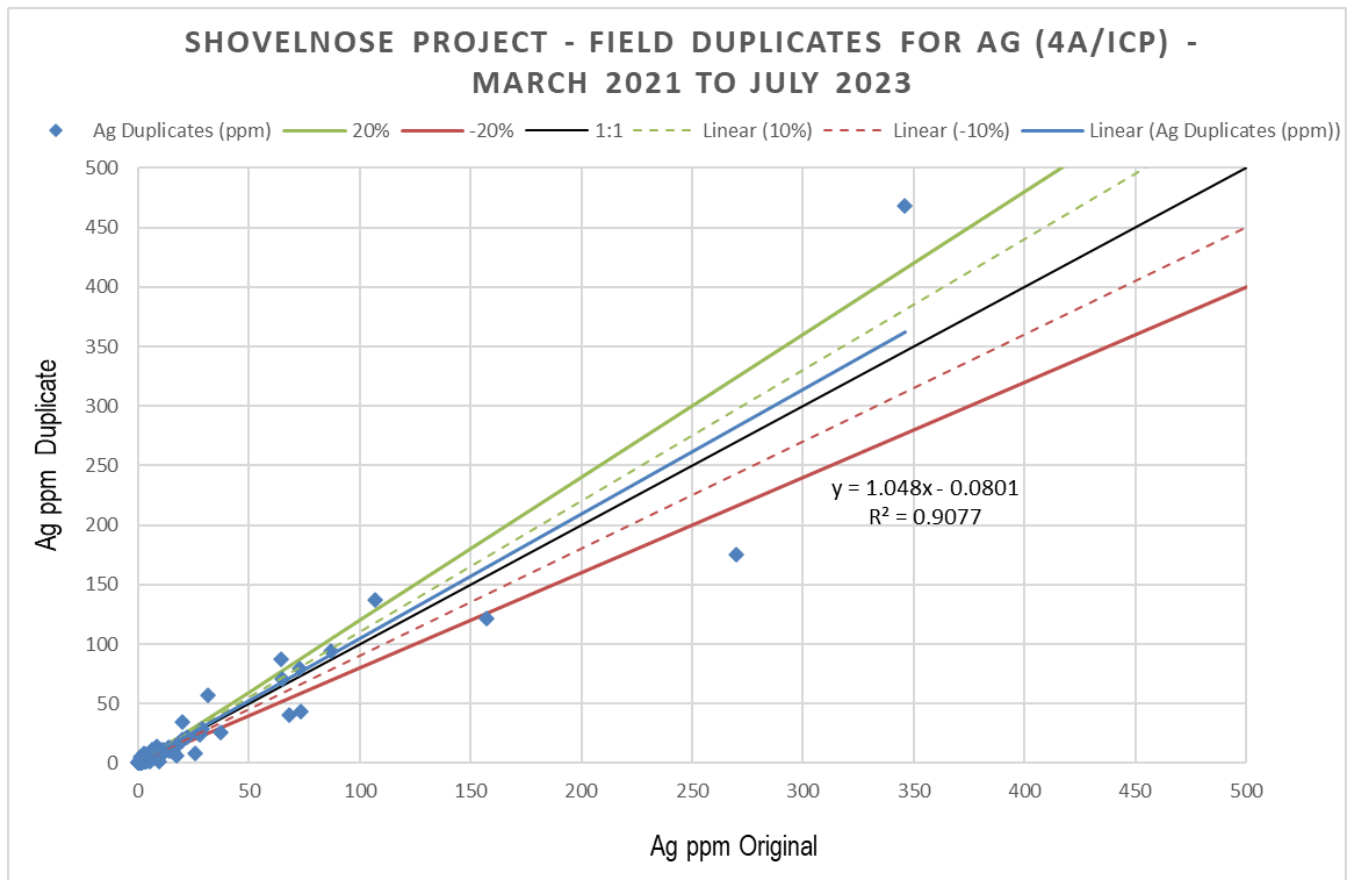
The field duplicate data for gold and silver were examined by the Authors. There were 1,216 pairs in the dataset for gold and silver. Data were scatter graphed (Figures 11.19 and 11.20) and demonstrate observable variance. The  $R^2$  values for the field duplicate data were estimated to be 0.892 for gold and 0.908 for silver. The average coefficient of variation was calculated at 29.3% for the gold field duplicates and 20.6% for the silver, both acceptable levels of precision at the field duplicate level.

**FIGURE 11.19 MARCH 2021-JULY 2023 FIELD DUPLICATE RESULTS FOR AU**



Source: P&E (2023)

**FIGURE 11.20 MARCH 2021-JULY 2023 FIELD DUPLICATE RESULTS FOR AG**



Source: P&E (2023)

## 11.5 CONCLUSION

Westhaven have implemented and monitored a thorough QA/QC program since mid-2018 for the drilling undertaken at the Shovelnose Gold Property and have also undertaken various resampling and check assaying programs to confirm sampling and analyses undertaken during previous drilling campaigns. Examination of QA/QC results for all recent sampling indicates no material issues with accuracy, contamination or precision in the data and the check assaying program confirms the tenor of the original data. QC protocol is followed closely and Company personnel monitor incoming QC sample results in a timely manner and follow up material failures with the lab promptly.

The Authors recommend Westhaven implement the following protocol for future drilling at the Property:

- Submit a minimum of 5% of future samples analyzed at the primary laboratory to a reputable third-party laboratory, ensuring that the appropriate QC samples are inserted into the sample stream to be sent for check analyses, to aid in identifying potential issues with a particular lab; and

It is the opinion of the Authors that sample preparation, security and analytical procedures for the Shovelnose South Zone were adequate for the purposes of the Mineral Resource Estimate reported in this Report.



## **12.0 DATA VERIFICATION**

### **12.1 DRILL HOLE DATABASE**

#### **12.1.1 2015 to 2021 Drill Hole Assay Data**

The Authors conducted verification of the Shovelnose drill hole assay database for gold and silver, by comparison of the database entries with assay certificates, downloaded directly by the Authors from the ALS Webtrieve™ on-line download retrieval system. Assay certificates were downloaded in comma-separated values (csv) format.

Assay data ranging from 2015 through 2021 for the South Zone were verified by the Authors. Approximately 98% (25,427 out of 25,832 samples) of the entire database were verified for gold and silver and no errors were encountered.

#### **12.1.2 2021 to July 2023 Drill Hole Assay Data**

The Authors conducted additional verification of the Shovelnose drill hole assay database for gold and silver, by comparison of the database entries with assay certificates, downloaded directly by the Authors from the ALS Webtrieve™ on-line download retrieval system. Assay certificates were downloaded in comma-separated values (csv) format.

Assay data ranging from 2021 through July 2023 were verified for the Project by the Authors. Approximately 92% (26,695 out of 28,886 samples) of the updated database were verified for gold and silver and a few minor discrepancies of no material impact were encountered.

#### **12.1.3 Drill Hole Data Verification**

The Authors also validated the supplied Mineral Resource database by checking for inconsistencies in analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, survey and missing intervals and coordinate fields. A few minor errors were identified and corrected in the database where necessary.

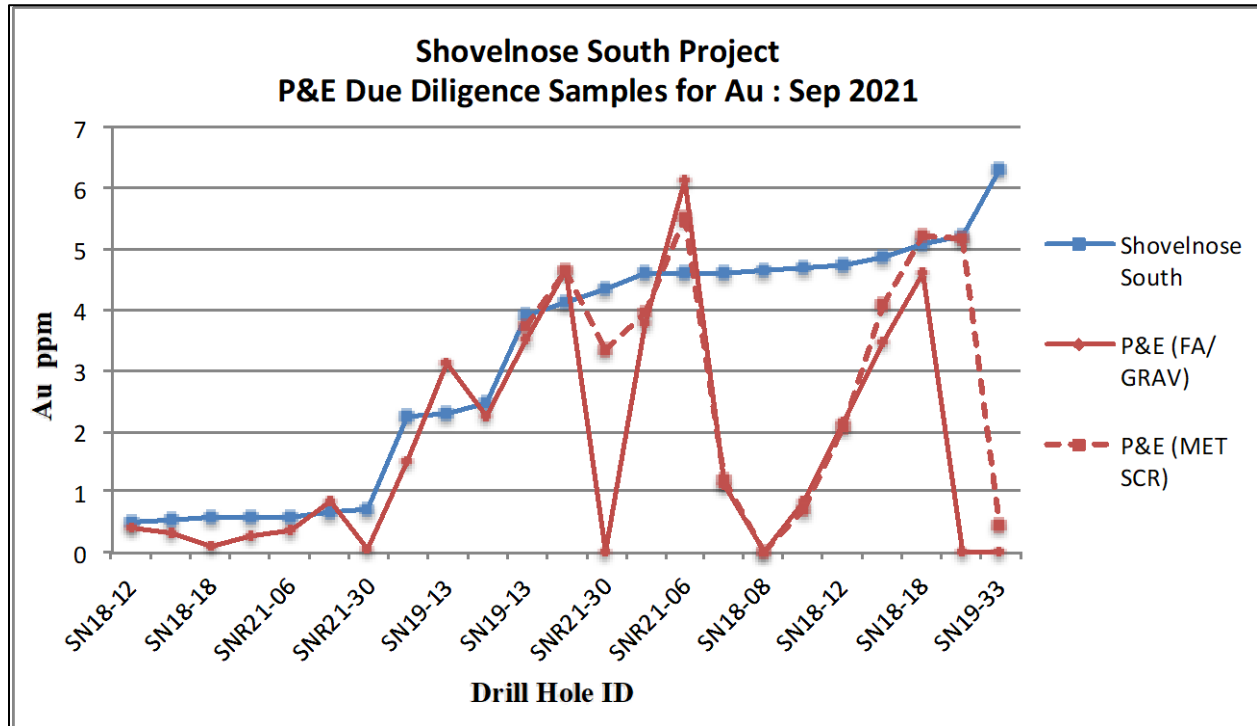
## **12.2 P&E SITE VISIT AND INDEPENDENT SAMPLING**

The Shovelnose Gold Property was visited by Mr. Brian Ray, P.Geo., of P&E, on September 27, 2021, for the purpose of completing a site visit and conducting independent sampling.

Mr. Ray collected 23 samples from 12 diamond drill holes from the South Zone. Samples were selected from holes drilled in 2018, 2019 and 2021. Samples over a range of grades were selected from the stored drill core. Samples were collected by taking a quarter drill core, with the other quarter drill core remaining in the drill core box. Individual samples were placed in plastic bags with a uniquely numbered tag, after which all samples were collectively placed in a larger bag and couriered by Mr. Ray to Actlabs in Kamloops, BC for analysis.

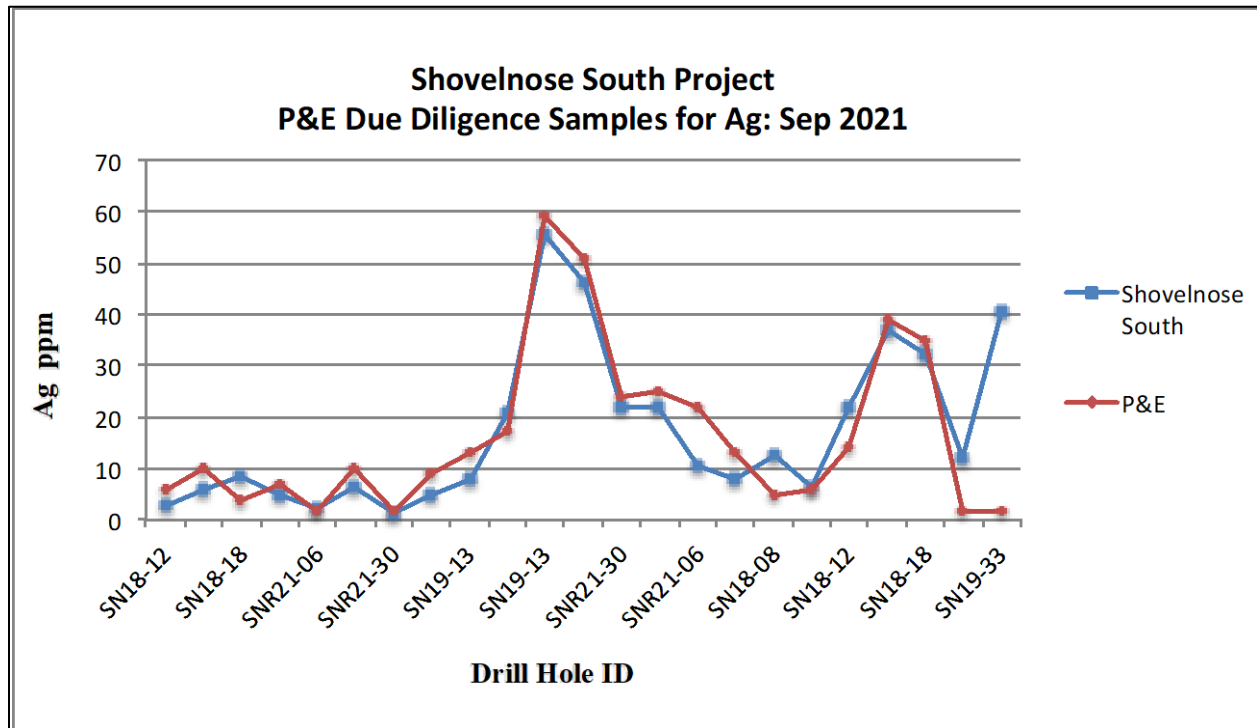
Samples at Actlabs were analyzed for gold and silver by fire assay with gravimetric finish. Gold samples returning grades >3 g/t Au were further analyzed by metallic screen method. Bulk density determinations were also undertaken on all of the samples. The Actlabs' Quality System is accredited to international quality standards through ISO/IEC 17025:2017 and ISO 9001:2015. The accreditation program includes ongoing audits, which verify the QA system and all applicable registered test methods. Actlabs is also accredited by Health Canada. Results of the Property site visit verification samples for gold and silver are presented in Figures 12.1 and 12.2.

**FIGURE 12.1 RESULTS OF SEPTEMBER 2021 AU VERIFICATION SAMPLING BY P&E**



Source: P&E (2021)

**FIGURE 12.2 RESULTS OF SEPTEMBER 2021 AG VERIFICATION SAMPLING BY P&E**



Source: P&E (2021)

### 12.3 ADEQUACY OF DATA

The Authors consider that there is good correlation between the silver assay values in Westhavens’s database and the independent verification samples collected by the Authors and analyzed at Actlabs. However, the quarter drill core site visit samples with original gold grades >4 g/t Au show poor reproducibility. A similar lack of reproducibility is also evident in Westhaven’s field duplicate samples taken in 2021, and in Westhaven’s historical drill core sampling program as summarized in Table 11.5. In the review of the 2019 to 2021 laboratory duplicate data for the coarse reject and pulp duplicates, the Authors note there was consistent improvement in precision levels from field duplicate to pulp duplicate level, with pulp duplicates exhibiting acceptable precision.

It is the opinion of the Authors that the data are of good quality and appropriate for use in the current Mineral Resource Estimate.

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

### 13.1 TEST PROGRAMS

A preliminary test program was conducted in early 2021 on six Shovelnose drill core samples at the ALS laboratory in Kamloops, British Columbia. The preliminary program's objective included:

- Determine the samples' chemical content by conventional methods, fire assay and ICP;
- Assess the potential for gravity concentration of gold;
- Evaluate the potential for the production of a concentrate that could be marketed or subject to further processing; and
- Assess the potential extraction of gold and silver using conventional cyanide leaching technology.

In addition, leach residue would be tested by selective acid leaching to assess the mineralogical association of residual gold.

A follow up program at ALS in 2021 on the same samples investigated:

- Bond ball mill work index;
- The effect of a finer primary grind in improving gold and silver reporting to a flotation concentrate;
- The effect of a finer primary grind in cyanide leach extraction; and
- The efficacy of a flowsheet combining the production of a rougher concentrate and the leaching of flotation tails.

A mineralogical test program had earlier been completed on eight samples by Panterra Geoservices in 2019. Scanning Electron Microscopy ("SEM") identified "electrum as the only gold-bearing phase". The electrum was observed to be intimately intergrown with sulphides and sulpho-salts.

### 13.2 TEST SAMPLES

Six samples weighing a total 97 kg were received at ALS in December 2020, crushed to minus 6 mesh and assayed; the results of the six samples are shown in Table 13.1. ALS conducted a screened gold content investigation and concluded that "nugget" (coarse) gold was not present. The gold content of the samples ranged from 2 to 32 g/t, exceeding the combined Indicated and Inferred Mineral Resource gold grade of 1.68 g/t (2.33 g/t Au Indicated alone). Silver ranged from 12 to 136 g/t in the samples, exceeding the combined Indicated and Inferred Mineral Resource silver grade of 7.95 g/t (11.6 g/t Ag Indicated alone).

Organic carbon (TOC) was measured to be very low (<0.05%), and sulphide sulphur content ranged from 0.28% to 0.67%. The very low organic carbon content indicated a very low potential of “preg-robbing” of silver or gold in cyanide leaching.

The base metal content was measured to be low and of no economic interest. The concentration of elements of potential environmental concern in tailings and effluents, specifically As and Se, were also determined to be low.

<b>Sample ID</b>	<b>VnZn1-01</b>	<b>VnZn1-15</b>	<b>VnZn1-21</b>	<b>VnZn1-2138</b>	<b>VnZn2-1933</b>	<b>VnZn3-1556</b>
Wt. kg	14.5	18.0	15.1	16.0	17.4	15.8
Au g/t	31.9	2.32	5.16	7.25	6.47	4.00
Ag g/t	136	21	50	64	38	12
TOC%	0.04	0.03	0.03	0.03	0.04	0.03
Sulphide S%	0.28	0.67	0.59	0.39	0.40	0.39
As ppm	32	86	64	48	64	22
Cd ppm	0.34	0.10	0.67	1.00	0.08	0.08
Co ppm	1.2	2.0	4.4	1.3	1.5	1.7
Cu ppm	85	20	93	52	18	7.2
Fe%	0.56	0.88	1.83	0.77	0.75	1.1
Hg ppm	0.16	0.09	0.06	0.10	0.32	0.08
Mn ppm	280	200	610	380	180	300
Ni ppm	4.3	3.6	5.4	3.4	2.6	2.9
Pb ppm	22	11	30	45	8.6	10
Se ppm	27	5	12	13	10	3
Zn ppm	22	46	24	21	40	86

### 13.3 METALLURGICAL TESTING AND RESULTS

#### 13.3.1 Gravity Gold Recovery

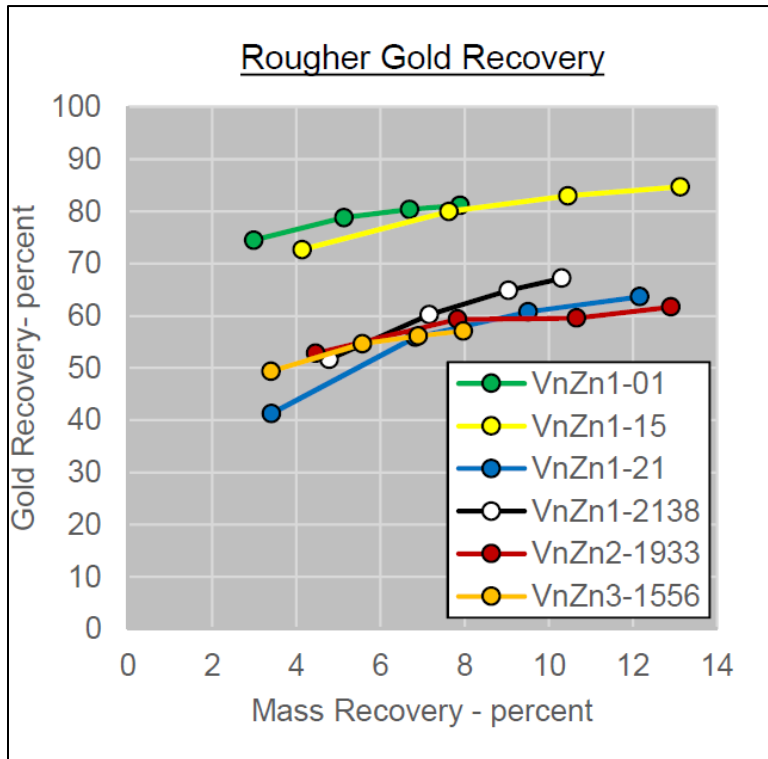
100 g samples of each composite, ground to a nominal size of 150 µm, were passed through a Nelson Concentrator. The Nelson concentrate was pan upgraded. Only 2% to 8% of the gold and between 1% and 3% of the silver reported to a 0.3% weight pan concentrate. These values are judged to be below levels that would merit the incorporation of a gravity circuit in a process flowsheet.

#### 13.3.2 Rougher Flotation

Single rougher flotation tests were performed on relatively coarsely ground (K<sub>80</sub> 150 µm) samples of each of the six composites in the preliminary ALS test program listed as KM6326. Gold and

silver recoveries to the concentrates were 57% to 85% and 53% to 75%, respectively. The best gold results were achieved with the highest and lowest grade samples, VnZn1-01 and VnZn1-15, as shown in Figure 13.1. For these two samples, 80% of the gold was recovered in 8% of the mass; for the other four samples the gold recovery was 60% in 8% of the mass.

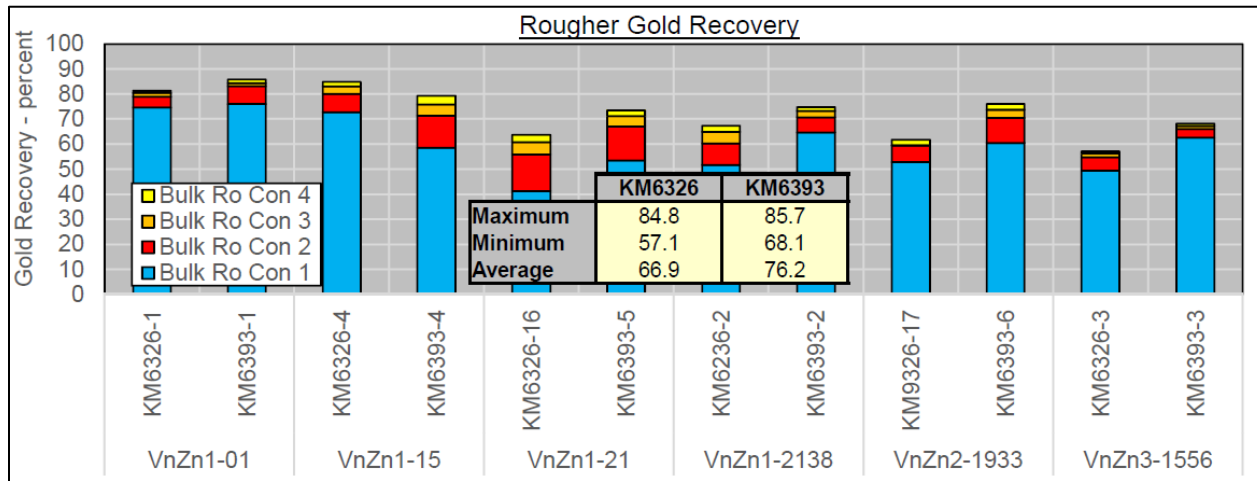
**FIGURE 13.1 ROUGHER FLOTATION RECOVERY OF GOLD**



Source: ALS (February 23, 2021)

The rougher flotation tests were repeated, in test program KM6393 at a finer grind (~75 µm) and the results are summarized in Figure 13.2. The gold recoveries were somewhat better, averaging 76% at a similar mass pull.

**FIGURE 13.2 ROUGHER GOLD RECOVERY IN A FINER GRIND**



Source: ALS (April 12, 2021)

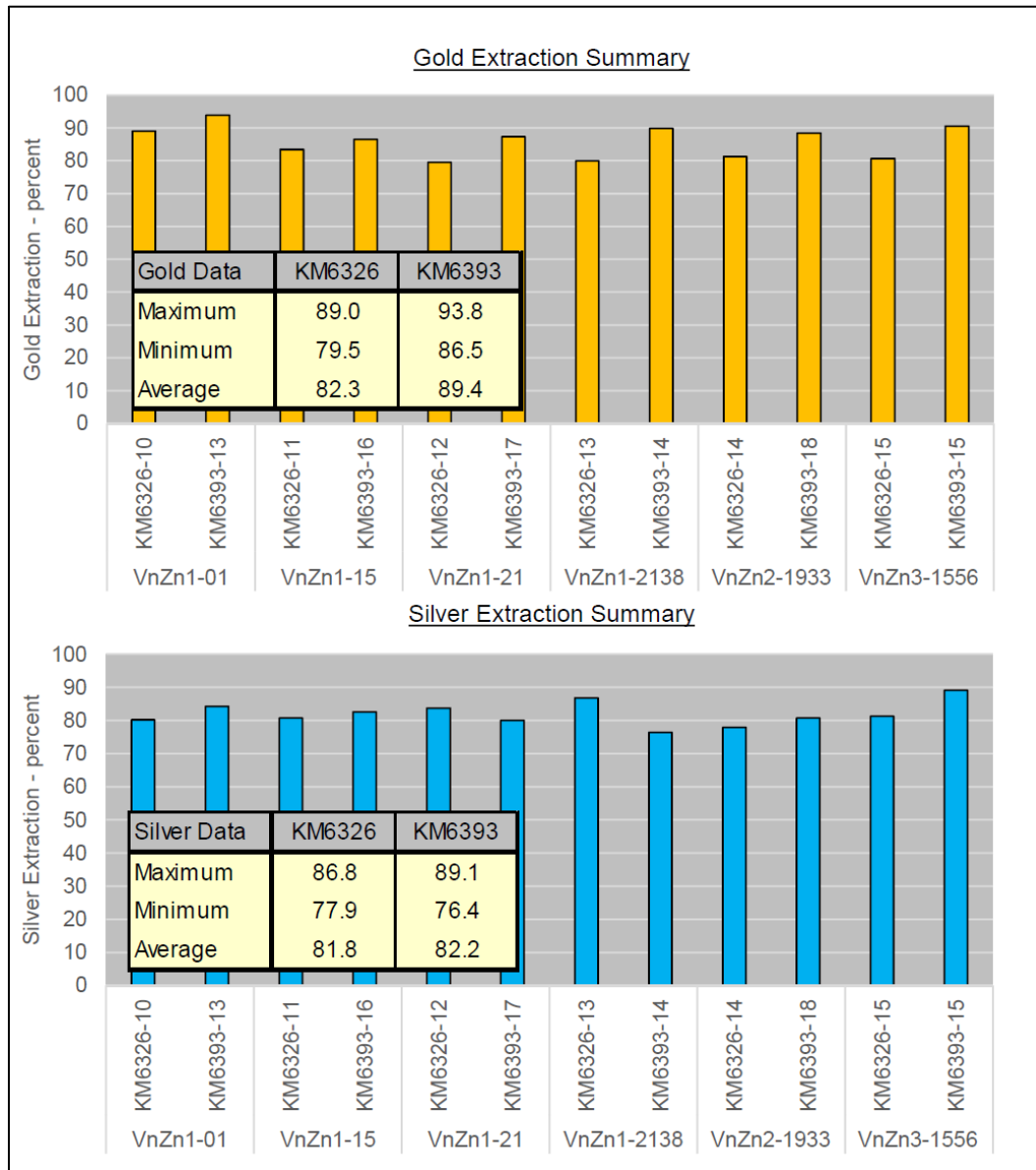
### 13.3.3 Whole Mineralized Material Cyanidation

Bottle roll cyanide leach tests were conducted on all six samples under two conditions:

1. 150 µm grind, 1 g/L NaCN, O<sub>2</sub>, 72 hours; and
1. 75 µm grind, 1 g/L NaCN, O<sub>2</sub>, 48 hours.

For the first tests, between 80% and 89% of the gold, and 78% to 87% of the silver were extracted. For the second set of tests, the gold extraction increased to 87% to 94% (average 89.4%) and silver approximately the same (Figure 13.3). Cyanide consumption increased in the second set of tests to range between 1.5 kg/t and 2.1 kg/t, a moderate rate.

**FIGURE 13.3 WHOLE MINERALIZED MATERIAL CYANIDE LEACH TEST RESULTS**



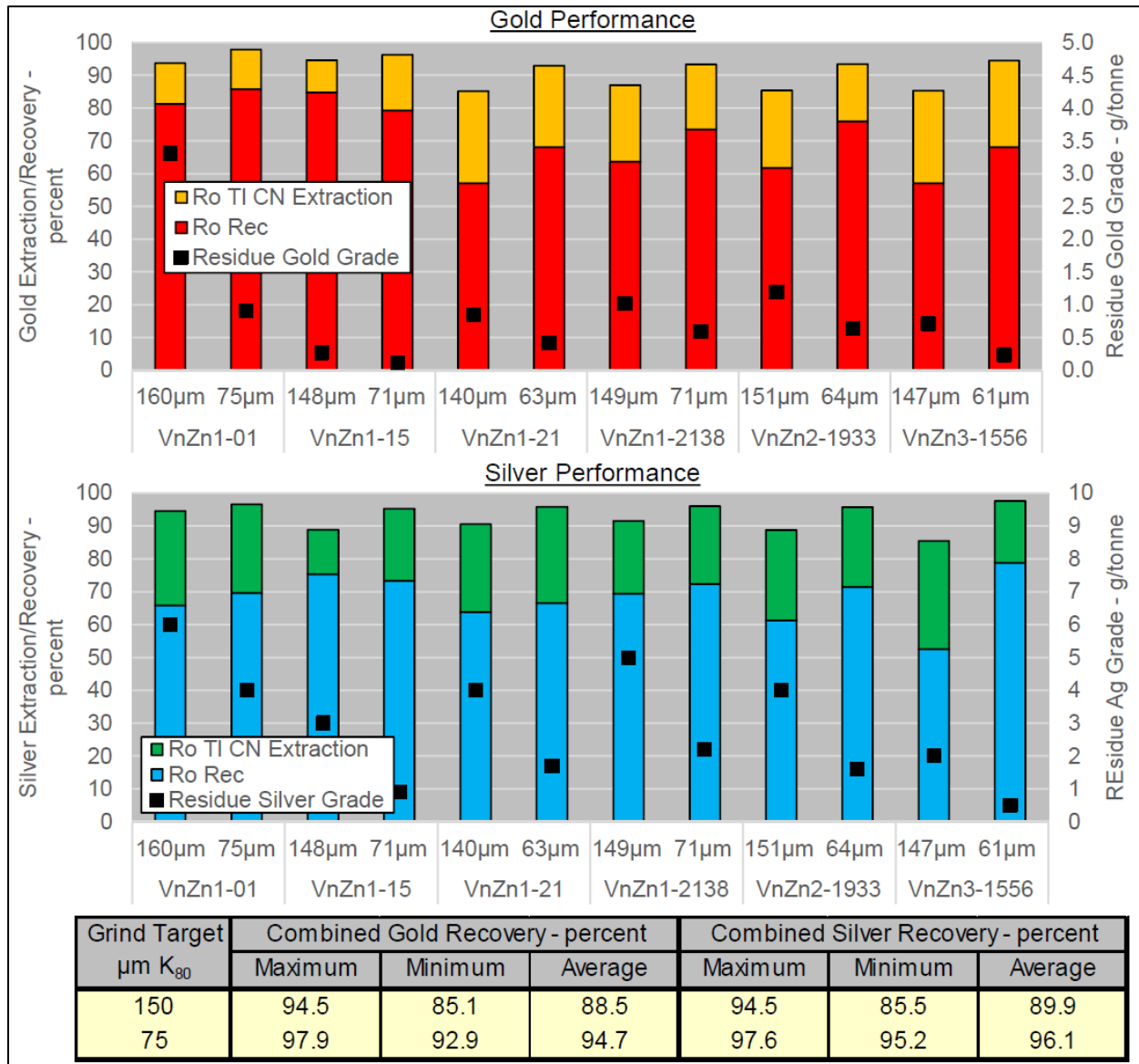
Source: ALS (April 12, 2021)

**13.3.4 Flotation Combined with Tailings Cyanidation**

The combination of the production of a flotation concentrate and leaching of flotation tailings was investigated for all six samples. The recovery results for both gold and silver are shown graphically and in the summary table in Figure 13.4. The sum of average recoveries for gold and silver were high at 94.7% and 96.1%, respectively, for the finer ground samples.



**FIGURE 13.4 RECOVERY OF GOLD AND SILVER - ROUGHER FLOTATION + FLOAT TAILS CYANIDATION**



Source: ALS (April 12, 2021)

### 13.4 SUPPORTING TESTS AND RESULTS

A Bond ball mill work index test was completed on a composite from remaining fractions of four of the six samples. The BWi index was calculated to be 20 kWh/t, a relatively high value.

Diagnostic leach tests were performed on bottle roll leach residues to provide an estimate of the remaining gold deportment. These tests involved very fine grinding and the dissolution of exposed gold by aqua regia. The test results indicated that about half of the gold in the leach residues was locked within sulphide particles. Following an intense grind to a P<sub>80</sub> of 6 µm to 7 µm, between 73% and 97% of the remaining gold was extracted.

## 13.5 SUMMARY AND RECOMMENDATIONS

Rougher flotation at a moderately fine grind resulted in an average gold recovery of 76%. A finer grind may increase this recovery, however, at a significant cost.

Cyanide leaching of “whole mineralized material” samples resulted in an average gold extraction of 82% to 89%.

A high level of gold and silver recovery was indicated by ALS by combining the recovery by rougher flotation and the extraction by cyanide leaching of float tailings. However, this combination may only represent the economics of this strategy following the confirmation of the production of a saleable Au-Ag-sulphide concentrate.

Specific leach testing indicated that a significant proportion of the “tough to extract” gold is physically tied up in the sulphide minerals, however, is not “refractory”. This should be confirmed by specific mineralogical examinations.

The Authors recommend the following investigations and metallurgical testing be conducted on composites that approximately represent the Mineral Resource grade and lithological variations:

- A brief mineralogical study is needed to confirm that gold is present as electrum and closely associated with sulphides and sulpho-salts as determined by Panterra in 2019; and
- If a significant proportion of the gold/electrum is confirmed to be finely associated with sulphides:
  - Optimize “whole mineralized material” grinding and cyanide leach conditions,
  - Conduct flotation tests and optimize procedures to produce a lean Au-Ag-sulphide concentrate,
  - Optimization of grinding of the flotation concentrate as well as cyanide leaching parameters to maximize recovery of gold and silver.

The anticipated metallurgical recovery for the combination of producing, regrinding and intense leaching of a flotation concentrate plus leaching of flotation tails should exceed 90% for gold, with slightly less for silver.

## 14.0 MINERAL RESOURCE ESTIMATES

### 14.1 INTRODUCTION

The purpose of this Report section is to update the Mineral Resource Estimate for underground mining purposes at an appropriate higher AuEq cut-off grade and incorporate 17 additional drill holes completed since the previous Initial Mineral Resource Estimate on Westhaven's Shovelnose South Project in British Columbia.

The Mineral Resource Estimate presented herein is reported in accordance with the Canadian Securities Administrators' National Instrument 43-101 and was estimated in conformity with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") "Estimation of Mineral Resource and Mineral Reserves Best Practice Guidelines" (2019) and reported using the definitions set out in the 2014 CIM Definition Standards on Mineral Resources and Mineral Reserves. Mineral Resources that are not converted to Mineral Reserves do not have demonstrated economic viability. Confidence in the estimate of Inferred Mineral Resource is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Mineral Resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent Mineral Resource Estimates.

This Mineral Resource Estimate was prepared by Yungang Wu, P.Geo., Antoine Yassa, P.Geo. and Eugene Puritch, P.Eng., FEC, CET of P&E, all independent Qualified Persons in terms of NI 43-101. The effective date of this Mineral Resource Estimate is July 18, 2023.

### 14.2 PREVIOUS RESOURCE ESTIMATE

The previous public Initial Mineral Resource Estimate for the Shovelnose South Project was carried out by the Authors with effective date of January 1, 2022. The Mineral Resource Estimate with a pit constrained cut-off grade of 0.35 g/t AuEq is presented in Table 14.1. This previous Initial Mineral Resource Estimate is superseded by the Updated Mineral Resource Estimate reported herein.

<b>TABLE 14.1</b>							
<b>PIT CONSTRAINED INITIAL MINERAL RESOURCE ESTIMATE</b>							
<b>@ 0.35 g/t AUEQ CUT-OFF, EFFECTIVE DATE JANUARY 1, 2022</b>							
<b>Classification</b>	<b>Tonnes (kt)</b>	<b>Au (g/t)</b>	<b>Au (koz)</b>	<b>Ag (g/t)</b>	<b>Ag (koz)</b>	<b>AuEq (g/t)</b>	<b>AuEq (koz)</b>
Indicated	10,592	2.32	791	11.43	3,894	2.47	841
Inferred	9,177	0.89	263	3.47	1,023	0.94	277

### 14.3 DATABASE

All drilling and assay data were provided by Westhaven in the form of Excel data files. The GEOVIA GEMS™ V6.8.4 database compiled by the Authors for this Mineral Resource Estimate consisted of 162 surface drill holes, totalling 61,726 m, of which 17 drill holes (SNR21-41 to 57), totalling 5,235 m, were added to the previous database. A total of 83 drill holes (32,089 m) intersected the Mineral Resource wireframes. A drill hole plan is shown in Appendix A.

The basic raw assay statistics of the database are presented in Table 14.2.

<b>Variable</b>	<b>Au</b>	<b>Ag</b>	<b>Sample Length</b>
Number of Samples	27,377	28,179	28,179
Minimum Value*	0.00	0.01	0.10
Maximum Value*	614.00	2,070.00	5.07
Mean*	0.42	2.32	1.86
Median*	0.04	0.43	2.00
Geometric Mean	0.02	0.42	1.65
Variance	38.41	439.89	0.72
Standard Deviation	6.20	20.97	0.85
Coefficient of Variation	14.66	9.03	0.46
Skewness	69.66	47.88	0.18
Kurtosis	6,137.12	3,765.08	1.58

*Note: \* Au and Ag units are g/t; length units are metres.*

All drill hole survey and assay values are expressed in metric units, with grid coordinates reported using the NAD 83, Zone 10 UTM system.

### 14.4 DATA VERIFICATION

Verification of the assay database for the drilling was performed by the Authors against laboratory certificates that were obtained independently from ALS of Kamloops, BC. Approximately 98% of the entire database was verified for gold and silver. No errors were observed in the assay database.

The Authors validated the Mineral Resource database in GEMS™ by checking for inconsistencies in analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, survey and missing interval and coordinate fields. Some minor errors were identified and corrected in the database. The Authors are of the opinion that the supplied database is suitable for Mineral Resource estimation.

## 14.5 DOMAIN INTERPRETATION

A total of 20 mineralization veins were interpreted and constructed by Westhaven using Seequent Limited Leapfrog® software. The Authors reviewed the models and considered the domain wireframes reasonable and suitable for the Mineral Resource Estimate.

Vein models were developed for each vein using the drill core field logs and assays. The vein models represent continuous gold and silver mineralization. All veins were constrained with a cut-off grade of 1.5 g/t AuEq (Gold Equivalent = Au g/t + Ag g/t / 77.9) to a minimum thickness of 2 m of drill core length. In some cases, samples less than 1.5 g/t AuEq were included to maintain the mineralization continuity and minimum width. The 3-D domain wireframes are presented in Appendix B.

Topographic and overburden surfaces, lithology, dyke, and fault models were also provided by Westhaven. All mineralized veins were clipped by the overburden surface.

The constraining domain wireframes were treated separately for the purpose of rock coding, statistical analysis, compositing limits, and definition of the extent of potentially economic mineralization.

## 14.6 ROCK CODE DETERMINATION

A unique rock code was assigned to each mineralization domain for the Mineral Resource Estimate as presented in Table 14.3.

<b>Domain</b>	<b>Rock Code</b>	<b>Volume (m<sup>3</sup>)</b>
HG-1A_1	110	1,006,280
HG-1A_2	120	193,547
HG-1A_3	130	41,389
HG-1A-4	140	10,035
HG-1B	150	32,456
HG-1C	160	19,709
HG-1D	170	7,439
HG-1E	180	26,103
HG-1G	190	24,503
HG-2A_1	210	170,059
HG-2A_2	220	135,798
HG-2B	230	147,225
HG-2C	240	48,671
HG-2E	260	21,875

<b>Domain</b>	<b>Rock Code</b>	<b>Volume (m<sup>3</sup>)</b>
HG-2F	270	9,480
HG-2G	280	43,551
HG-3A_1	310	46,713
HG-3A_2	320	28,049
HG-3A_3	330	25,404
HG-3B	340	44,213

## 14.7 WIREFRAME CONSTRAINED ASSAYS

Mineral Resource wireframe constrained assays were back-coded in the assay database with model rock codes that were derived from intersections of the mineralization solids and drill holes. The basic statistics of vein mineralization wireframe constrained assays are presented in Table 14.4.

<b>Variable</b>	<b>Au</b>	<b>Ag</b>	<b>Length</b>
Number of Samples	1,233	1,233	1,233
Minimum Value*	0.00	0.08	0.15
Maximum Value*	614.00	2,070.00	3.00
Mean*	6.76	31.06	1.03
Median*	1.89	7.01	1.00
Geometric Mean	1.76	8.39	0.98
Variance	806.45	8,794.99	0.14
Standard Deviation	28.40	93.78	0.37
Coefficient of Variation	4.20	3.02	0.36
Skewness	15.40	11.22	1.84
Kurtosis	295.13	200.76	8.58

*Note:* \* Au and Ag units are g/t; length units are metres.

## 14.8 COMPOSITING

In order to regularize the assay sampling intervals for grade interpolation, a 1.0 m compositing length was selected for the drill hole intervals that fell within the constraints of the above-mentioned Mineral Resource wireframes. The composites were calculated over 1.0 m lengths starting at the first point of intersection between drill hole assay data and the hanging wall of the 3-D zonal constraint. The compositing process was halted upon exit from the footwall of the 3-D

wireframe constraint. A background value of 0.001 g/t Au or Ag was applied to un-assayed intervals.

If the last composite interval in a drill hole was less than 0.25 m, the composite length for that drill hole interval was adjusted to make all composite intervals equal in length. This process would not introduce any short sample bias in the grade interpolation process. The constrained composite data was extracted to a point area file for grade capping analysis. The composite statistics of veins are summarized in Table 14.5.

Variable	Au_Com**	Au_Cap**	Ag_Com**	Ag_Cap**	Composite Length
Number of Samples	1,266	1,266	1,266	1,266	1,266
Minimum Value*	0.00	0.00	0.08	0.08	0.74
Maximum Value*	557.00	102.00	639.37	395.00	1.23
Mean*	5.88	4.91	26.66	24.72	1.00
Median*	2.03	2.03	7.20	7.20	1.00
Geometric Mean	1.95	1.93	8.59	8.51	1.00
Variance	446.38	103.91	3,719.87	2,611.06	0.00
Standard Deviation	21.13	10.19	60.99	51.10	0.03
Coefficient of Variation	3.59	2.08	2.29	2.07	0.03
Skewness	16.67	5.76	5.15	4.23	0.46
Kurtosis	386.62	45.28	37.35	24.18	14.99

*Note:* \* Au and Ag units are g/t; length units are metres.

\*\* Au\_Com: gold composites; Au\_Cap: Gold capped composites; Ag\_Com: silver composites; Ag\_Cap: silver capped composites.

## 14.9 GRADE CAPPING

Grade capping was performed on the 1.0 m composite values in the database within each constraining domain to mitigate the possible bias resulting from erratic high-grade composite values in the database. Log-normal histograms and log-probability plots for the composites were generated for each mineralized domain. Selected histograms and log-probability plots are presented in Appendix C. The capped composite statistics are summarized in Table 14.5. The grade capping values are detailed in Table 14.6. The capped composites were utilized to develop variograms and for block model grade interpolation.

**TABLE 14.6  
GRADE CAPPING VALUES**

Element	Domains	Total No. of Composites	Capping Value	No. of Capped Composites	Mean of Composites	Mean of Capped Composites	CoV of Composites	CoV of Capped Composites	Capping Percentile
Au	HG-1A_1	575	102	4	6.78	6.26	2.70	2.19	99.3
	HG-1A_2	113	31	3	9.60	3.25	5.69	1.78	97.3
	HG-1A_3	40	no cap	0	3.21	3.21	1.50	1.50	100.0
	HG-1A_4	12	17	2	11.73	7.67	1.24	0.87	83.3
	HG-1B	22	no cap	0	2.81	2.81	0.89	0.89	100.0
	HG-1C	15	7	2	7.48	2.43	1.97	0.95	86.7
	HG-1D	8	no cap	0	1.97	1.97	0.58	0.58	100.0
	HG-1E	21	no cap	0	2.88	2.88	0.74	0.74	100.0
	HG-1G	16	no cap	0	2.53	2.53	0.96	0.96	100.0
	HG-2A_1	124	no cap	0	3.25	3.25	1.32	1.32	100.0
	HG-2A_2	107	40	2	6.10	5.93	1.53	1.44	98.1
	HG-2B	75	15	1	3.35	3.24	1.22	1.12	98.7
	HG-2C	32	no cap	0	2.62	2.62	0.89	0.89	100.0
	HG-2E	8	no cap	0	2.86	2.86	0.71	0.71	100.0
	HG-2F	10	no cap	0	2.03	2.03	0.28	0.28	100.0
	HG-2G	14	27	1	13.22	8.81	1.69	1.04	92.9
	HG-3A_1	19	no cap	0	2.49	2.49	1.23	1.23	100.0
	HG-3A_2	12	no cap	0	5.67	5.67	0.97	0.97	100.0
	HG-3A_3	14	no cap	0	2.19	2.19	0.81	0.81	100.0
	HG-3B	29	no cap	0	4.72	4.72	1.44	1.44	100.0
Ag	HG-1A_1	575	395	4	37.10	35.97	2.01	1.87	99.3
	HG-1A_2	113	191	2	19.50	14.13	3.57	2.37	98.2
	HG-1A_3	40	no cap	0	7.79	7.79	0.76	0.76	100.0
	HG-1A_4	12	132	1	55.85	47.92	1.20	1.03	91.7



**TABLE 14.6**  
**GRADE CAPPING VALUES**

Element	Domains	Total No. of Composites	Capping Value	No. of Capped Composites	Mean of Composites	Mean of Capped Composites	CoV of Composites	CoV of Capped Composites	Capping Percentile
	HG-1B	22	no cap	0	7.93	7.93	1.13	1.13	100.0
	HG-1C	15	no cap	0	10.45	10.45	1.38	1.38	100.0
	HG-1D	8	no cap	0	5.04	5.04	0.62	0.62	100.0
	HG-1E	21	no cap	0	4.86	4.86	0.62	0.62	100.0
	HG-1G	16	no cap	0	5.86	5.86	1.36	1.36	100.0
	HG-2A_1	124	52	3	11.31	10.02	1.64	1.23	97.6
	HG-2A_2	107	125	3	28.36	24.92	1.76	1.39	97.2
	HG-2B	75	60	2	13.71	10.42	2.22	1.36	97.3
	HG-2C	32	no cap	0	5.70	5.70	0.87	0.87	100.0
	HG-2E	8	no cap	0	13.32	13.32	0.46	0.46	100.0
	HG-2F	10	no cap	0	13.89	13.89	0.69	0.69	100.0
	HG-2G	14	127	1	52.35	33.06	1.93	1.28	92.9
	HG-3A_1	19	no cap	0	5.95	5.95	1.16	1.16	100.0
	HG-3A_2	12	no cap	0	23.28	23.28	1.11	1.11	100.0
	HG-3A_3	14	no cap	0	12.58	12.58	0.82	0.82	100.0
	HG-3B	29	182	1	50.81	48.78	1.35	1.30	96.6

*Note: CoV = coefficient of variation.*

## 14.10 VARIOGRAPHY

A variography analysis was undertaken using the capped composites as a guide to determine a grade interpolation search distance and ellipse orientation strategy. Selected variograms are attached in Appendix D.

Continuity ellipses based on the observed ranges were subsequently generated and utilized as the basis for estimation search ranges, distance weighting calculations and Mineral Resource classification criteria.

## 14.11 BULK DENSITY

A total of 3,302 bulk density measurements by water immersion method were provided by Westhaven for this estimate, of which 281 bulk densities were located inside the vein wireframes. The vein average bulk density was 2.54 t/m<sup>3</sup> with a range of 2.33 t/m<sup>3</sup> to 2.67 t/m<sup>3</sup>.

During the site visit in 2021, a Qualified Person collected 22 verification samples and tested the bulk density at Activation Laboratories in Kamloops, BC. The resulting average bulk density was 2.52 t/m<sup>3</sup> ranging from 2.46 t/m<sup>3</sup> to 2.61 t/m<sup>3</sup>.

## 14.12 BLOCK MODELLING

The Shovelnose South block model was constructed using GEOVIA GEMS™ V6.8.4 modelling software. The block model origin and block size are presented in Table 14.7. The block model consists of separate model attributes for estimated Au, Ag and AuEq grade, rock type (mineralization domains), volume percent, bulk density, and classification.

<b>TABLE 14.7</b>			
<b>BLOCK MODEL DEFINITION</b>			
<b>Direction</b>	<b>Origin</b>	<b>No. of Blocks</b>	<b>Block Size (m)</b>
X	654,866.668	180	5
Y	5,523,314.099	230	5
Z	1,480.000	106	5
Rotation	40 ° (counterclockwise)		

*Note:* Origin for a block model in GEMS™ represents the coordinate of the outer edge of the block with minimum X and Y, and maximum Z.

All blocks in the rock type block model were initially assigned a waste rock code of 99, corresponding to the surrounding country rocks. The mineralization domains were used to code all blocks within the rock type block model that contain 0.01% or greater volume within the wireframe domains. These blocks were assigned individual model rock codes as presented in Table 14.3. The overburden and topography surfaces were subsequently utilized to assign rock codes 10 and 0, corresponding to overburden and air, respectively, to all blocks 50% or greater above the respective surfaces.

A volume percent block model was set up to accurately represent the volume and subsequent tonnage that was occupied by each block inside the constraining wireframe domain. As a result, the domain boundary was properly represented by the volume percent model ability to measure individual infinitely variable block inclusion percentages within that domain. The volumes of the post mineralization basalt and rhyolite dykes were removed from the volume percent model. The minimum percentage of the mineralization block was set to 0.01%.

The Au and Ag grades were interpolated into the model blocks using Inverse Distance weighting to the third power (“ID<sup>3</sup>”). Nearest Neighbour (“NN”) was run for validation purposes. Multiple passes were executed for the grade interpolation to progressively capture the sample points, to avoid over-smoothing and preserve local grade variability. Grade blocks were interpolated using the parameters in Table 14.8.

Pass	No. of Composites			Search Range (m)		
	Min	Max	Max per Hole	Major	Semi-Major	Minor
I	4	12	3	45	30	15
II	2	12	3	90	60	30

Gold equivalent was calculated with the formula below:

$$AuEq\ g/t = Au\ g/t + (Ag\ g/t / 77.9)$$

Selected vertical cross-sections and plan views for AuEq blocks are presented in Appendix E.

The bulk density of the mineralized blocks was applied as a uniform value of 2.54 t/m<sup>3</sup> which is an average of all veins.

### **14.13 MINERAL RESOURCE CLASSIFICATION**

In the opinion of the Authors, all the drilling, assaying and exploration work on the Shovelnose South Project support this Mineral Resource Estimate which is based on spatial continuity of the mineralization within potentially mineable shapes, and are sufficient to indicate a reasonable potential for economic extraction, thus qualifying it as a Mineral Resource under the 2014 CIM Definition Standards. The Mineral Resource was classified as Indicated and Inferred based on the geological interpretation, variogram performance and drill hole spacing.

The Indicated Mineral Resource was classified for the blocks interpolated with the Pass I in Table 14.8, which used at least two drill holes within a spacing of 45 m or less.

The Inferred Mineral Resource was classified for the blocks interpolated with the Pass II in Table 14.8, which estimated with at least one drill hole.

The classifications were manually adjusted on a longitudinal projection of each vein to reasonably reflect the distribution of each classification. Selected vertical cross-sections and plan views by classification are presented in Appendix F.

#### **14.14 AUEQ CUT-OFF CALCULATION**

The Shovelnose South Mineral Resource Estimate was derived from applying AuEq cut-off grades to the block models and reporting the resulting tonnes and grades for potentially mineable areas.

The following parameters were used to calculate the AuEq cut-off grades that determine underground mining potentially economic portions of the constrained mineralization:

- Au metal price: US\$1,675/oz (24-month trailing average and consensus forecast combined as of Sep 30/21).
- Ag metal price: US\$21.50/oz (24-month trailing average and consensus forecast combined as of Sep 30/21).
- Currency exchange rate: CAD\$/US\$=0.77.
- Au recovery: 95%.
- Ag recovery: 95%.
- Underground mining cost: CAD\$77/tonne.
- Processing cost: CAD\$18/tonne.
- G&A cost: CAD\$5/tonne.

The AuEq cut-off grade of the underground Mineral Resource Estimate is calculated as:

$$(\$77 + \$18 + \$5)/(\$1,675/0.77 \times 95\%/31.1035) = 1.5 \text{ g/t AuEq.}$$

#### **14.15 MINERAL RESOURCE ESTIMATE**

The Mineral Resource Estimate is reported with an effective date of July 18, 2023, and is tabulated in Table 14.9. The Authors consider the mineralization of the Shovelnose Property South Zone to be potentially amenable to underground mining methods.

**TABLE 14.9**  
**UNDERGROUND MINERAL RESOURCE ESTIMATE @ 1.5 G/T AUEQ CUT-OFF <sup>(1-9)</sup>**

<b>Classification</b>	<b>Tonnes (kt)</b>	<b>Au (g/t)</b>	<b>Contained Au (koz)</b>	<b>Ag (g/t)</b>	<b>Contained Ag (koz)</b>	<b>AuEq (g/t)</b>	<b>Contained AuEq (koz)</b>
Indicated	2,983	6.38	612	34.1	3,273	6.81	654
Inferred	1,331	3.89	166	16.9	725	4.10	176

1. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
2. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
3. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could potentially be upgraded to an Indicated Mineral Resource with continued exploration.
4. The Mineral Resources were estimated in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.
5. Grade estimation was undertaken with ID<sup>3</sup> interpolation.
6. Au and Ag process recovery used was 95%.
7. US\$ metal prices used were \$1,675/oz for Au and \$21.50/oz for Ag with a CAD\$:US\$ FX of 0.77.
8. CAD\$ operating costs used were \$77/t underground mining, \$18/t processing and \$5/t G&A.
9.  $AuEq\ g/t = Au\ g/t + (Ag\ g/t / 77.9)$ .

#### 14.16 MINERAL RESOURCE SENSITIVITIES

Mineral Resources are sensitive to the selection of reporting AuEq cut-off grades and the sensitivities are demonstrated in Table 14.10.

**TABLE 14.10**  
**MINERAL RESOURCE ESTIMATE SENSITIVITY**

<b>Classification</b>	<b>Cut-off AuEq (g/t)</b>	<b>Tonnes (kt)</b>	<b>Au (g/t)</b>	<b>Au (koz)</b>	<b>Ag (g/t)</b>	<b>Ag (koz)</b>	<b>AuEq (g/t)</b>	<b>AuEq (koz)</b>
Indicated	5	1,235	11.52	457	62.01	2,462	12.31	489
	4.5	1,367	10.83	476	58.39	2,566	11.58	509
	4	1,543	10.05	498	54.30	2,693	10.74	533
	3.5	1,743	9.30	521	50.13	2,809	9.94	557
	3	1,982	8.54	544	45.90	2,925	9.13	582
	2.5	2,286	7.75	570	41.42	3,044	8.28	609
	2	2,628	7.02	593	37.38	3,159	7.50	634
	1.5	2,983	6.38	612	34.12	3,273	6.81	654
	1.0	3,257	5.94	622	31.83	3,333	6.35	665
	0.5	3,425	5.68	626	30.46	3,354	6.08	669

**TABLE 14.10**  
**MINERAL RESOURCE ESTIMATE SENSITIVITY**

<b>Classification</b>	<b>Cut-off AuEq (g/t)</b>	<b>Tonnes (kt)</b>	<b>Au (g/t)</b>	<b>Au (koz)</b>	<b>Ag (g/t)</b>	<b>Ag (koz)</b>	<b>AuEq (g/t)</b>	<b>AuEq (koz)</b>
Inferred	5	325	7.90	83	32.36	338	8.31	87
	4.5	389	7.34	92	30.20	377	7.73	97
	4	470	6.76	102	28.15	426	7.13	108
	3.5	564	6.23	113	26.18	475	6.56	119
	3	694	5.64	126	24.00	536	5.95	133
	2.5	824	5.16	137	22.19	588	5.44	144
	2	1,015	4.58	149	19.80	646	4.83	158
	1.5	1,331	3.89	166	16.94	725	4.10	176
	1.0	1,432	3.70	170	16.17	744	3.91	180
0.5	1,472	3.62	171	15.80	748	3.82	181	

#### 14.17 MODEL VALIDATION

The block model was validated using a number of industry standard methods including visual and statistical methods.

- Visual examination of composites and block grades on successive plans and sections were performed on-screen to confirm that the block models correctly reflect the distribution of composite grades.

The review of estimation parameters included:

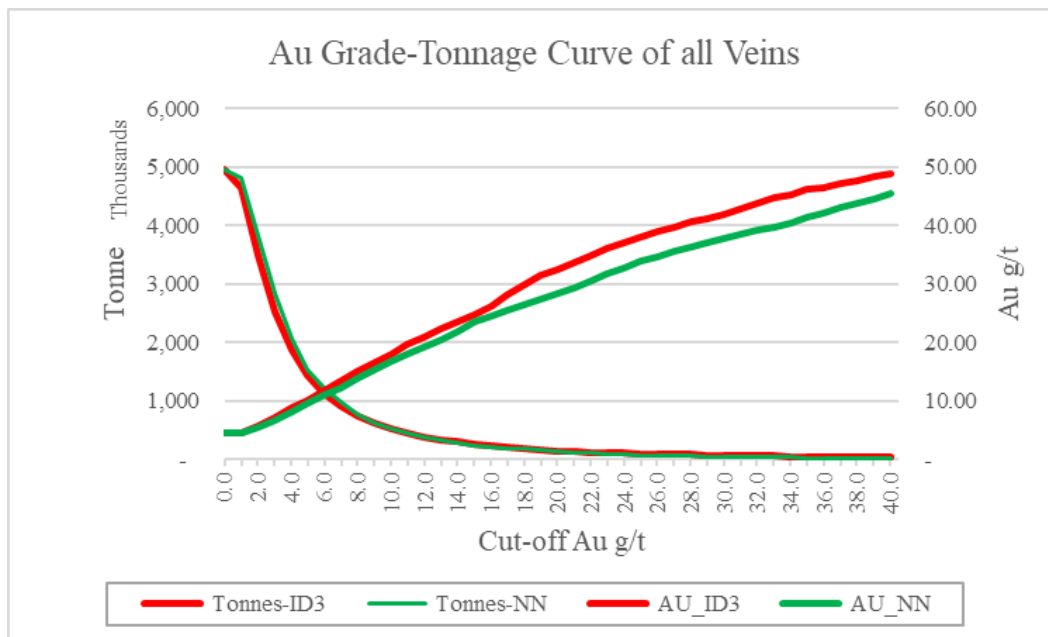
- Number of composites used for estimation;
  - Number of drill holes used for estimation;
  - Mean distance to sample used;
  - Number of passes used to estimate grade;
  - Actual distance to closest point;
  - Grade of true closest point; and,
  - Mean value of the composites used.
- The ID<sup>3</sup> estimate was compared to a NN estimate along with composites. A comparison of mean composite grade with the block model of veins at 0.001 g/t AuEq grade are presented in Table 14.11.

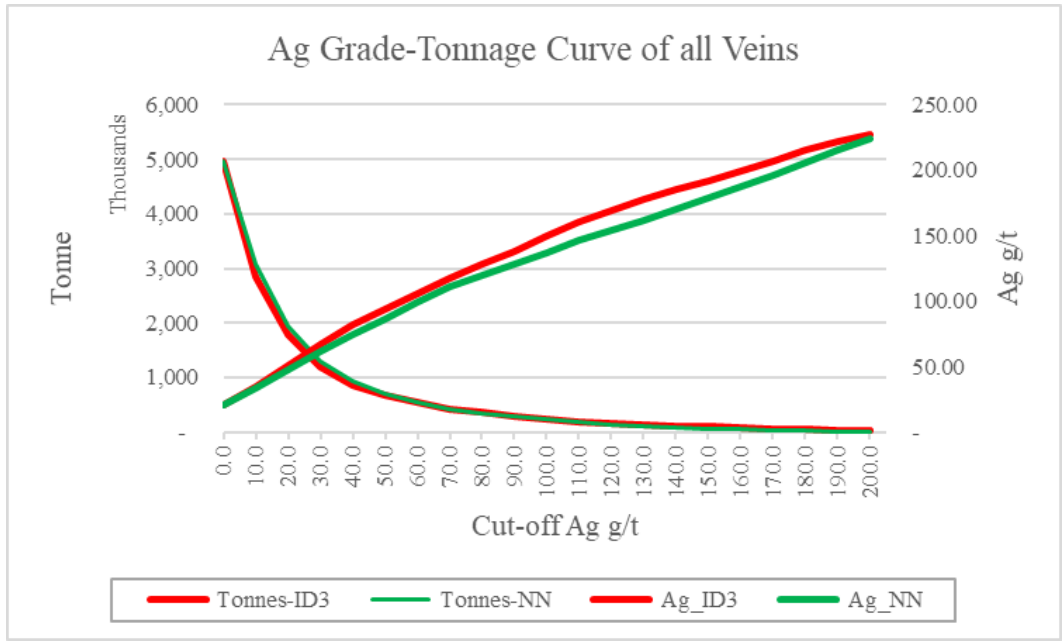
TABLE 14.11 AVERAGE GRADE COMPARISON OF COMPOSITES WITH BLOCK MODEL		
Data Type	Au (g/t)	Ag (g/t)
Composites	5.88	26.7
Capped composites	4.91	24.7
Block model interpolated with ID <sup>3</sup>	4.39	21.0
Block model interpolated with NN	4.46	21.3

The comparison shows the average Au and Ag grade of the block model was lower than that of the capped composites used for grade estimation. These were most likely due to grade clustered distribution and interpolation processes. The block model values will be more representative than the composites due to 3-D spatial distribution characteristics of the block models.

- A comparison of the Au and Ag grade-tonnage curves are interpolated with ID<sup>3</sup> and NN on a global mineralization basis in Figure 14.1.

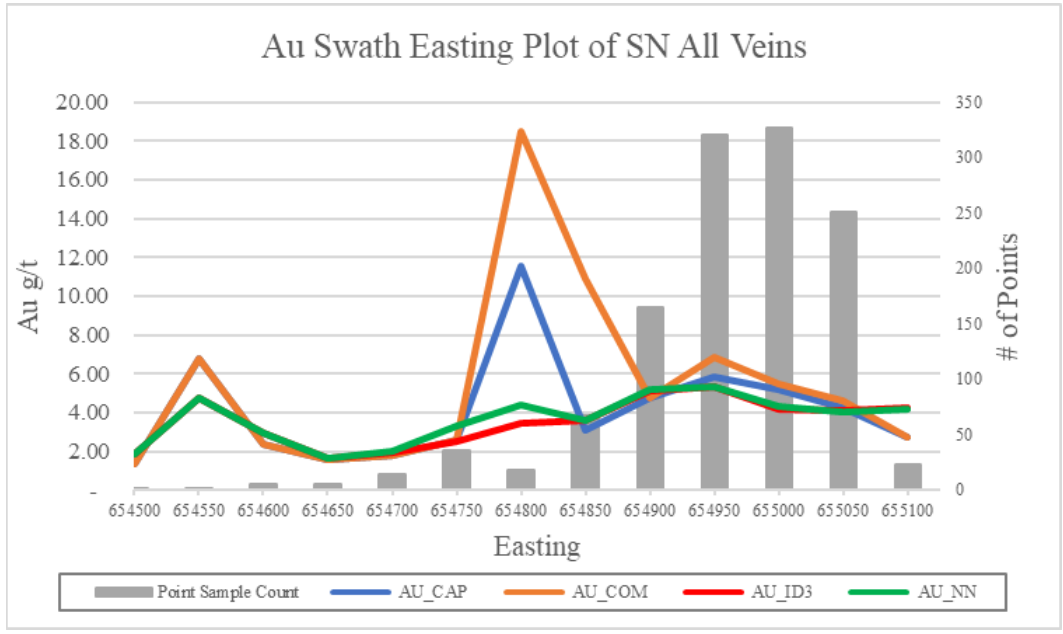
**FIGURE 14.1 AU AND AG GRADE-TONNAGE CURVE OF SHOVELNOSE VEINS**



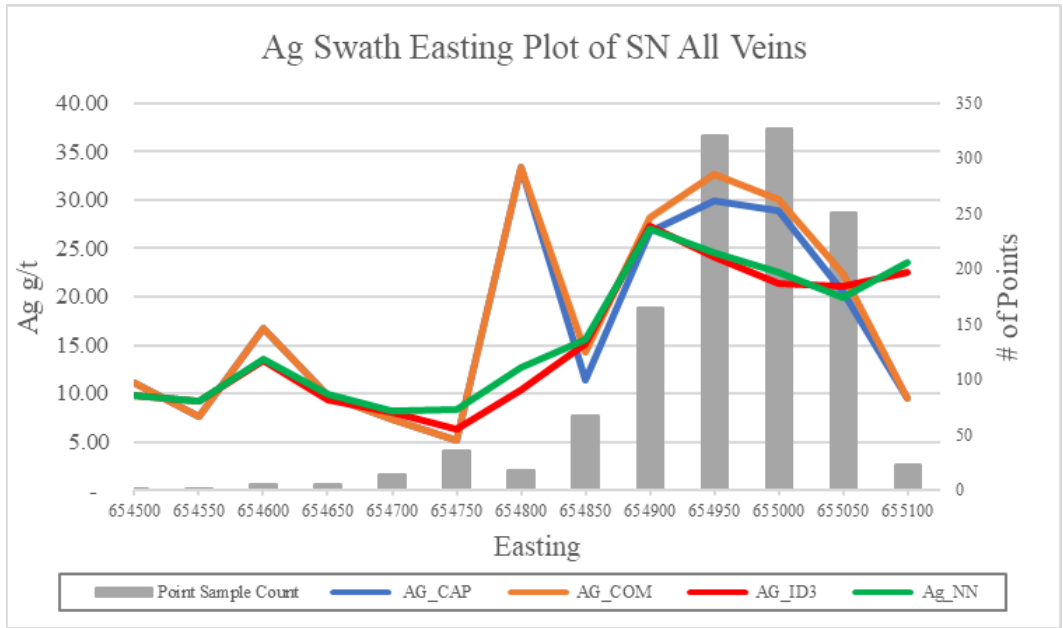


- Au and Ag local trends of veins were evaluated by comparing the ID<sup>3</sup> and NN estimate against the composites. The special swath plots of all veins are shown in Figure 14.2, 14.3, and 14.4.

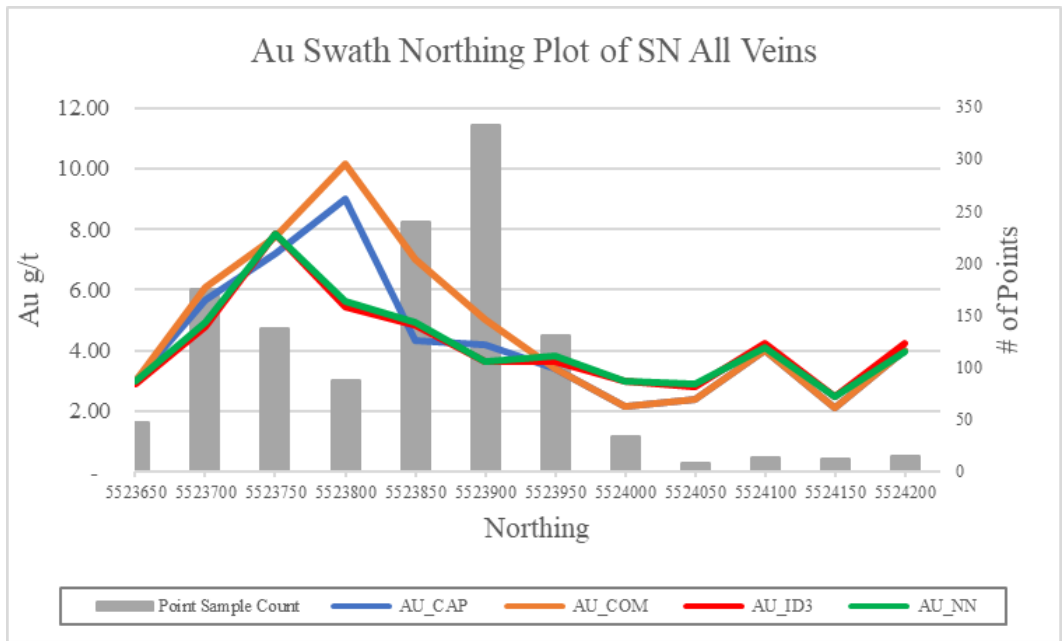
**FIGURE 14.2 AU AND AG GRADE SWATH EASTING PLOT OF ALL VEINS**

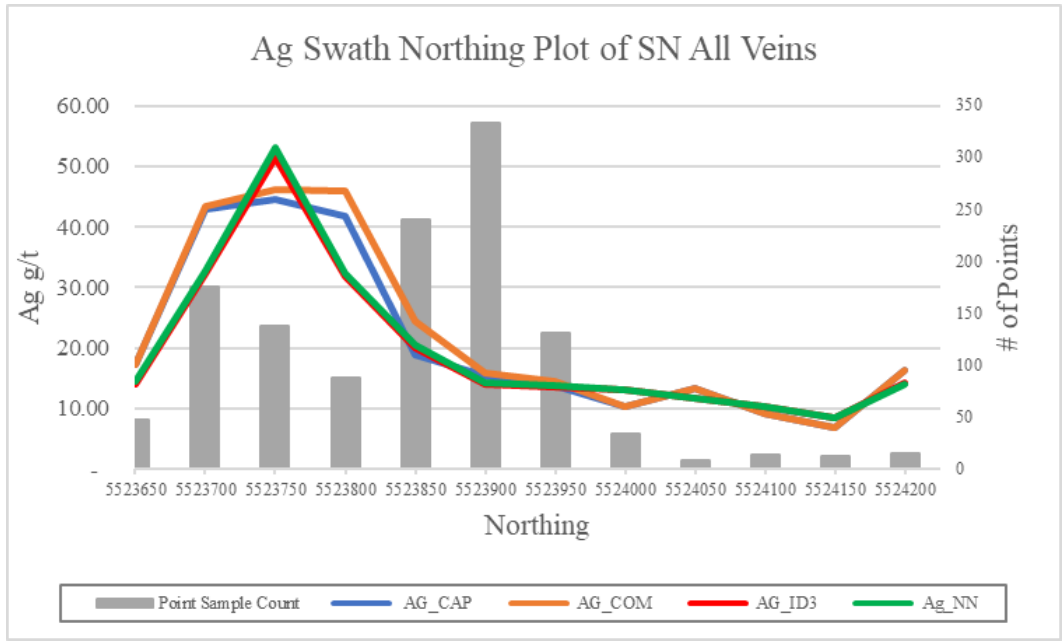




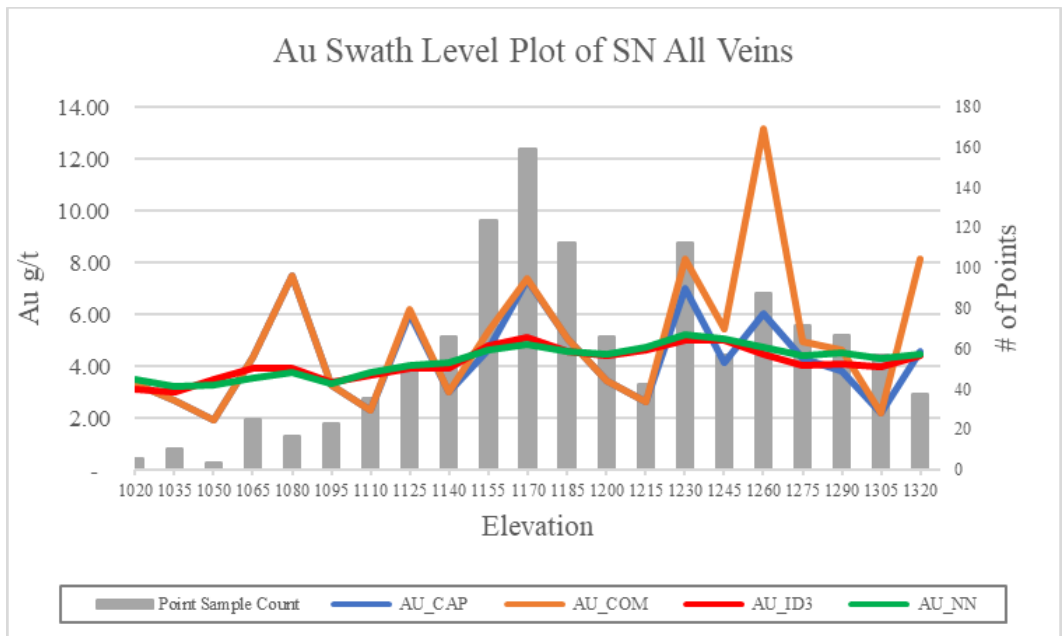


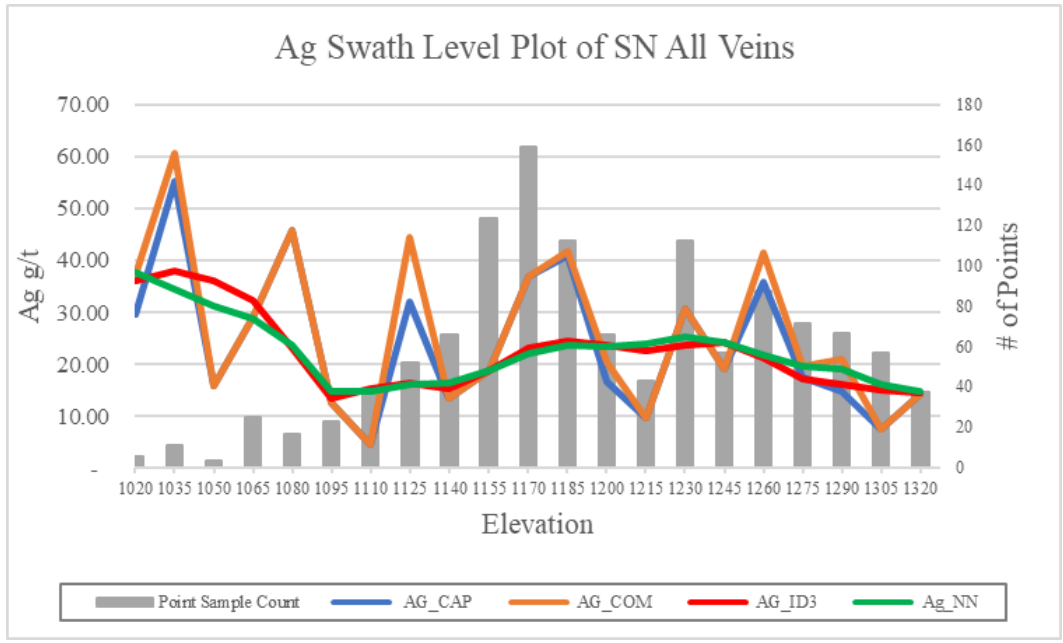
**FIGURE 14.3 AU AND AG GRADE SWATH NORTHING PLOT OF ALL VEINS**





**FIGURE 14.4 AU AND AG GRADE SWATH LEVEL PLOT OF ALL VEINS**





## **15.0 MINERAL RESERVE ESTIMATES**

This section is not applicable to this Report.

## 16.0 MINING METHODS

The Shovelnose Project will be mined by three underground mining methods: transverse longhole stoping with primary and secondary stopes, longitudinal longhole stoping, and cut-and-fill stoping. The average vein widths to be mined are 16.2 m, 6.6 m and 3.0 m, respectively. Underground production will include both development and stope mineralization. Stopes will be filled with cemented paste backfill.

The potential mining area extends to a vertical depth of 275 m from the 1,325 m level (“L”) elevation to the 1,050L elevation. There are nine underground mining zones: Zone 1, Zone 1 H/W, Zone 1 F/W, Zone 2C1, Zone 2A2, Zone 2A1, Zone 2B1, Zone 3 H/W and Zone 3 F/W. A portal and main ramp is planned to provide primary and direct access to all levels and Zones. Table 16.1 presents the mine plan portion of the Mineral Resource by classification. Tables 16.2 and 16.3 present summaries of tonnes by mining method, Zone and level.

<b>Classification</b>		<b>Indicated</b>			<b>Inferred</b>		
<b>Item</b>	<b>Zone</b>	<b>Tonnes (t)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>	<b>Tonnes (t)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
Development (D)	Zone 1 HG(1A)	144,359	6.56	36.8	14,640	3.57	18.2
	Zone 2 HG(2A)	75,675	4.53	15.6	19,341	3.92	13.1
	Zone 3 HG(3A)	11,909	3.58	27.6	52,099	3.88	17.4
	<b>Subtotal</b>	<b>231,943</b>	<b>5.74</b>	<b>29.4</b>	<b>86,080</b>	<b>3.84</b>	<b>16.6</b>
Stopes (S)	Zone 1 HG(1A)	1,930,040	6.37	37.4	195,736	3.47	18.5
	Zone 2 HG(2A)	667,157	4.01	13.4	170,512	3.47	11.3
	Zone 3 HG(3A)	31,808	3.40	32.3	139,153	3.68	20.5
	<b>Subtotal</b>	<b>2,629,005</b>	<b>5.74</b>	<b>31.3</b>	<b>505,402</b>	<b>3.53</b>	<b>16.6</b>
<b>Combined S&amp;D</b>	Zone 1 HG(1A)	2,074,399	6.39	37.4	210,376	3.47	18.5
	Zone 2 HG(2A)	742,832	4.06	13.6	189,853	3.51	11.4
	Zone 3 HG(3A)	43,717	3.45	31.0	191,252	3.74	19.6
	<b>Total</b>	<b>2,860,948</b>	<b>5.74</b>	<b>31.1</b>	<b>591,482</b>	<b>3.57</b>	<b>16.6</b>

**TABLE 16.2**  
**TONNES BY MINING METHOD AND MINING ZONE**

Mining Method	Vein Zone									Total Tonnes
	1	1 H/W	1 F/W	2 C1	2 A2	2 A1	2 B1	3 H/W	3 F/W	
LH	908,281	164,145	59,004	30,202	316,753	300,472	187,262	92,836	142,134	2,201,089
TLH	1,049,246	0	0	0	0	0	0	0	0	1,049,246
C&F	23,565	63,116	17,418	43,820	0	47,302	6,874	0	0	202,095
<b>Total</b>	<b>1,981,092</b>	<b>227,261</b>	<b>76,422</b>	<b>74,022</b>	<b>316,753</b>	<b>347,775</b>	<b>194,136</b>	<b>92,836</b>	<b>142,134</b>	<b>3,452,430</b>

*Note: LH = Longitudinal Longhole; TLH = Transverse Longhole; C&F = Cut and Fill.*

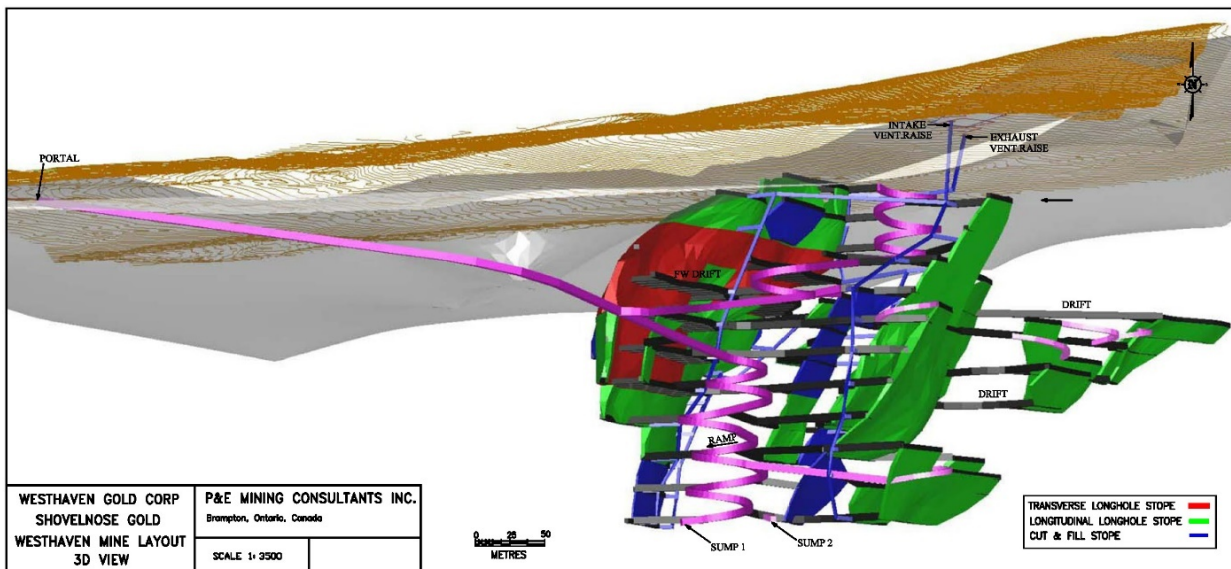
**TABLE 16.3**  
**TONNES BY MINING LEVEL AND MINING ZONE**

Mine Level	Vein Zone									Total Tonnes
	1	1 H/W	1 F/W	2 C1	2 A2	2 A1	2 B1	3 H/W	3 F/W	
1300L	84,878	67,188	0	0	0	0	0	0	0	<b>152,066</b>
1275L	167,970	47,007	17,418	0	12,860	0	0	0	0	<b>245,255</b>
1250L	271,861	49,950	0	0	16,295	0	0	0	0	<b>338,106</b>
1225L	332,482	21,788	13,709	0	28,325	0	27,313	0	0	<b>423,616</b>
1200L	329,466	17,975	14,992	8,263	42,623	10,037	38,318	18,178	25,052	<b>504,904</b>
1175L	341,591	23,353	14,267	9,116	75,781	61,094	50,867	21,549	5,752	<b>603,369</b>
1150L	261,926	0	16,037	11,969	82,671	93,031	52,148	15,582	15,518	<b>548,882</b>
1125L	129,619	0	0	23,976	58,197	71,202	0	0	0	<b>282,995</b>
1100L	37,732	0	0	20,698	0	65,109	25,490	0	0	<b>149,030</b>
1075L	14,978	0	0	0	0	32,127	0	9,788	45,124	<b>102,016</b>
1050L	8,588	0	0	0	0	15,176	0	27,740	50,687	<b>102,190</b>
<b>Total</b>	<b>1,981,092</b>	<b>227,261</b>	<b>76,422</b>	<b>74,022</b>	<b>316,753</b>	<b>347,775</b>	<b>194,136</b>	<b>92,836</b>	<b>142,134</b>	<b>3,452,430</b>

The Transverse Longhole mining method will be implemented only in Vein Zone 1 where the mineralized zone is at least 15 m wide. Primary and secondary stopes will be mined from crosscuts driven in mineralization on 15 m footwall drift centers. An estimated 32% of stoping will be by the Transverse Longhole mining method. Approximately 62% of stoping will be by the Longitudinal Longhole mining method, on a retreat basis. The balance of stopes (6%) will be mined by the Cut and Fill mining method.

A 3-D schematic view of the mine layout is shown in Figure 16.1. Level plans can be found Appendix G.

**FIGURE 16.1 SHOVELNOSE UNDERGROUND MINE DESIGN**



All mine and stope development will be carried out by a mining contractor. Company personnel will carry out all other mining activities including stope drilling and blasting, haulage of mineralized material, backfilling, administration, technical support and personnel, and underground and surface support equipment.

All nine underground mining zones at Shovelnose will be serviced by ventilation, electrical and compressed air supplies, and dewatering systems. Fresh air will be provided through a fresh air raise (“FAR”) and the main ramp, while the return air will exhaust upwards in a return air raise (“RAR”). The FAR and main ramp will be equipped with direct-fired propane mine air heaters during the winter months. Pump stations will use both electric submersible and centrifugal pumps to move water to surface through pipelines. High-voltage electrical power will be provided to the ramp portal and FAR then fed at lower voltages down the ramp, FAR and/or boreholes to the underground workings.

The Project is planned to produce at a nominal production rate of 1,000 tpd, combined stope and development mineralization, 30,438 tonnes per month for approximately 10.5 years. Mineralized production will consist of 3,452,400 t mined. The proposed production schedule, from all sources, is presented in Table 16.4.

**TABLE 16.4**  
**PRODUCTION SCHEDULE (TONNES)**

<b>Description</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Development	10,771	72,894	65,115	14,448	17,494	20,057	26,804	28,213	34,389	27,838	0	<b>318,023</b>
Slot Raises	0	3,200	5,334	4,694	5,391	4,295	5,250	5,974	5,761	5,547	3,414	<b>48,859</b>
Longitudinal	0	82,898	193,233	217,492	182,730	203,122	105,793	209,923	278,989	276,138	168,983	<b>1,919,301</b>
Transverse	0	160,539	85,937	122,180	139,452	137,776	203,608	113,774	28,820	0	0	<b>992,085</b>
Cut and Fill	0	23,618	15,631	6,436	20,183	0	23,795	7,367	17,292	55,726	4,112	<b>174,160</b>
<b>Total (t)</b>	<b>10,771</b>	<b>343,150</b>	<b>365,250</b>	<b>365,250</b>	<b>365,250</b>	<b>365,250</b>	<b>365,250</b>	<b>365,250</b>	<b>365,250</b>	<b>365,250</b>	<b>176,509</b>	<b>3,452,430</b>

In addition to the 3,452,400 t of mineralized material mined, 533,000 t of waste rock will be extracted from the mine workings. A summary of waste tonnes extracted from the mine workings is presented in Table 16.5.

**TABLE 16.5**  
**WASTE ROCK PRODUCTION (TONNES)**

<b>Description</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Main Ramp	127,056	70,996	0	0	0	0	0	0	0	0	0	198,052
Access. Drift/ Xcut	11,894	18,700	0	0	0	0	0	0	0	0	0	30,594
Internal Ramp/ Sump/FW Drift	11,960	56,743	46,686	13,651	5,920	8,960	16,160	3,440	21,120	12,760	0	197,400
FW Xcut	19,440	8,549	21,611	0	10,240	0	0	0	0	0	0	59,840
Vent Xcuts	0	7,470	2,880	0	0	7,628	3,186	2,506	6,930	1,238	0	31,838
Vent Raises	0	3,730	2,174	0	0	2,290	2,405	1,080	2,400	1,152	0	15,231
<b>Total Waste (t)</b>	<b>170,349</b>	<b>166,187</b>	<b>73,351</b>	<b>13,651</b>	<b>16,160</b>	<b>18,877</b>	<b>21,751</b>	<b>7,026</b>	<b>30,450</b>	<b>15,150</b>	<b>0</b>	<b>532,954</b>



Access to the Shovelnose mining zones will be via a 5.5 m high by 5.0 m wide -15% ramp from a surface elevation of 1,265 m, accessing all levels from the 1,325 m elevation to the 1,050 m elevation, a vertical depth of 275 m. A conceptualized mining plan has been developed based on using underground mechanized trackless mining equipment. The primary underground mining method will be conventional longitudinal longhole stoping, on a retreat basis followed by transverse longhole stoping and cut and fill stoping. Stopes will be backfilled with cemented paste backfill. Stopes will generally be 25 m high, floor to back, with both floor and back level access. Longitudinal longhole stopes are planned to be 25 m long. Each longhole stope will have a 2 m by 2 m slot raise. Drifts/crosscuts in mineralization will provide access for the successive operations of slot raise development, blasthole drilling, blasting, excavating, and backfill placement. A few stopes will be less than 25 m high. Remotely operated underground load/haul/dump (“LHD”) units will remove broken mineralization from the stopes. The stopes will be backfilled primarily with paste backfill, supplemented with development waste rock when available.

A steady state production rate of 1,000 tpd of stope and development mineralization will begin to be mined starting in the 27<sup>th</sup> month, from the start of the Project, on a schedule of 365 working days per year.

A summary of daily average mineralized production rates by year and source is presented in Table 16.6.

<b>Description</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>
Development	29	200	178	40	48	55	73	77	94	76	0
Slot	0	9	15	13	15	12	14	16	16	15	9
Longitudinal	0	227	529	595	500	556	290	575	764	756	463
Transverse	0	440	235	335	382	377	557	311	79	0	0
C&F	0	65	43	18	55	0	65	20	47	153	11
<b>Total (tpd)</b>	<b>29</b>	<b>939</b>	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>	<b>483</b>
Au (g/t)	8.01	5.61	5.51	5.12	5.73	5.61	6.46	4.89	5.20	4.84	3.84
Ag (g/t)	67.7	36.8	26.4	25.0	35.2	31.6	31.2	21.6	27.4	26.4	19.2

*Note: Longitudinal = Longitudinal Longhole; Transverse = Transverse Longhole; C&F = Cut and Fill.*

## 16.1 CUT-OFF GRADE

The parameters in Table 16.7 were initially used to develop a cut-off grade for the Mineral Resource stope outlines. A 2.0 AuEq g/t grade was used to define the stope outlines.

<b>TABLE 16.7</b>			
<b>CUT-OFF GRADE USED FOR STOPE OUTLINES</b>			
<b>Description / Item</b>		<b>Mining Method</b>	
		<b>L/H</b>	<b>C&amp;F</b>
<b>OPEX</b>	Mining	77.00	92.00
<b>(CAD\$/t)</b>	Process Plant	25.00	25.00
	G&A	10.00	10.00
	<b>Total OPEX</b>	<b>112.00</b>	<b>127.00</b>
<b>Revenue</b>	Au Metal Price (US\$/oz)	1,750	1,750
	Exchange Rate (US\$/CAD\$)	0.75	0.75
	Grams / Ounce (g/oz)	31.1035	31.1035
	Au Metal Price (CAD\$/g)	75.02	75.02
	Metallurgical Recovery (%)	88	88
	<b>Revenue (CAD\$/g)</b>	<b>66.02</b>	<b>66.02</b>
<b>Item</b>		<b>AuEq (g/t)</b>	<b>AuEq (g/t)</b>
<b>Cut-off</b>	Undiluted	<b>1.70</b>	<b>1.92</b>
<b>Grade</b>	Diluted	<b>2.04</b>	<b>2.15</b>

*Note: L/H = Longhole, C&F = Cut and Fill, AuEq = Gold Equivalent.*

## 16.2 LONGITUDINAL LONGHOLE STOPING METHOD

The longitudinal longhole retreat mining method was planned for veins between 3 m and 15 m wide. The method is initiated with level drifts developed the full length of the mineralization every 25 m vertical height (“undercuts” and “overcuts”), from the main ramp access drifts/crosscuts. A 2.0 m by 2.0 m slot / ventilation / backfill raise is then driven every 25 m on strike, to result in a 25 m long longitudinal longhole stope.

Blastholes measuring 92 mm ( $3^{5/8}$  inches) in diameter will be drilled from the level either up or down to break through to the level above or below. These blastholes would typically be drilled on a 2.1 m by 2.1 m pattern, in order to break the rock into the open slot and stope. The blasting powder factor necessary to produce adequate fragmentation of the rock, using emulsion explosives, is estimated to be 0.60 kg/t. A typical longhole stope configuration will contain 12,698 t of stope mineralization, 1,016 t of development drift mineralization and 213 t of slot mineralization for a total of 13,927 t of ROM mineralized material. A summary of longhole stope drilling and blasting parameters is presented in Table 16.8.

<b>TABLE 16.8</b>	
<b>LONGITUDINAL LONGHOLE STOPING DRILLING AND BLASTING PARAMETERS</b>	
<b>Parameter</b>	<b>Amount</b>
<b>Total Tonnes Process Plant Feed per Day</b>	1,000
Mineralization In-Situ Bulk Density (t/m <sup>3</sup> )	2.54
Stope Height (m)	25
Nominal Stope Width (m)	15.0
Nominal Stope Length (m)	25
Total Nominal Stope Tonnage	13,927
Slot Raise Tonnage	213
Nominal Sublevel Drift Tonnage	1,016
Nominal Longhole Tonnage	12,698
<b>Longhole Drilling Parameters @ 92 mm Dia Holes</b>	
Total Drilling Per Stope (metres)	976
Drill holes Per Stope	73
Drilling Time Per Shift (Hrs)	10
Metres Drilled Per Shift	76
Total Metres Drilled Per Day	152
Required Metres Per Day For Production Schedule	65
<b>Blasting Parameters</b>	
Blast Hole Loading Time Per Shift (Hrs)	10
Stemming Length Per Blasted Hole Length (m)	0.3
Load Length Per Hole, (m)	13.0
Length Of Blast Holes Loaded Per Stope (m)	954

Paste backfill, and development waste rock, will be placed in the mined-out stopes, from the level above once extraction of stope mineralization is complete.

The stope mining cycle will include longhole drilling, blasting, extraction and backfilling. The overall average stope mining productivity is estimated to be 270 tpd per stope. At any given time, a maximum of four levels will be available for stope mining. On average this would provide for a minimum production rate of 211 tpd per level, 843 tpd overall. The maximum daily longitudinal longhole production rate is 1,000 tpd in the 113<sup>st</sup> month from the start of the Project. When no other source of mineralized material is available a fifth stope level will be made available for stope mining.

A summary of longhole stoping productivities is presented in Table 16.9.

**TABLE 16.9**  
**LONGHOLE STOPING PRODUCTIVITIES**

Operation	Productivity
Drilling (tpd)	1,983
Blasting (tpd)	1,983
Excavating (tpd)	1,000
Backfill (tpd)	1,444
Average Stope Productivity (tpd)	270
Minimum tpd / Level	211
Maximum Number of Working Levels	4

Longitudinal longhole stope mining will start during the 26<sup>th</sup> month, from the start of the Project, on the 1,175 m L. Initially stopes at the far ends of the drifts in mineralization will be mined, followed by stopes being mined successively retreating towards the level access crosscut. A second long-hole stoping front will start, during the 39<sup>th</sup> month, on the 1,150 m L. Longitudinal longhole stopes will be between 3 m and 15 m wide. It is estimated that there will be a total 175 longitudinal longhole stopes, LOM.

The envisaged underground longitudinal longhole mining method for the Project is estimated to result in external dilution of 20%, at a diluted grade of 1.05 g/t Au and 4.3 g/t Ag. Mining recovery (extraction) is estimated at 90%. It is estimated that 62% of stope mineralization will be mined by the longitudinal longhole stope method.

### **16.3 TRANVERSE LONGHOLE STOPING METHOD**

The transverse longhole mining method was implemented for veins greater than 15 m wide. The transverse longhole mining method is initially developed from footwall drifts. Primary and secondary stopes will be mined from crosscuts driven from the footwall drifts, on 15 m centres. These crosscuts will be driven the full width of the deposit in mineralization every 25 m vertical height (“undercuts” and “overcuts”). A 2.0 m by 2.0 m slot / ventilation / backfill raise will be driven near the hanging wall contact from the undercut crosscut to the overcut crosscut. Stopes will be at least 15 m long. Primary stopes will be mined and backfilled first, followed by secondary stopes.

Blastholes measuring 92 mm (3<sup>5/8</sup> inches) in diameter will be drilled from the level either up or down to break through to the level above or below. These blastholes would typically be drilled on a 2.1 m by 2.1 m pattern, in order to break the rock into the open slot and stope. The blasting powder factor necessary to produce adequate fragmentation of the rock, using emulsion explosives, is estimated to be 0.60 kg/t. A typical 25 m long longhole stope configuration will contain 12,698 t of stope mineralization, 1,016 t of development drift mineralization and 213 tonnes of slot mineralization for a total of 13,927 tonnes of ROM mineralized material. A summary of longhole stope drilling and blasting parameters is presented in Table 16.10.

<b>TABLE 16.10 TRANSVERSE LONGHOLE STOPING DRILLING AND BLASTING PARAMETERS</b>	
<b>Parameter</b>	<b>Amount</b>
<b>Total Tonnes Process Plant Feed per Day</b>	1,000
Mineralization Bulk Density (t/m <sup>3</sup> )	2.54
Stope Height (m)	25
Nominal Stope Width (m)	15.0
Nominal Stope Length (m)	+15
Total Nominal Stope Tonnage Per 25 m Long Stope	13,927
Slot Raise Tonnage	213
Nominal Sublevel Crosscut Tonnage	1,016
Nominal Average Longhole Tonnage	12,698
<b>Longhole Drilling Parameters @ 92 mm Dia Holes</b>	
Total Drilling Per 25 m Long Stope (m)	976
Drill Holes Per 25 m Long Stope	73
Drilling Time Per Shift (hrs)	10
Metres Drilled Per Shift	76
Total Metres Drilled Per Day	152
Required Metres Per Day For Production Schedule	65
<b>Blasting Parameters</b>	
Blast Hole Loading Time Per Shift (hrs)	10
Stemming Length Per Blasted Hole Length (m)	0.3
Load Length Per Hole, (m)	13.0
Length Of Blast Holes Loaded Per 25 m Long Stope (m)	954

Cemented paste backfill, and development waste rock, will be placed in the mined-out stopes, from the level above once stope mineralization extraction is complete.

The stope mining cycle will include longhole drilling, blasting, extraction and backfilling. The overall average stope mining productivity is estimated to be 270 tpd per 25 m long stope. At any given time, a maximum of four levels will be available for stope mining. On average this would provide for a minimum production rate of 211 tpd per level, 843 tpd overall. The maximum daily transverse longhole production rate is 857 tpd in the 90<sup>th</sup> month from the start of the Project. When no other source of mineralized rock is available a fifth stope level will be made available for stope mining.

A summary of longhole stoping productivities is presented in Table 16.11.

**TABLE 16.11  
LONGHOLE STOPING PRODUCTIVITIES**

Operation	Productivity
Drilling (tpd)	1,983
Blasting (tpd)	1,983
Extraction (tpd)	1,000
Backfill (tpd)	1,444
Average Stope Productivity (tpd)	270
Minimum tpd / Level	211
Maximum Number of Working Levels	4

Transverse longhole stope mining will start during the 26<sup>th</sup> month on the 1,175 m L. Initially primary stopes will be mined, followed by adjacent secondary stopes. A second long-hole stoping front will start, during the 39<sup>th</sup> month, on the 1,150 m L. Transverse longhole stope will be 15 m wide and at least 15 m long. It is estimated that there will be a total 54 transverse longhole stopes, LOM.

The envisaged underground transverse longhole mining method is estimated to result in external dilution of 20%, at a diluted grade of 1.05 g/t Au and 4.3 g/t Ag. Mining recovery (extraction) is estimated at 90%. It is estimated that 32% of stope mineralization will be by the transverse longhole stope mining method.

#### **16.4 CUT AND FILL MINING METHOD**

The cut-and-fill (“C&F”) mining method will be implemented in veins 3 m or less wide. Initially these drifts in mineralization will be driven the full strike length of the mineralized zones as the first lift.

The C&F stope mining cycle will include jumbo drilling, blasting, extraction, ground support, install services and backfilling. The maximum daily C&F production rate is 334 tpd in the 130<sup>th</sup> month from the start of the Project. A maximum of three cut and fill stopes will be available for mining in that 130<sup>th</sup> month from the start of the Project.

C&F mining will start during the 26<sup>th</sup> month on the 1,175 m L and proceed upwards to the 1,200 m L. C&F stopes will be backfilled with cemented paste backfill and development waste rock, when available. The envisaged C&F mining method is estimated to result in external dilution of 12%, at a diluted grade of 1.05 g/t Au and 4.3 g/t Ag. Mining recovery (extraction) is estimated at 95%. It is estimated that 6% of stope mineralization will be by the C&F stope mining method.

#### **16.5 MINE AND STOPE DEVELOPMENT**

All excavations in waste rock are classified as mine development. All development in mineralization that produces process plant feed is classified as stope development. The LOM

schedule includes a total of 13,414 m of mine development. A summary of LOM mine development is presented in Table 16.12.

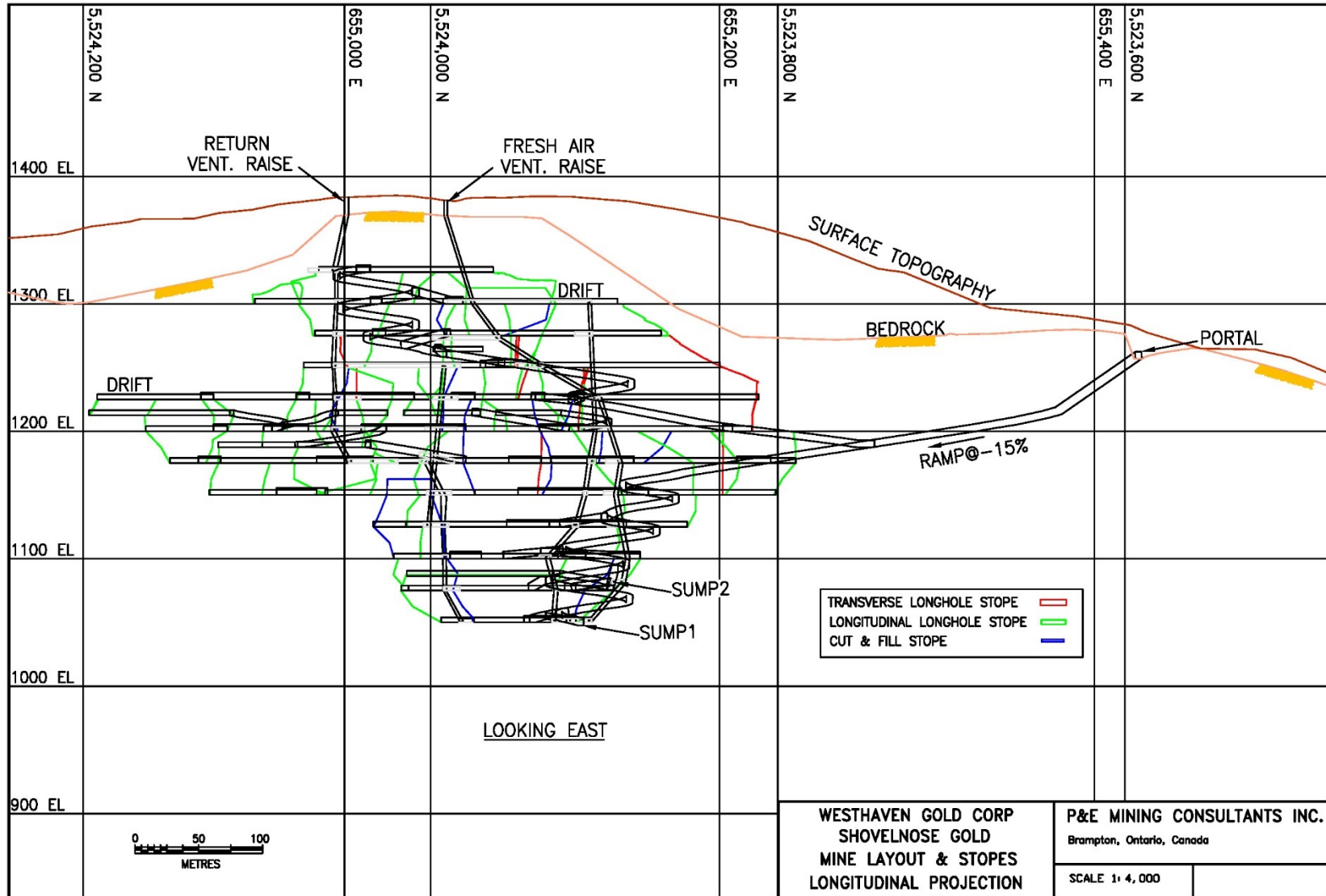
<b>TABLE 16.12 LOM UNDERGROUND MINE DEVELOPMENT</b>		
<b>Description</b>	<b>Size (W x H) (m)</b>	<b>Length (m)</b>
Main Ramp	5.0 x 5.5	2,881
Access. Drift/ Crosscuts	5.0 x 5.5	445
Internal ramp/sump/FW Drifts	4.0 x 4.0	5,675
Footwall Crosscut	4.0 x 4.0	1,720
Ventilation Crosscuts	3.0 x 3.0	1,626
Ventilation Raises	2.4 x 2.4	1,067
<b>Total Mine Development</b>		<b>13,414</b>

There is a total of 13,169 m of stope development required over the LOM. This includes 7,237 m of drifting and 1,123 m of crosscuts in mineralization and 4,809 m of slot raising. A summary of stope development is presented in Table 16.13.

<b>TABLE 16.13 LOM UNDERGROUND STOPE DEVELOPMENT</b>		
<b>Description</b>	<b>Size (W x H) (m)</b>	<b>Length (m)</b>
Drifts	4.0 x 4.0	7,237
Crosscuts	4.0 x 4.0	1,123
Slot Raises	2.0 x 2.0	4,809
<b>Total Stope Development</b>		<b>13,169</b>

In summary there is a total 26,583 m of mine and stope development completed over the LOM. A longitudinal projection of the proposed mine workings is shown in Figure 16.2.

**FIGURE 16.2 UNDERGROUND MINE LONGITUDINAL PROJECTION**





## 16.6 ACCESS RAMP FROM SURFACE

Access to the Deposit would be via a 5.5 m high by 5.0 m wide -15% ramp from surface for a vertical depth of 275 m from the 1,325 m L elevation to the 1,050 m L elevation. Portal construction is estimated to take place during the 4<sup>th</sup> month. This development is part of and classified as mine development.

Excavation of the ramp will be completed by a contractor at an average rate of 6 mpd, down, and 5 mpd, up. The 2,881 m long ramp is scheduled to be completed during the 17<sup>th</sup> month, LOM. This ramp development includes a 15% allowance for miscellaneous development including remuck bays, safety bays, etc. This access ramp will allow all men, construction materials, equipment and excavated material to travel between levels and sublevels, as well as to and from surface.

Details of the main ramp development schedule are presented in Table 16.14.

Level	Length (m)	Waste Tonnes (t)	Month	
			Start	Finish
Portal – 1175l	789	54,237	16.0	20.3
1150l - 1175l	194	13,346	20.5	21.5
1125l - 1150l	194	13,346	21.7	22.8
1100l - 1125l	194	13,346	23.0	24.1
1075l - 1100l	194	13,346	24.4	25.4
1050l - 1075l	194	13,346	25.7	26.8
1187l - 1200l	151	10,357	20.3	21.3
1200l - 1225l	194	13,346	21.4	10.7
1250l - 1275l	194	13,346	12.5	25.8
1275l - 1300l	194	13,346	26.1	27.3
1300l - 1325l	194	13,346	27.5	28.6
<b>Total</b>	<b>2,881</b>	<b>198,052</b>	<b>16.0</b>	<b>28.6</b>

## 16.7 MINE DEVELOPMENT IN WASTE

All excavations in waste rock are classified as mine development. There is a total of 10,534 m of mine level development over the LOM. This excludes 2,881 m of main ramp mine development and miscellaneous ramp development. A summary of the mine development schedule is presented in Table 16.15.

**TABLE 16.15**  
**LOM MINE LEVEL DEVELOPMENT SCHEDULE**

Level	Description	Length (m)s	Tonnes (t)	Month	
				Start	Finish
1325L	Internal ramp/sump/FW Drifts	109	3,800	115.8	116.3
	Ventilation Crosscuts	121	2,363	116.3	116.8
	Ventilation Raises	58	835	116.8	117.5
1300L	Access Drift/ Crosscut	28	1,925	27.4	27.6
	Internal ramp/sump/FW Drifts	221	7,680	114.8	119.6
	Ventilation Crosscuts	194	3,803	114.9	117.0
	Ventilation Raises	107	1,536	114.9	115.4
1275L	Access Drift/ Crosscut	39	2,681	25.8	26.1
	Internal ramp/sump/FW Drifts	99	3,440	99.8	101.0
	Ventilation Crosscuts	106	2,070	99.1	101.6
	Ventilation Raises	75	1,080	99.3	101.9
1250L	Access Drift/ Crosscut	47	3,231	24.3	24.6
	Internal ramp/sump/FW Drifts	396	13,760	67.0	76.3
	Footwall Crosscuts	294	10,240	67.7	69.1
	Ventilation Crosscuts	375	7,335	72.5	77.8
	Ventilation Raises	86	1,238	72.9	78.2
1225L	Access Drift/ Crosscut	32	2,200	22.8	23.0
	Internal ramp/sump/FW Drifts	1,072	37,280	34.1	75.4
	Footwall Crosscuts	596	20,720	40.8	42.8
	Ventilation Crosscuts	45	878	43.5	76.9
	Ventilation Raises	132	1,901	43.6	77.7
1200L	Access Drift/ Crosscut	28	1,925	21.3	21.5
	Internal ramp/sump/FW Drifts	1,143	39,760	21.5	47.6
	Footwall Crosscuts	299	10,400	22.3	23.7
	Ventilation Crosscuts	184	3,600	27.4	33.2
	Ventilation Raises	105	1,411	27.6	33.8
1175L	Access Drift/ Crosscut	38	2,613	20.3	20.5
	Internal ramp/sump/FW Drifts	925	32,160	20.5	36.9
	Footwall Crosscuts	260	9,040	21.3	22.6
	Ventilation Crosscuts	198	3,870	24.7	30.6
	Ventilation Raises	103	1,483	25.0	30.0
1150L	Access Drift/ Crosscut	30	2,063	21.6	21.8
	Internal ramp/sump/FW Drifts	603	20,960	34.1	43.7
	Footwall Crosscuts	271	9,440	34.8	36.1
	Ventilation Crosscuts	117	2,295	37.9	40.5
	Ventilation Raises	92	1,325	38.0	41.0
1125L	Access Drift/ Crosscut	45	3,094	22.8	23.1
	Internal ramp/sump/FW Drifts	307	10,680	91.9	96.0
	Ventilation Crosscuts	141	2,768	91.6	94.5
	Ventilation Raises	95	1,368	91.9	95.0

<b>TABLE 16.15</b>					
<b>LOM MINE LEVEL DEVELOPMENT SCHEDULE</b>					
<b>Level</b>	<b>Description</b>	<b>Length (m)s</b>	<b>Tonnes (t)</b>	<b>Month</b>	
				<b>Start</b>	<b>Finish</b>
1100L	Access Drift/ Crosscut	51	3,506	24.1	24.4
	Internal ramp/sump/FW Drifts	158	5,480	94.0	95.3
	Ventilation Crosscuts	44	855	94.7	95.4
	Ventilation Raises	72	1,037	94.7	95.6
1075L	Access Drift/ Crosscut	53	3,644	25.5	25.8
	Internal ramp/sump/FW Drifts	489	17,000	115.6	122.6
	Ventilation Crosscuts	38	765	115.7	117.1
	Ventilation Raises	62	864	115.8	117.3
1050L	Access Drift/ Crosscut	54	3,713	26.8	27.1
	Internal ramp/sump/FW Drifts	155	5,400	128.0	130.4
	Ventilation Crosscuts	63	1,238	127.6	128.7
	Ventilation Raises	80	1,152	127.8	128.9
<b>Total</b>		<b>10,534</b>	<b>334,902</b>	<b>20.3</b>	<b>128.9</b>

## 16.8 STOPE DEVELOPMENT IN MINERALIZATION

All development in mineralization that produces process plant feed is classified as stope development. Stope development includes drifts, crosscuts and slot raises in mineralized material. Stope development will start on the 1,175 m L during the 24<sup>th</sup> month in the transverse longhole stoping area. Once all longhole stope development has been completed, stope development crews will move to the 1,200 m L and proceed to develop all levels and sublevels.

There is a total of 13,169 m of level and sublevel stope development, LOM. A summary of the stope development schedule is presented in Table 16.16.

<b>TABLE 16.16</b>					
<b>LOM STOPE DEVELOPMENT SCHEDULE</b>					
<b>Level</b>	<b>Description</b>	<b>Length (m)</b>	<b>Tonnes (t)</b>	<b>Month</b>	
				<b>Start</b>	<b>Finish</b>
1325L	Drift	168	6,828	115.0	117.2
1300L	Drift	528	20,000	113.0	118.7
	Slot Raise	336	3,414	117.0	140.3
1275L	Drift	567	22,243	97.0	102.5
	Slot Raise	357	3,627	118.0	136.8
1250L	Drift	568	23,084	49.6	76.8
	Crosscut	198	8,047	69.1	70.4
	Slot Raise	504	5,121	99.6	122.3
1225L	Drift	665	23,559	44.2	76.2
	Crosscut	338	13,736	44.7	46.5

Level	Description	Length (m)	Tonnes (t)	Month	
				Start	Finish
1200L	Slot Raise	1,050	10,668	77.3	120.8
	Drift	1,198	44,348	25.7	39.8
	Crosscut	232	9,428	23.7	25.2
	Slot Raise	672	6,828	56.3	79.0
1175L	Drift	926	35,659	24.0	34.1
	Crosscut	214	8,697	22.6	24.0
	Slot Raise	714	7,254	29.5	58.6
1150L	Drift	740	28,491	37.0	44.0
	Crosscut	141	5,730	36.1	37.0
	Slot Raise	651	6,614	38.4	83.4
1125L	Drift	644	25,176	90.3	97.0
1100L	Drift	204	7,597	94.0	94.8
	Slot Raise	252	2,560	96.1	114.9
1075L	Drift	620	21,623	115.0	124.2
	Slot Raise	147	1,494	119.7	131.6
1050L	Drift	409	13,777	127.0	131.1
	Slot Raise	126	1,280	129.9	137.6
<b>Total</b>		<b>13,169</b>	<b>366,883</b>	<b>23.7</b>	<b>140.3</b>

## 16.9 STOPE PRODUCTION SCHEDULE

Transverse and longitudinal longhole, and C&F stoping all start during the 14<sup>th</sup> month. Transverse, C&F and longitudinal longhole stope production will end during the 100<sup>th</sup>, 123<sup>rd</sup> and 127<sup>th</sup> month, respectively. A summary of the LOM stoping schedule is presented in Table 16.17.

Level	Mining Method	Tonnes (t)	Au (g/t)	Ag (g/t)	Month	
					Start	Finish
1300L	Longitudinal	123,700	5.54	19.02	117.2	138.2
1275L	Longitudinal	202,996	4.41	18.81	118.2	137.2
	C&F	14,515	7.42	42.08	118.7	121.6
1250L	Longitudinal	166,984	7.24	42.80	100.9	124.7
	Transverse	142,593	5.06	21.51	99.8	110.0
1225L	Longitudinal	354,789	4.63	22.90	77.5	122.8
	Transverse	281,329	7.59	38.14	77.5	93.3
	C&F	24,498	3.86	13.38	92.9	97.7
1200L	Longitudinal	221,551	4.64	22.37	56.5	83.0
	Transverse	197,978	7.21	59.51	56.5	76.3

<b>TABLE 16.17</b>						
<b>LOM STOPE PRODUCTION SCHEDULE <sup>1,2</sup></b>						
<b>Level</b>	<b>Mining Method</b>	<b>Tonnes (t)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>	<b>Month</b>	
					<b>Start</b>	<b>Finish</b>
1200L	C&F	26,620	2.91	11.12	57.4	62.7
1175L	Longitudinal	310,923	4.44	18.97	29.7	59.2
	Transverse	208,628	6.78	56.96	25.4	51.1
	C&F	28,491	6.74	7.65	25.8	37.3
1150L	Longitudinal	334,320	5.08	19.84	38.6	86.3
	Transverse	161,557	5.38	30.99	38.0	67.7
	C&F	10,758	2.39	4.31	38.8	40.3
1100L	Longitudinal	100,622	4.12	18.29	96.3	116.2
	C&F	6,665	5.26	4.05	94.5	95.8
1075L	Longitudinal	36,390	3.39	27.26	119.9	132.1
	C&F	42,509	4.15	22.56	116.3	123.2
1050L	Longitudinal	67,027	2.67	27.56	130.1	139.1
	C&F	20,106	4.15	37.84	128.0	131.6
<b>Total Stopping Mined</b>		<b>3,085,547</b>	<b>5.39</b>	<b>28.95</b>	<b>25.4</b>	<b>139.1</b>

*Note: (1) Table 16.17 does not include development and slot raise mineralization.*

*(2) Longitudinal= Longitudinal Longhole, Transverse= Transverse Longhole, C&F= Cut and Fill.*

## 16.10 MANPOWER

An estimated 70 Company personnel will be required on a daily basis; including 26 site administrative staff, 9 underground mine staff and 35 underground mine labourers. A summary of manpower requirements is presented in Table 16.18 and does not include contractor's manpower requirements.

<b>TABLE 16.18</b>	
<b>SITE MANPOWER REQUIREMENTS</b>	
<b>Description</b>	<b>Manshifts/Day</b>
<b>Site Administration</b>	
General Manager	1
Administration Manager	1
Safety & Security Officer	1
Purchasing, Logistics & Concentrate Sales	1
Security Team	3
Secretary / Receptionist	2
Environmental Officer	1
Accounting & Time Keeping	2
IT Support	1
Warehouse	2

**TABLE 16.18  
SITE MANPOWER REQUIREMENTS**

Description	Manshifts/Day
Clerk	2
Labourer	2
Equipment Operators	2
Mechanic	1
Electricians	1
Carpenter/Repair man	1
Dry Man / Janitor	2
<b>Subtotal</b>	<b>26</b>
<b>Mine Staff</b>	
Mine Superintendent	1
Shift Foreman	2
Chief Engineer	1
Mine Engineer/Rock Mechanics/Mine Planner	1
Ventilation/Surveyor Technician	1
Surveyor Helper	1
Chief Geologist	1
Geological Technician	1
<b>Subtotal</b>	<b>9</b>
<b>Mine Labour</b>	
Crew Leader	3
Miner	8
LHD / Truck Driver	9
U/G Backfill Operators	2
U/G Mechanics	5
Electricians	2
Services Leader	1
Grader Operator	1
Pump / Construction Man	1
Mine Labourer	2
Service Truck Operator	1
<b>Subtotal</b>	<b>35</b>
<b>Total Labour</b>	<b>70</b>

*Note: Table 16.18 does not include contractor's manpower.*

## **16.11 GEOTECHNICAL AND HYDROGEOLOGICAL CONSIDERATIONS**

No geotechnical studies have been completed for this PEA. The Authors have assumed, since this is a relatively shallow deposit, that minimal ground support will be required for the underground openings. Rockbolts (1.5 m) will be installed on the stope backs on a 2 m by 2 m pattern. For development headings swellex bolts (2.4 m) will be installed on the walls and back on a 1.2 m by 1.2 m pattern, with welded wire mesh screen.

No hydrogeological studies have been completed for this PEA. Water inflow to the underground workings is unknown, however, is not anticipated to be so large that it could not be handled with a moderate pumping system.

## **16.12 BACKFILL**

No backfill studies have been completed for this PEA. The Authors have suggested that since a process plant will be required on site and tailings will result, cemented paste backfill will be produced and placed in the mined-out stopes. In addition, development waste rock will be used as backfill, when available. Some of the advantages of paste backfill are:

- No pumping of excess backfill water;
- Voids totally filled;
- No mobile equipment required to place backfill;
- Minimizes tailings storage capacity on surface; and
- Paste backfill is homogeneous.

A summary of paste backfill requirements is presented in Table 16.19.

**TABLE 16.19**  
**ANNUAL PASTE BACKFILL REQUIREMENTS**

<b>Item</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Mineralization In-situ (t)	10,771	343,150	365,250	365,250	365,250	365,250	365,250	365,250	365,250	365,250	176,509	3,452,430
In-situ Volume (m <sup>3</sup> )	4,240	135,098	143,799	143,799	143,799	143,799	143,799	143,799	143,799	143,799	69,492	1,359,224
Paste Backfill to Stopes (t)	7,845	249,932	266,029	266,029	266,029	266,029	266,029	266,029	266,029	266,029	128,560	2,514,565



## 16.13 VENTILATION

A summary of the estimated underground ventilation requirements for the underground mobile equipment is presented in Table 16.20.

<b>TABLE 16.20 UNDERGROUND VENTILATION REQUIREMENTS</b>						
<b>Equipment</b>	<b>Qty</b>	<b>Engine Power (HP)</b>	<b>Installed Power (HP)</b>	<b>Overall Utilization (%)</b>	<b>HP for Ventilation (HP)</b>	<b>Ventilation Required (CFM)</b>
Sandvik LH307 3.2 m <sup>3</sup> LHD	4	201	804	65%	523	49,582
Sandvik TH320 20 t Haul Truck	6	322	1,930	65%	1,255	118,996
Top Hammer Drill (DL311-7)	2	173	346	10%	35	3,281
MCU 2700 Blasting Tractor	2	75	150	20%	30	2,845
Sandvik DD421 Devel Jumbo - 2 Boom	2	241	483	10%	48	4,577
Getman Scissor Lift / Boom Truck	4	173	692	25%	173	16,407
Toromont Cat Grader M135H	2	135	270	25%	68	6,402
Getman Personnel Carrier	2	173	346	25%	87	8,204
Mechanics / Electrician Vehicle	3	128	384	25%	96	9,105
Staff Toyota	7	128	896	25%	224	21,244
Subtotal	34	1,749	6,301		2,537	240,642
Minimum air required (Allow 20% for leakage and short-circuiting) (CFM)						288,771
Say (CFM)						288,800

*Note: Table 16.20 Includes Contractor Equipment.*

The input parameters used for mine air heating are presented in Table 16.21.

<b>TABLE 16.21 INPUT PARAMETERS FOR MINE AIR HEATING</b>		
<b>Parameter</b>	<b>Value</b>	<b>Units</b>
Assume Air is Heated to	35	degrees Fahrenheit
from	-40	degrees Fahrenheit (for sizing the heater)
Air Pressure, P	14.16	psi (absolute)
Specific Heat of Air	0.24	BTU/lb°R (BTU/lb°F)
Assume Airflow of	288,800	cfm (airflow of heated air)
Heater Efficiency	95	%

<b>TABLE 16.21</b>		
<b>INPUT PARAMETERS FOR MINE AIR HEATING</b>		
<b>Parameter</b>	<b>Value</b>	<b>Units</b>
Heating Value of Propane	110,000	BTU/ imperial gallon
Total degree days	1,374	Degree Days
1 BTU raises the temperature of 1 cu. ft. of air by	53.94	degrees Rankine (Fahrenheit)
Air Density	0.0772	lb/ft <sup>3</sup> (Density of air at fan intake)

#### **16.14 MINE UNDERGROUND AND ASSOCIATED SURFACE SUPPORT EQUIPMENT**

An estimated 38 pieces of underground mobile equipment will be required, LOM, used mainly for stope drilling, blasting, loading, backfilling and haulage. In addition, an estimated 20 pieces of surface mobile equipment will be required, LOM, to support the underground operations. A list of both mobile, miscellaneous underground and surface equipment, and infrastructure is presented in Table 16.22 and does not include contractor equipment.

<b>TABLE 16.22</b>		
<b>MINE UNDERGROUND AND SURFACE SUPPORT EQUIPMENT</b>		
<b>Type</b>	<b>Item</b>	<b>Qty</b>
<b>U/G Mobile Equipment</b>	Sandvik DD422iE Prod Jumbo - 2 Boom	2
	Top Hammer Drill (DL311-7)	5
	Getman Scissor Lift / Boom Truck	3
	Sandvik LH307 3.2 m <sup>3</sup> LHD - Haulage	4
	Sandvik TH320 20 t Haul Truck C/W Ejector Box	8
	MCU 2700 UG Blasting Tractor	2
	Mechanics / Electrician Vehicle	2
	Grader	2
	Toyota Pick Ups	7
	Getman Personnel Carrier	2
	Alimak	1
	<b>Subtotal</b>	<b>38</b>
<b>Misc. U/G Equipment</b>	Stoppers	4
	Jacklegs	4
	Construction Hand Tools & Equipment	1
	U/G Ventilation Fans	30
	Heading Pumps	3
	Main Dewatering Pumps	3
	Main Electric Substations	2

**TABLE 16.22**  
**MINE UNDERGROUND AND SURFACE SUPPORT EQUIPMENT**

<b>Type</b>	<b>Item</b>	<b>Qty</b>
	Portable Electric Substations	2
	<b>Subtotal</b>	<b>49</b>
<b>Surface Mobile Equipment</b>	Motor Grader	2
	FEL - Cat 980G	2
	Flatbed Truck - Sterling (Used)	2
	Garbage Truck w/Dumpsters (used)	2
	Bus - 30 Person	2
	Ambulance	2
	Fire/Rescue Truck (PT2 1200)	2
	Pickup Truck - Ford F150	4
	SUV	2
	<b>Subtotal</b>	<b>20</b>
<b>Surface Support/Infrastructure</b>	Shop Equipment & Tools	Lot
	Warehouse Supplies and Parts	Lot
	Cap Lamps	75
	Safety Gear	75
	Other Safety Gear	Lot
	Mine ERT	1
	Recondition Surface Ventilation Fans	2
	Compressors	2
	Electric Power Line, Substation, Switchgear	Lot
	Standby Generator(s)	3
	Paste Backfill Plant	1
	Waste Rock Co-Disposal Basin (m <sup>3</sup> )	100,000
	Site Road Construction (km)	10
	Site Road Upgrades (km)	10
	Ventilation Raise Infrastructure	2
	Main Gate Building	1
	Surface Mine Shop & Warehouse	1
	Shop Equipment and Tools	Lot
	Office Building	1
	Office Furniture/ Equip, Computers, Eng Equip	Lot
	Environmental Department Equipment	Lot
	Dry	1
	Dry Equipment	Lot
Surface Parking Areas (m <sup>2</sup> )	3,500	

<b>TABLE 16.22</b>		
<b>MINE UNDERGROUND AND SURFACE SUPPORT EQUIPMENT</b>		
<b>Type</b>	<b>Item</b>	<b>Qty</b>
	Laydown Yard (m <sup>2</sup> )	1,000
	Fuel Farm	Lot
	Lube Oil Storage	2
	Explosives Magazines	2
	Yard piping	Lot
	Fire System	Lot
	Potable Water Storage Tank & Piping	Lot
	Potable Water Treatment Plant	Lot
	Site Communications	Lot
	Water Management Pond- Buildings & Site run-off	Lot
	Medical Centre Equipment	Lot

*Note: Table 16.22 does not include contractor equipment.*

### **16.15 UNDERGROUND INFRASTRUCTURE**

A summary of underground infrastructure requirements is presented in Table 16.23.

**TABLE 16.23**  
**UNDERGROUND INFRASTRUCTURE REQUIREMENTS**

<b>Description</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Yr 11</b>	<b>Total</b>
Underground Shops			1				1					2
Upper Pump Station	1											1
Sumps		1		2		2		2				7
Mine Air Heaters		1		1		1		1				4
Refuge Stations	1	1	1	1		1		1				6
Paste Backfill Distribution System		1										1
Latrines	1	1	1	1		1		1				6
Powder Magazines	1	1	1	1		1		1				6
Detonator Magazines	1	1	1	1		1		1				6
Ventilation Walls and Regulators		5	5	5	5	5	5	5	5	5	5	50
<b>Total</b>	<b>5</b>	<b>12</b>	<b>10</b>	<b>12</b>	<b>5</b>	<b>12</b>	<b>6</b>	<b>12</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>89</b>

## **17.0 RECOVERY METHODS**

A summary of available relevant metallurgical testwork on the Shovelnose Mineral Resource has been presented in Section 13 of this Report. While the extent of data from test processes is minimal, it is apparent that a high percentage of gold and silver can be recovered using conventional processes. The metallurgical tests emphasized the production by flotation of a rougher gold-silver sulphide concentrate plus the cyanidation of flotation tails. “Recoveries”, a measure of gold and silver reporting to a rougher flotation concentrate, plus the cyanide extractions, reported values exceeding 90%. An optional process that was tested was the direct cyanidation of the “whole mineralized feed”. This resulted in average extraction slightly exceeding 89%.

A third process option which could be considered is the production of a cleaned gold-silver-sulphide flotation concentrate, followed by fine grinding and intensive cyanide leaching of this concentrate. The flotation tails would be subject to conventional leaching. The gold and silver would be recovered from clarified solutions from concentrate leaching and from float tails leaching by a Merrill Crowe process. A doré (gold-silver) product would be produced.

While the Mineral Resource is relatively high grade, the production of a gravity concentrate was shown to be ineffective. It was indicated that the gold content is not refractory and is finely distributed. Relatively fine grinding of flotation feed and very fine grinding of the flotation concentrate is expected to be effective in achieving high percentages of gold and silver extraction.

The following process description is an outline that assumes the third option, fine grinding and intense cyanide leaching of flotation concentrate and standard leaching of flotation tails.

### **17.1 PROCESS PLANT FEED HANDLING**

Mineralized material will be hauled to surface with underground mine trucks. The material will be stockpiled on surface according to grade measured by mine planning and grab sampling. The ROM material will be blended by a front-end loader according to production grade planning and fed to a surface-installed jaw crusher with a 50-100 t crusher feed bin below a 300 mm (12 in) grizzly. The crusher is anticipated to be set at 80 to 100 mm (3 to 4 in).

The crushed material will be delivered to a covered stockpile of approximately 1,500 t capacity. The mill feed will be drawn from this stockpile by at least three feeders. Due to the natural segregation which commonly occurs by size in a conical stockpile, a propane-fueled loader will be employed to homogenize the stockpile.

The crushing facility would operate 60 to 75% of available time. Tonnage will be measured by crusher discharge and stockpile withdrawal belt weightometers combined with the results of grab sampling for moisture determination.

### **17.2 GRINDING**

There are three grinding stages to be considered in the overall process. For process concept consideration, the primary and secondary grinding steps are suggested to be a conventional SAG

and ball mill combination (“SABC”). With a potential primary grind size  $P_{80}$  of 150  $\mu\text{m}$ , a SAG size of approximately 7.5 m diameter by 4 m long and a ball mill of 5 m diameter by 9 m long would be adequate. The only grind performance data available from testwork is a Bond Work Index (“BWi”) which was determined to be 20 kWh/t, a moderately high value. Additional grinding and attrition characteristics are needed to provide a more precise estimate of grinding circuit parameters. Based on the Author’s experience, the steel grinding ball consumption could be in the order of 3-4 kg/t and grinding energy draw in the range of 25 kWh/t.

A provision will be considered for the SAG mill to be equipped in the future with a pebble circuit where +20 mm pebbles are screened from the SAG discharge and crushed and recycled to the SAG mill feed. Pebble return is initially expected to be low, at less than 5% of feed. At this low rate, a pebble crusher (a short-head cone crusher) is optional and could be installed later to increase the grinding circuit capacity. A single ball mill will be in a closed circuit with two banks of cyclones in a combined array (one operating, one standby) with cyclone overflow sent to flotation following automatic two-stage slurry sampling for mineral and metal content.

The third grinding component will be a concise circuit to finely grind the flotation concentrate. A ball mill could be used for this task, however, an attrition mill such as a tower mill could be more effective.

## **17.3 PRODUCTION AND PROCESSING OF A GOLD-SILVER-SULPHIDE CONCENTRATE**

### **17.3.1 Au-Ag-Sulphide Flotation**

A flotation concentrate is proposed to be made to accumulate a significant proportion of the gold and silver that is associated with sulphides. Rougher float tests conducted at grind size of  $P_{80}$  75  $\mu\text{m}$  indicated average recoveries of 76% for gold and 72% for silver in a concentrate representing between 7.4 and 13% weight of feed. This concentrate could be dewatered and prepared for sale, or be subject to upgrade by cleaning. The absence of cleaner test data makes the degree of weight and grade improvements uncertain. The test cleaning of rougher concentrate is strongly recommended for the conceptual design of flotation and subsequent process stages, whether the concentrate is sold or processed by cyanide leaching on site.

#### **17.3.1.1 Flotation Concentrate Processing**

As opposed to marketing the flotation concentrate, the on-site extraction of gold and silver from the flotation concentrate is conceptually considered for the Project. Based on preliminary evaluations of gold deportment outlined in testwork and the Author’s experience, fine grinding and intensive leaching of the flotation concentrate is considered to be a promising strategy for the Shovelnose Mineral Resource. This consideration needs to be confirmed with relevant testwork.

The flotation concentrate would be thickened in a high-rate thickener and ground to a fine size in a suitable machine, a tower mill as noted above. Thickening to 45 to 50% solids would be considered before grinding. The tower mill discharge would be subject to grind size management using a combination of cyclones and fine screens.

The ground flotation concentrate would be subject to “intense” leaching under high sodium cyanide concentrations, e.g., 1.5 to 2% solution with strong oxidation conditions (peroxide). The intense leaching system is either batch or continuous, with continuous being the preferred strategy. The leaching would be performed in multi-stages of enclosed, stirred vessels. The pregnant leach solution (“PLS”) would be recovered by filtration by plate-and-frame filters (two in parallel). The filter cake would be washed twice with cyanide-containing barren solution. The diluted (due to filtration washing) PLS would be sent to a proposed on-site Merrill Crowe circuit.

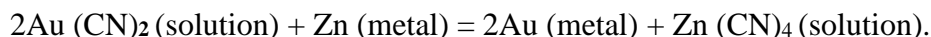
The filtered tailings could be treated for cyanide destruction and separately disposed. Or, subject to test confirmation for potential acid rock drainage and metal leaching impacts, and physical impacts on flotation tailings leaching, the filtered sulphide tailings could be re-slurried and combined with the flotation tailings leach feed. This would permit recovery of residual, soluble gold and silver in the leached sulphide concentrate and permit efficient cyanide destruction in both tailings streams.

#### **17.4 FLOTATION TAILINGS LEACHING**

Sulphide flotation tailings containing approximately 25% of the gold and silver present in process feed, and with a significant residual gold content, approximately 2.5 g/t Au, would be subject to a standard cyanide leaching approach. Oxidation would be provided by air injection into the first leach vessels, or if confirmed by test results, by oxygen injection. A series of stirred leach vessels followed by multi-stage counter-current decantation (“CCD”) is a reasonable leach and PLS recovery flowsheet. Gold and silver recovery from the PLS would be achieved in a proposed Merrill Crowe circuit. Merrill Crowe is the preferred process when the ratio of silver to gold is 5:1 or greater (as per the Mineral Resource), and the concentrations of arsenic and antimony are low.

#### **17.5 MERRILL CROWE CIRCUIT**

The Merrill Crowe technology is a long proven, simple and efficient process which is capable of handling a wide range of gold and silver concentrations in a PLS. Merrill Crowe processing is composed of solution clarification, deaeration, followed by gold and silver precipitation with zinc dust. The gold component of the precipitation process is summarized by the following equation:



A precious metal precipitate is recovered by pressure filtration. The precipitate is smelted to produce a slag and a metal (doré) product. The Merrill Crowe, foundry and doré handling will be contained in a secure facility attached to the process plant.

The barren solution generated by the Merrill Crowe process will provide process water for grinding, leaching and concentrate filter washing. The recycling of cyanide-containing barren solution to grinding will result in some gold and silver extraction, the degree of which will be accounted for by solution and slurry sampling and assaying.



## 17.6 TAILINGS MANAGEMENT

A significant portion of the 1,000 tpd leached tailings will be used as mine paste backfill. The balance will be dry-stacked and placed in a designed storage facility. For both, a high degree of cyanide destruction will be needed for mine worker safety and to meet environmental criteria.

Various chemical methodologies are available for cyanide destruction (e.g., INCO SO<sub>2</sub>-air, hydrogen peroxide, Caro's Acid and alkaline chlorination (sodium hypochlorite)). The selected cyanide destruction method would be applied to the final CCD tails in advance of dewatering for backfill preparation and dry-stack surface storage. Subject to test confirmation, there may be economical justification for cyanide recovery and recycling this cyanide to leach feed.

Over 70% of the leached tailings are intended to be used for mine paste backfill. Subject to test confirmation, the processes to be applied to prepare tailings for paste backfill production could include removal of fines by cycloning and dewatering the remaining slurry to 12 to 15% moisture by vacuum filtration. Cycloning is likely needed because of fine grinding needed to expose the gold content. Adjusting the moisture content and the addition of Portland cement would follow in advance of the paste backfill being pumped underground.

The 30% residual tailings fraction would be dewatered to approximately 10% moisture by pressure filtration for transport by truck to the dry-stack tailings storage facility.

## 17.7 TEST REQUIREMENTS FOR PROCESS PLANT DESIGN

A significant amount of test data is required for confirmation of a process plant design and potential operation. The most important features include:

- Crushing, grinding and abrasion data;
- Gold deportment – association and particle size;
- Confirmation that the production and intense leaching of a flotation concentrate and leaching of flotation tails, as opposed to an “all mineralization” leaching approach is economically preferred;
- Selection of flotation concentrate grind size and grinding method;
- Thickening and filtration rates and rheology of slurries and filter cakes;
- Cyanide destruction methodology and/or cyanide recovery parameters; and
- Determination of process stages for paste backfill preparation.

These test requirements suggest the need for the sourcing of a significant quantity (1-2 t) of fresh mineralized material and the performance of bench-scale pilot testing.

## 18.0 PROJECT INFRASTRUCTURE

### 18.1 CURRENT INFRASTRUCTURE

The Project is located 30 km southwest of Merritt and benefits from excellent access to regional resources and infrastructure in the region, due to the proximity to Coquihalla Highway 5. The immediate Project site is situated on the south side of Shovelnose Mountain towards the Brook Creek and Spearing Creek Valley. The Project site had limited infrastructure in place at the time of the Author's engineering site visit on July 3, 2023. The immediate Project site is defined as the area of the access road up to the proposed plant site, the potential power supply line, and the areas surrounding the proposed mine portal, vent raises, site roads, waste rock storage area, dry stacked tailings storage areas and water collection and treatment areas.

The Project is a greenfield site and has no direct mining related infrastructure in place. The infrastructure currently in place consists of a well-developed network of forestry access roads of variable conditions, and a powerline corridor that leads to a radio/cellular tower installation on Shovelnose Mountain. This infrastructure is not owned by the Company.

Existing forestry access roads lead to the Project site and allow access to all relevant locations of the Project. The primary access road to the Project site would be via the Coldwater Road and the Shovelnose South Road. Site access from at least two other sides via existing forest access roads should be possible in case of emergency egress. The existing roads are primarily built for logging and will need to be upgraded for permanent year-round use for the mining operation. Upgrades of the roads will include grade adjustments, widening of some sections, rockfall and avalanche protections where needed and applicable, improved drainage ditches and culverts, regular turn-out sections, protections on steep slope sections and increased signage at regular intervals.

The existing powerline branching off from the powerline to Brookmere and leading up to Shovelnose Mountain could be considered as the preferred option to connect grid power to the Project area. The powerline to Shovelnose Mountain is approximately 6.5 km long and passes the proposed process plant site within one km. Some form of shared use agreement and upgraded technical capacities for the line could be considered. Westhaven is encouraged to pursue this option with the current owners. A new powerline from the Coldwater Road near Brookmere would be approximately 3.5 km long. A detailed review of power line capacities to supply the site is recommended.

Cell phone signal coverage at the Project site is very good. A Telus and Rogers antenna as well as a radio repeater station operated by Kamloops Communications are installed on Shovelnose Mountain.

The proposed Project site infrastructure is entirely located within the watershed of the southeast draining Spearing Creek drainage, part of the Similkameen watershed. No Project water should flow towards the northwest flowing Brooks Creek and Coldwater River which are part of the Nicola watershed drainage system.

The commute to the Project site from Merritt will be approximately 45 minutes. Besides Merritt there are several other small communities closer to the Project site that could provide residence

for employees or contractors. Therefore, the site operation is planned without a camp facility. Only emergency lodging should be incorporated in the process plant and office complex.

## **18.2 PLANNED INFRASTRUCTURE**

Major infrastructure for the Project will include:

- Underground mine;
- Process plant and laboratory with main substation and electrical power distribution;
- Tailings management facility; and
- Waste rock storage facility.

Infrastructure to be installed by the Company:

- Main access road and gatehouse;
- Administration building for senior management, general and administration staff, technical staff, safety and training staff;
- Mechanical parts warehouse;
- Process plant supplies warehouse;
- Maintenance building with overhead crane for Company mining equipment;
- Personnel change room facility with showers;
- Water and sewage treatment plants; and
- Diesel fuel tank farm and fueling station.

Buildings will be supplied by well water for showers, toilets, etc. whereas drinking water will be bottled.

Items to be installed by the contractors:

- Maintenance building with overhead crane for contract underground mining equipment;
- Bulk explosives storage and magazine;
- Contractor offices; and
- Contractor supplies warehouse.

### **18.2.1 Dry Stacked Tailings Area**

A dry stacked tailings area is envisioned to be located northwest of the proposed process plant site connected via a site road of approximately 3 km length with an elevation lift of between 100 m to 140 m from the process plant site. The dry stacked tailings area will need to be logged, cleared of subsoil, the area will need to be built up to a flat trafficable surface. Drainage ditches will be installed surrounding the storage pad diverting surface runoff away from the storage area. Any runoff water collected from the dry stacked tailings area will be collected and diverted back to the process water circuit of the process plant.

### **18.2.2 Waste Rock Storage Facility**

Mine development waste rock will be used for construction of other site infrastructure wherever possible at the process plant site, access road improvements, dry stack tailings storage facility and water retention facilities.

Any excess waste rock could be stored in placement areas towards the west side of the process plant site or towards the east side of the portal along a flat area of the northeast-facing valley structure.

### **18.2.3 Water Management**

The Project area is dry in general. No significant surface watercourses are located within the vicinity of the site. The streams and creeks in the area are reduced to minimal water flow in the summer and only carry some water flow during spring runoff and rain events. The Coldwater River is not considered to be in the immediate Project area. Any site runoff will be collected and channeled away from the Coldwater River drainage.

Water collection and conservation will be an important aspect of the site operation to reduce the need for external water being supplied. A water collection dyke structure is envisioned in the drainage area of the Upper Spearing Creek, upstream of the access road crossing the Upper Spearing Creek. Water runoff would be collected and pumped from a collection pond (approximate elevation 1,170 m asl) to the process plant at an elevation at approximately 1,300 m asl.

In addition to surface streams and creeks, Westhaven has identified several artisanal drill holes in the Project area that could be used to provide some of the process water. The extent of the waterflow from artisanal wells has not yet been specified.

Detailed water supply and consumption studies will be required to determine the extent of water collection efforts in the Project area. Geotechnical studies of the viability of a water storage facility location will also be required.

### **18.2.4 Explosives Storage**

A surface explosives magazine is envisioned on the Project site located in the valley structure northeast of the proposed portal and process plant site. Several locations along the valley structure appear suitable for a storage location.

## **19.0 MARKET STUDIES AND CONTRACTS**

The doré bars produced at the Project can be expected to have variable gold and silver content and a variable gold to silver ratio, depending mainly on the corresponding gold and silver grades of the feed material being processed at any given time. Over the projected LOM, the Au/Ag doré metal content is expected to be 11% to 19% gold and 81% to 89% silver, averaging 16% gold and 84% silver.

Detailed market studies on the potential sale of gold and silver doré were not completed. Gold and silver doré can be readily sold on many markets throughout the world and the market price can be ascertained on demand. Numerous mining operations produce and sell gold and silver doré, and there is sufficient information available in the public domain or furnished to Westhaven directly from third party refiners or comparable doré producers to use as the basis for the economic analysis.

### **19.1 METAL PRICES AND FOREIGN EXCHANGE**

The Authors used the approximate 24-month (2-year) average monthly trailing metal prices as of June 30, 2023, of US\$1,800/oz Au and US\$22/oz Ag for this PEA. The USD/CAD exchange rate was based on US\$0.76 = CAD\$1.00.

### **19.2 CONTRACTS**

No contracts were entered into at the effective date of this Report for mining, facility operations, refining, transportation, handling, sales and hedging, and forward sales contracts or arrangements pertaining to the Shovelnose Project. It is envisaged that Westhaven would sell any future production through contracts with a refiner, or on the spot market, as applicable. It is expected that when any such contracts are negotiated, they would be within industry norms for projects in similar settings in Canada.

## 20.0 ENVIRONMENTAL STUDIES, PERMITS, AND SOCIAL OR COMMUNITY IMPACTS

The information presented in this section is based largely on information provided by Westhaven and the general requirements for consultation, environmental assessment and mine permitting in British Columbia, Canada.

### 20.1 OVERVIEW

The Shovelnose Project is in the traditional territory and ancestral lands of the Niaka’pamux First Nation (“NFN”). Westhaven has engaged in preliminary consultations and discussions with the Niaka’pamux Nation Tribal Council (“NNTC”) since 2017. Westhaven has also engaged in ongoing dialogue, consultations and discussions with representatives of the Citxw Nlaka’pamux Assembly (“CNA”), individual Nlaka’pamux bands, local stakeholders and other agencies. These consultations and discussions have been wholly related to exploration of the Skoonka and Shovelnose properties. Esh-Kn-Am, a cultural management services consultant based in Merritt, has assisted with these activities.

The Shovelnose Project area and its distance to southwestern BC communities is shown in Figure 4.1. The Property is located near the southern extension of the Spences Ridge Gold Belt and is 30 km south of Merritt. The Property is accessible from BC Coquihalla Highway 5 and a series of logging roads.

### 20.2 SITE ENVIRONMENTAL CHARACTERISTICS

The Shovelnose site, with example vegetation and physical profile is shown in Figure 20.1.

**FIGURE 20.1** SHOVELNOSE SITE



*Source: Westhaven (website, December 2021)*

As shown, the area has significant vertical relief and has been extensively logged. Except for the existence of some exploration trenching and forestry roads, the site can be categorized as “greenfield”.

The permitting, environmental assessment and approval considerations are anticipated to be extensive. Initial considerations for significant tonnage of mining and processing operations suggest that the transport of mineralized material from mine to process plant would be a short distance. The locations for the storage of waste rock and tailings would largely be determined by local geography and minimization of environmental risk. Tailings management options will be assessed in engineering and environmental studies, with ‘dry stack’ deposition at an appropriately engineered facility identified as an attractive technology.

### **20.3 ENVIRONMENTAL ASPECTS OF A POTENTIAL MINING PROJECT**

Baseline studies have been initiated by Westhaven. These include surface and groundwater studies, wildlife and species at risk identification, vegetation inventory and vitality, and climate history. The latter, climate and the effects of anticipated climate changes, will be expected to receive special attention, partially due to the climate extremes encountered in southern BC in recent years.

Archeological and cultural site studies will focus on areas that could be affected by the Project: underground mining, a process plant, solid waste and water management, project infrastructure.

The protection of water resources, the long-term storage of mine waste and the protection of the physical environment could be expected to a major focus of an environmental assessment, of permitting, and in many aspects related to social acceptance.

The Project could mine and process 1,000 tpd of mineralized material; a smaller amount of waste rock could be produced and stored on surface. Information will be gained by chemical tests on a wide variety of drill core to determine the potential for acid rock drainage (“ARD”) and/or metal leaching (“ML”). Isolation and interim treatment of drainage from mine openings, as well as seepage from waste rock and tailings storage facilities will be important aspects of the Project design.

Subject to additional metallurgical process investigations, the mineralized material will either be treated in a mineral process facility by (i) grinding and leaching by well-proven cyanide leach technology, (ii) grinding and froth flotation to produce a marketable concentrate and leaching of the flotation tails, or (iii) finely grind and leaching of a flotation concentrate as well as leaching the flotation tails. Gold and silver will be recovered from pregnant leach solution as a doré in brick form on site. Option (iii) is expected to be the selected processing strategy.

Treated mine water is expected to partially provide the process plant’s water requirements. Tailings and process plant effluent would be treated to remove all residual cyanide and a small portion of the tailings are expected to be “dry stacked” at an acceptable nearby location. The larger portion of the tailings will be used as mine paste backfill.

The Project will be designed for closure. At end of operations, all structures will be removed, and any underground mine openings would be permanently sealed off as tightly as possible. The

mined-out underground openings will be allowed to flood. Subject to hydrological assessments, in the long term no mine water treatment could be anticipated.

## **20.4 ENVIRONMENTAL ASSESSMENT PROCESS**

A first step in the Environmental Assessment (“EA”) process is the preparation of a detailed Project description complete with assessed options, risks and benefits.

The Project would be subject to the BC Assessment Act (“BCEAA”) and the Canadian Environmental Assessment Act – 2012 (“CEAA”). A Harmonized Provincial-Federal EA process is possible and this process could be expected to include working groups composed of provincial and federal agency officials, representatives of the NNTC, other First Nations and local agencies.

The multiple detailed baseline studies will outline current conditions for air, water, hydrology, soil and rock, biology etc.

The BC EA process is administered by the Environmental Assessment Office (“EAO”) of the Ministry of Environment and Climate Change Strategy. In addition to promoting responsible environmental management, interested third parties (e.g., members of the public) can comment on a mining project and request that the Ministry require the proponent to outline specific aspects in an EA.

The BC EA process specifies that larger-scale projects (>75,000 tpa) must undergo an EA, and the issuance of an EA Certificate must precede Project development. The EA must assess potential environmental, economic, social, heritage and potential human health effects of the potential Project. Cumulative impacts created by other mining projects in the area could be a significant consideration.

### **20.4.1 Federal EA Process**

The 1992 Canadian Environmental Assessment Act (“CEAA”) was updated to CEAA 2012 which has recently been updated under Federal Legislation C-69. The updated act includes the earlier definition of what aspects may “trigger” a federal EA. Under CEAA 2012 and C-69, an EA focuses on issues within federal jurisdiction including:

- Fish, fish habitat and other aquatic species;
- Migratory birds;
- Federal lands and effects of crossing interprovincial boundaries;
- Effects on Aboriginal peoples such as their use of traditional lands and resources; and
- A physical activity that is designated by the Federal Minister of Environment that can cause adverse environmental effects or result in public concerns.

One or more of these issues can be expected to be a “trigger” and result in a requirement of an EA under federal legislation for a Project. The EA could be conducted by responsible Federal and/or Provincial Agencies, or by an expert Review Panel appointed by the respective Ministers of Environment.



## 20.5 PERMITTING

The Provincial permit, approval and lease requirements for developing, operating and closing a major mine in British Columbia are extensive. The BC Major Mines Office (“MMO”) coordinates the permitting process by working with BC ministries and agencies, including:

- Ministry of Energy, Mines and Low Carbon Innovation;
- Ministry of Environment and Climate Change Strategy; and
- Ministry of Forests, Lands, Natural Resource Operations and Rural Development.

The MMO also acts as a contact for key permits as well as consultation and collaboration with Indigenous Nations. Example permits and licenses (of many) are:

- Mining Lease;
- Effluent discharge permits;
- Taking of water permits;
- Power line license;
- Permits to construct roads; and
- Permit to construct and operate a worker’s camp and accommodation.

Federal authorizations may include:

- If applicable, Fisheries Act provisions potentially including a Fisheries Habitat Compensation Plan;
- Metal mine effluent specifications for tailings, waste rock facilities and mine water; and
- Permits to manufacture, store and use explosives.

## 21.0 CAPITAL AND OPERATING COSTS

The estimated capital and operating costs related to the potential construction and operation of the Project mining and processing facilities are provided in this section.

All capital and operating cost estimates are shown in Canadian dollars as at Q2 2023, unless otherwise stipulated, and are not adjusted for inflation.

### 21.1 CAPITAL COST ESTIMATES

Capital cost estimates include underground mine development, the process plant construction and commissioning, the purchase of underground mining equipment, underground infrastructure, surface infrastructure, and closure bond/salvage credit, including a 20% contingency allowance. Initial capital costs are estimated at \$142.1M. Sustaining capital costs during the production years are estimated at \$104.9M. The LOM total capital cost of the Shovelnose Gold Project is estimated at \$247.0M. A breakdown of these cost estimates is provided in Table 21.1.

<b>Item</b>	<b>Yr -2</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Mine Development in Waste Rock		18.2	21.6	11.9	2.1	2.5	3.8	4.0	1.4	5.6	2.6		<b>73.8</b>
Process Plant	44.6	22.3		3.3		3.3		3.3		3.3			<b>80.2</b>
Mining Equipment		8.0	12.2	1.9	0.2	1.6	1.7	7.6	1.5	4.6		1.4	<b>40.7</b>
U/G Infrastructure		0.4	2.2	1.1	1.3	0.2	1.3	0.8	1.3	0.2	0.2	0.2	<b>9.1</b>
Surface Infrastructure		45.1	0.2	2.3		0.4	1.6	3.5		0.6			<b>53.6</b>
Closure & Salvage		3.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-17.1	<b>-10.5</b>
<b>Total CAPEX (\$M)</b>	<b>44.6</b>	<b>97.5</b>	<b>36.6</b>	<b>20.9</b>	<b>4.0</b>	<b>8.4</b>	<b>8.7</b>	<b>19.6</b>	<b>4.5</b>	<b>14.6</b>	<b>3.2</b>	<b>-15.6</b>	<b>247.0</b>

*Notes: Table 21.1 includes a 20% contingency; Yr = year.*

Initially process plant construction will start at the beginning of Year -2 and last for 1.5 years to be commissioned in Year -1. The mine contractor's site set-up is scheduled to take three months, at the start of Year -1, followed by one month of portal construction. Main ramp development will start during the fifth month of Year -1. Stope production is scheduled to start during the 14<sup>th</sup> month, in Year 2.

Details of these estimates are provided in the following subsections.

### 21.1.1 Mine Development in Waste Rock

An estimated \$73.8M of capital will be spent on mine development in waste rock. All mine development will be completed by a contractor(s). This includes: the cost of the main ramp; access drifts and crosscuts; internal ramps / sumps / footwall drifts; footwall crosscuts; ventilation raise crosscuts, and ventilation raises. A summary of mine development capital cost estimates is presented in Table 21.2.

<b>TABLE 21.2</b>												
<b>MINE DEVELOPMENT CAPITAL COSTS (\$M)</b>												
<b>Heading</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Main Ramp	12.2	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0
Access Drift/ Crosscuts	1.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Internal Ramp/Sump/ FW Drifts	1.9	8.8	7.2	2.1	0.9	1.4	2.5	0.5	3.3	2.0	0.0	30.6
Footwall Crosscuts	3.0	1.3	3.4	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	9.3
Ventilation Crosscuts	0.0	1.6	0.6	0.0	0.0	1.6	0.7	0.5	1.5	0.3	0.0	6.8
Ventilation Raises	0.0	1.3	0.7	0.0	0.0	0.8	0.8	0.4	0.8	0.4	0.0	5.1
<b>Total Mine Development (\$M)</b>	<b>18.2</b>	<b>21.6</b>	<b>11.9</b>	<b>2.1</b>	<b>2.5</b>	<b>3.8</b>	<b>4.0</b>	<b>1.4</b>	<b>5.6</b>	<b>2.6</b>	<b>0.0</b>	<b>73.8</b>

*Notes: Table 21.2 includes a 20% contingency; Yr = year; FW = Footwall.*

### 21.1.2 Process Plant

Initially an estimated \$66.9M will be spent to achieve a fully operational process plant. During the second, fourth, sixth and eighth years of operation an estimated 5% of the initial capital costs will be spent on sustaining capital. Details of these capital costs are presented in Table 21.3

<b>TABLE 21.3</b>							
<b>PROCESS PLANT CAPITAL COST ESTIMATE (\$M)</b>							
<b>Description</b>	<b>Yr -2</b>	<b>Yr -1</b>	<b>Yr 2</b>	<b>Yr 4</b>	<b>Yr 6</b>	<b>Yr 8</b>	<b>Total</b>
Crushing Plant	2.3	1.2					<b>3.5</b>
Grinding & Gravity Circuit	4.5	2.3					<b>6.8</b>
Crushed Feed Storage	2.4	1.2					<b>3.6</b>
Flotation	4.7	2.4					<b>7.1</b>
Reagent Handling	0.5	0.3					<b>0.8</b>
Building & Lab	9.1	4.5					<b>13.6</b>

<b>TABLE 21.3</b>							
<b>PROCESS PLANT CAPITAL COST ESTIMATE (\$M)</b>							
<b>Description</b>	<b>Yr -2</b>	<b>Yr -1</b>	<b>Yr 2</b>	<b>Yr 4</b>	<b>Yr 6</b>	<b>Yr 8</b>	<b>Total</b>
Cyanide Leaching	2.6	1.3					<b>3.9</b>
Elution, Metal Treatment	1.6	0.8					<b>2.4</b>
Smelting, Refinement	2.0	1.0					<b>3.0</b>
CN Destruction	1.6	0.8					<b>2.4</b>
Air & Water Services	2.8	1.4					<b>4.3</b>
Other Equipment	0.7	0.4					<b>1.1</b>
Tailings Thickening/Pumps	1.6	0.8					<b>2.4</b>
<b>Subtotal Equipment</b>	<b>36.5</b>	<b>18.3</b>					<b>54.8</b>
Project Indirects	8.0	4.0					<b>12.1</b>
<b>Subtotal Initial CAPEX</b>	<b>44.6</b>	<b>22.3</b>					<b>66.8</b>
Sustaining CAPEX			3.3	3.3	3.3	3.3	<b>13.4</b>
<b>Total Plant CAPEX (\$M)</b>	<b>44.6</b>	<b>22.3</b>	<b>3.3</b>	<b>3.3</b>	<b>3.3</b>	<b>3.3</b>	<b>80.2</b>

*Notes: Table 21.3 includes a 20% contingency; Yr = year.*

### **21.1.3 Underground Mine Equipment**

An estimated \$40.7M of capital will be spent on the purchase of underground mine equipment over the LOM, used mainly for stope drilling, blasting, loading, backfilling and haulage. These costs include all underground mobile and stationary equipment. A schedule of sustaining capital expenditure estimates for mine underground equipment is presented in Table 21.4.

**TABLE 21.4**  
**UNDERGROUND MINE EQUIPMENT CAPITAL COST ESTIMATE (\$M)**

<b>Description</b>	<b>LOM Units</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 10</b>	<b>Total</b>
<b>Underground Mobile Equipment</b>												
Sandvik DD422iE Prod Jumbo - 2 Boom	2		2.39					2.39				<b>4.79</b>
Top Hammer Drill (DL311-7)	5		1.63	1.63		1.63		1.63		1.63		<b>8.16</b>
Getman Scissor Lift / Boom Truck	3	0.44	0.44					0.44				<b>1.33</b>
Sandvik LH307 3.2 m <sup>3</sup> LHD - Haulage	4	1.61	1.61				1.61			1.61		<b>6.42</b>
Sandvik TH320 20 t Haul Truck C/W Ejector Box	8	1.35	4.06					1.35	1.35	1.35	1.35	<b>10.84</b>
MCU 2700 UG Blasting Tractor	2	0.66						0.66				<b>1.32</b>
Mechanics / Electrician Vehicle	2	0.07						0.07				<b>0.13</b>
Grader	2	0.44						0.44				<b>0.89</b>
Toyota Pick Ups	7	0.20	0.07					0.20				<b>0.46</b>
Getman Personnel Carrier	2	0.36						0.36				<b>0.72</b>
Alimak	1	0.36										<b>0.36</b>
<b>Miscellaneous Underground Equipment</b>												
Stoppers	8	0.03						0.03				<b>0.05</b>
Jacklegs	8	0.03						0.03				<b>0.05</b>
Construction Hand Tools & Equipment	Lot		0.04									<b>0.04</b>
U/G Fans - 42 in, 1.07 m	10		0.05	0.05	0.05		0.05		0.05			<b>0.24</b>

**TABLE 21.4**  
**UNDERGROUND MINE EQUIPMENT CAPITAL COST ESTIMATE (\$M)**

<b>Description</b>	<b>LOM Units</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 10</b>	<b>Total</b>
U/G Fans - 28 in, 0.71 m	10		0.02	0.02	0.02		0.02		0.02			<b>0.12</b>
U/G Fans - 45 in, 1.14 m	10		0.05	0.05	0.05		0.05		0.05			<b>0.24</b>
Heading Pumps	3	0.02	0.04									<b>0.05</b>
Main Dewatering Pumps	3		0.09	0.09	0.09							<b>0.27</b>
Drill Equipment Starters	3		0.04	0.04	0.04							<b>0.11</b>
Main Substations	2	0.30	0.30									<b>0.60</b>
Pump Station Electrical	Lot		0.06									<b>0.06</b>
Portable Substations	2	0.30	0.30									<b>0.60</b>
<b>Miscellaneous Surface Equipment</b>												
Cap Lamps	75	0.06										<b>0.06</b>
Safety Gear	75	0.02										<b>0.02</b>
Other Safety Gear	Lot	0.04										<b>0.04</b>
Mine ERT	Lot	0.30										<b>0.30</b>
Reconditioned Surface Ventilation Fans	2	0.90	0.90									<b>1.80</b>
Compressors	2	0.06	0.06									<b>0.12</b>
FAR VFD 450 kW Starters	2	0.07	0.07									<b>0.13</b>
Grounding & Cable Miscellaneous	Lot	0.01										<b>0.01</b>
EPCM @ 5%		0.38										<b>0.38</b>
<b>Total Underground Mine Equipment (\$M)</b>	<b>253</b>	<b>8.00</b>	<b>12.21</b>	<b>1.88</b>	<b>0.25</b>	<b>1.63</b>	<b>1.73</b>	<b>7.61</b>	<b>1.47</b>	<b>4.59</b>	<b>1.35</b>	<b>40.72</b>

*Note: Totals may not sum due to rounding, Table 21.4 includes a 20% contingency; Yr = year.*

#### **21.1.4 Underground Infrastructure**

An estimated \$9.1M will be spent on underground infrastructure capital costs, LOM. This includes expenditures for U/G shops, a pump station, sumps, a mine air heating system, lunchrooms / refuge stations, paste backfill distribution systems, latrines, powder / detonator magazines, and 50 ventilation bulkhead / regulators. A summary of underground infrastructure capital cost estimates is presented in Table 21.5.

**TABLE 21.5**  
**UNDERGROUND INFRASTRUCTURE CAPITAL COSTS (\$M)**

<b>Description</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Underground Shops			0.60				0.60					<b>1.20</b>
Upper Pump Station	0.12											<b>0.12</b>
Sumps		0.24		0.48		0.48		0.48				<b>1.68</b>
Mine Air Heaters		0.30		0.30		0.30		0.30				<b>1.20</b>
Refuge Stations	0.18	0.18	0.18	0.18		0.18		0.18				<b>1.08</b>
Paste Backfill Distribution System		1.20										<b>1.20</b>
Latrines	0.05	0.05	0.05	0.05		0.05		0.05				<b>0.29</b>
Powder Magazines	0.06	0.06	0.06	0.06		0.06		0.06				<b>0.36</b>
Detonator Magazines	0.02	0.02	0.02	0.02		0.02		0.02				<b>0.14</b>
Ventilation Walls and Regulators		0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	<b>1.80</b>
<b>Total Underground Infrastructure (\$M)</b>	<b>0.43</b>	<b>2.23</b>	<b>1.09</b>	<b>1.27</b>	<b>0.18</b>	<b>1.27</b>	<b>0.78</b>	<b>1.27</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>9.07</b>

*Notes: Totals may not sum due to rounding, Table 21.5 includes a 20% contingency; Yr = year.*



### 21.1.5 Surface Infrastructure

An estimated \$53.6 M of capital will be spent on surface infrastructure, LOM. This includes site facilities, buildings, buildings furnishings and surface mobile equipment.

The capital cost of site facilities includes the cost of portal construction, the electric power line, substation, switchgear, standby generators, paste backfill plant, ventilation raise infrastructure, waste rock and mineralized stockpile infrastructure, site roads, surface parking, fuel storage, lubrication and oil storage facilities, surface explosive magazines, yard piping, the fire prevention and fighting system, the potable water treatment plant and storage tanks, and surface water management infrastructure.

Building capital costs include the main security gate building, the surface mine shop, the warehouse and warehouse equipment, the office building and the dry.

The building furnishings include the surface mine shop equipment and tools, the office furniture, computers, etc., environmental equipment, dry equipment, site communications, safety and medical centre equipment.

Surface mobile equipment capital costs include a road grader, a front-end loader, a service truck, a garbage truck, an ambulance, a fire / rescue truck and pickup trucks.

An EPCM 10% capital cost estimate has been included in Year 1. A summary of estimated surface infrastructure capital costs is presented in Table 21.6.

Area	Yr -1	Yr 1	Yr 2	Yr 4	Yr 5	Yr 6	Yr 8	Total
Site Facilities	32.6	0.2	1.9	0.3	1.6	1.4	0.3	<b>38.4</b>
Buildings	6.0		0.3			0.3	0.2	<b>6.9</b>
Buildings Furnishings	1.4		0.0	0.0		0.8	0.0	<b>2.2</b>
Surface Mobile Equipment	1.0					1.0		<b>2.1</b>
EPCM @ 10%	4.1							<b>4.1</b>
<b>Total Surface Infrastructure (\$M)</b>	<b>45.1</b>	<b>0.2</b>	<b>2.3</b>	<b>0.4</b>	<b>1.6</b>	<b>3.5</b>	<b>0.6</b>	<b>53.6</b>

*Notes: Some values have been rounded, Table 21.6 includes a 20% contingency; Yr = year.*

### 21.1.6 Mine Closure and Salvage Value

Closure costs include a security bond, the cost to cover waste rock stockpile areas, remove surface facilities and infrastructure, complete final clean up, and provide ongoing water monitoring and treatment, as required. At closure there will be potentially 533,000 t of stockpiled waste development rock on surface if all backfill is paste. Additionally, if all backfill is paste then an estimated 938,000 t of tailings will be stored on surface at closure. The estimated mine closure and salvage capital costs are estimated at a net amount of -\$10.5M and are summarized in Table 21.7.

**TABLE 21.7**  
**MINE CLOSURE AND SALVAGE VALUE CAPITAL COSTS (\$M)**

<b>Description</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
<b>Closure</b>												
Remove surface infrastructure	3.50	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	<b>7.00</b>
<b>Salvage</b>												
Mine Equipment											4.07	<b>4.07</b>
Surface Infrastructure											5.36	<b>5.36</b>
Process Plant											8.02	<b>8.02</b>
Salvage subtotal											17.45	<b>17.45</b>
<b>Total - Closure / Salvage (\$M)</b>	<b>3.50</b>	<b>0.35</b>	<b>0.35</b>	<b>0.35</b>	<b>0.35</b>	<b>0.35</b>	<b>0.35</b>	<b>0.35</b>	<b>0.35</b>	<b>0.35</b>	<b>-17.10</b>	<b>-10.45</b>

## 21.2 OPERATING COST ESTIMATES

Most of the operating costs have been estimated from contractor quotes and first principles, with a minor amount of factoring and estimates from the Author's experience at other mines. The operating cost estimates ("OPEX") include the cost of supervisory, operating and maintenance labour, operating consumables, materials and supplies, haulage and processing. A 10% contingency has been added to all OPEX costs. The yearly operating cost varies from a high of \$147.47/t, in Year 1, to a low of \$121.42/t, in Year 3, averaging \$132.151/t, LOM. A summary of the average operating cost estimates for the Shovelnose Project is provided in Table 21.8.

<b>Description</b>	<b>Total (\$/t)</b>
Stope Development in Mineralization	17.15
Longitudinal LH Stopping	6.17
Transverse LH Stopping	3.19
Cut and Fill Stopping	1.12
Mine G&A	15.27
Paste Backfill	8.20
Process Plant	39.08
U/G Mineralization Haulage	20.71
Stockpile Re-handling	2.75
Administration G&A	18.53
<b>Total OPEX/tonne (with Contingency)<sup>1</sup></b>	<b>132.15</b>

*Note: 1 Total may not sum due to rounding.  
Table 21.8 includes a 10% contingency.*

Diesel fuel has been based on a cost of \$1.10/L and electricity has been based on connection to grid power at \$0.085/kWhr.

Details of the OPEX estimates are provided in the following subsections.

### 21.2.1 Stope Development in Mineralization

An estimated \$59.2M over the LOM (averaging \$17.15/t) will be spent on stope development in mineralization. All stope development will be completed by a contractor(s). This includes the cost of the drifts and crosscuts in mineralization, and slot raises. A summary of stope development in mineralization OPEX is presented in Table 21.9.

**TABLE 21.9**  
**STOPE DEVELOPMENT IN MINERALIZATION OPERATING COSTS**

<b>Description</b>	<b>Size W x H (m)</b>	<b>Unit Cost (\$/m)</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Yr 11</b>	<b>Totals</b>
Drifting (\$/t)	4.0 x 4.0	5,000	2.00	28.27	19.56	5.72	3.50	6.29	10.56	10.75	15.06	11.04	0.00	<b>11.53</b>
Crosscutting (\$/t)	4.0 x 4.0	5,000	133.33	2.96	7.21	0.00	2.98	0.00	0.00	0.00	0.00	0.00	0.00	<b>1.79</b>
Slot Raising (\$/t)	2.0 x 2.0	2,500	0.00	2.52	3.95	3.48	3.99	3.18	3.89	4.43	4.40	3.99	5.23	<b>3.83</b>
<b>Total (\$/t)</b>			<b>135.33</b>	<b>33.76</b>	<b>30.73</b>	<b>9.20</b>	<b>10.48</b>	<b>9.47</b>	<b>14.45</b>	<b>15.18</b>	<b>19.46</b>	<b>15.03</b>	<b>5.23</b>	<b>17.15</b>
<b>Total Cost (\$M)</b>			<b>1.5</b>	<b>11.6</b>	<b>11.2</b>	<b>3.4</b>	<b>3.8</b>	<b>3.5</b>	<b>5.3</b>	<b>5.5</b>	<b>6.9</b>	<b>5.7</b>	<b>0.9</b>	<b>59.2</b>

*Note: Table 21.9 includes a 10% contingency.*

## 21.2.2 Longitudinal and Transverse Longhole Stope Mining

An estimated 1,919,300 t of longitudinal longhole stoping and 992,100 t of transverse longhole stoping mineralization will be mined, LOM. Longitudinal longhole production reaches a maximum 30,438 t/month in Month 101. Transverse longhole production reaches a maximum 26,077 t/month in Month 78. Longhole stope mining operating costs include the cost of material, consumables and direct labour for stope drilling, blasting, ground support, pipe and accessories, and services. The estimated operating cost of longitudinal and transverse longhole mining is summarized in Table 21.10. Note that the mine and stope development costs in waste rock have been capitalized.

<b>TABLE 21.10</b>				
<b>LONGHOLE STOPE MINING OPERATING COSTS</b>				
<b>Item</b>	<b>Longitudinal</b>		<b>Transverse</b>	
	<b>Stope (\$/t)</b>	<b>LOM (\$/t)</b>	<b>Stope (\$/t)</b>	<b>LOM (\$/t)</b>
<b>LOM tonnes</b>	<b>1,919,301</b>	<b>3,452,430</b>	<b>992,085</b>	<b>3,452,430</b>
<b>LH Stope OPEX</b>				
Drilling & Blasting	4.53	1.78	4.53	0.92
Ground Support	0.05	0.02	0.05	0.01
Pipe & Accessories	0.06	0.02	0.06	0.01
Consumables Subtotal	4.64	1.82	4.64	0.94
Services	0.80	0.31	0.80	0.16
Direct Mine Labour	5.65	2.22	5.65	1.15
<b>Total - \$/t</b>	<b>15.73</b>	<b>6.17</b>	<b>15.73</b>	<b>3.19</b>

*Notes: The longhole mining OPEX estimate does not include: Mine G&A, paste backfill, U/G mineralization haulage to surface, stockpile re-handling and administration G&A. These costs are included elsewhere; Table 21.10 includes a 10% contingency.*

## 21.2.3 Cut and Fill Stope Mining

An estimated 174,200 tonnes will be mined by the C&F mining method, LOM. C&F mine production reaches a maximum 10,180 t/month in Month 118. C&F mining operating costs include the cost of material, consumables and direct labour for stope drilling, blasting, ground support, pipe and accessories, and services. C&F operating costs are estimated to average \$22.19/t mined, or \$1.12/t of total process plant feed.

The C&F mining OPEX estimate does not include mine G&A, paste backfill, mineralization handling and haulage to surface, ventilation costs, the cost and delivery of backfill to the stopes, stockpile rehandling and administrative G&A. These costs are included elsewhere.

## 21.2.4 Mine G&A

Mine G&A include the cost of underground supervision and technical staff, support labour including U/G mechanics, U/G electricians, service leaders, grader operators, pump/construction operators, service truck operators and mine labourers. It also includes the cost of mine air heating,

support vehicle operation and maintenance and the cost of all electric power to service the underground. A summary of these operating costs per tonne processed on a yearly basis, is presented in Table 21.11.

### **21.2.5 Paste Backfill**

All underground stopes, and development in mineralization, will be backfilled with either paste backfill or development waste rock. For costing the Authors have assumed only paste backfill will be placed. A summary schedule of backfill placement and mineralization mined is presented in Table 21.12.

**TABLE 21.11**  
**MINE G&A OPERATING COSTS (\$/T)**

<b>Item / Year</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Tonnes Processed (kt)	10.8	343.2	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	176.5	<b>3,452.4</b>
<b>Mine G&amp;A OPEX</b>												
Mine Staff (\$/t)	108.37	5.68	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	<b>5.69</b>
Mine Labour (\$/t)	88.33	4.97	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	5.05	<b>5.30</b>
Mine Air Heating (\$/t)	21.17	0.94	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.52	<b>1.29</b>
Surface Support Vehicles (\$/t)	8.06	0.63	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	<b>0.73</b>
U/G Support Vehicles (\$/t)	6.27	0.89	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	<b>1.10</b>
Hydro (\$/t)	12.68	1.00	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.24	<b>1.15</b>
<b>Total (\$/t)</b>	<b>244.89</b>	<b>14.10</b>	<b>14.58</b>	<b>14.58</b>	<b>14.58</b>	<b>14.58</b>	<b>14.58</b>	<b>14.58</b>	<b>14.58</b>	<b>14.58</b>	<b>14.96</b>	<b>15.27</b>
<b>Total (\$M)</b>	<b>2.6</b>	<b>4.8</b>	<b>5.3</b>	<b>5.3</b>	<b>5.3</b>	<b>5.3</b>	<b>5.3</b>	<b>5.3</b>	<b>5.3</b>	<b>5.3</b>	<b>2.6</b>	<b>52.7</b>

*Note: Yr = year; Table 21.11 includes a 10% contingency.*

**TABLE 21.12**  
**TONNES MINED AND BACKFILL TONNES PLACED**

<b>Item / Year</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Tonnes Processed (kt)	10.8	343.1	365.3	365.3	365.3	365.3	365.3	365.3	365.3	365.3	176.5	<b>3,452.4</b>
Paste Backfill to Stopes (kt)	7.8	249.9	266.0	266.0	266.0	266.0	266.0	266.0	266.0	266.0	128.6	<b>2,514.6</b>
<b>Placement</b>												
Binder (4% cement) (\$/t)	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	5.27	<b>5.27</b>
Misc Construction Material (\$/t)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	<b>0.80</b>
Operators (\$/t)	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	<b>2.12</b>
Paste Backfill OPEX (\$/t)	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	<b>8.20</b>
<b>Total OPEX (\$M)</b>	<b>0.1</b>	<b>2.8</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>1.4</b>	<b>28.3</b>

*Note: Yr = year; Table 21.12 includes a 10% contingency.*

## 21.2.6 Process Plant

Details of the estimated process plant operating costs are presented in Table 21.13. The estimated OPEX cost, including the dry stack tailings facility operations, is \$39.08/t.

<b>TABLE 21.13</b>				
<b>PROCESS PLANT OPERATING COSTS</b>				
<b>Processing Operating Costs</b>	<b>\$M/Yr</b>	<b>LOM \$M</b>	<b>\$/t Processed</b>	<b>% of Total</b>
Labour	8.03	82.2	23.81	60.9%
Power & Fuel	1.96	20.0	5.81	14.9%
Consumables and Maintenance Supplies	2.45	25.1	7.28	18.6%
Mobile Equipment	0.05	0.5	0.15	0.4%
Subtotal	12.49	127.9	37.04	94.8%
Tailings	0.37	3.8	1.10	2.8%
Dry Stack Facility Operation	0.32	3.2	0.94	2.4%
<b>Total</b>	<b>13.17</b>	<b>134.9</b>	<b>39.08</b>	<b>100.0%</b>

*Note: Yr = year; Table 21.13 includes a 10% contingency.*

## 21.2.7 Underground Mineralization Haulage

All underground development and stope mineralized material will be loaded and hauled up the ramp to the Westhaven surface process plant stockpile. A summary of the estimated cost for underground haulage of mineralization is presented in Table 21.14 and averages \$20.71/t processed. The total LOM underground mineralized haulage cost is estimated at \$71.5M.

## 21.2.8 Stockpile Re-handling

All mineralized material will initially be stockpiled on surface, prior to plant processing. The estimated cost to re-handle this material is \$2.72/t including a 10% contingency.

## 21.2.9 General and Administration (G&A)

The general and administration (“G&A”) cost items include site administrative staff, surface support vehicles, access road maintenance, freight/logistics, office expenses, environmental/permitting, software/safety equipment, insurance, community support, consultants, water/sewage/garbage and communication. A summary of G&A costs per tonne processed, and yearly costs, is presented in Table 21.15.



**TABLE 21.14**  
**UNDERGROUND MINERALIZATION HAULAGE OPERATING COSTS**

<b>Item</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Avg./ Total</b>
Truck OPEX (\$/t)	14.61	14.59	13.57	13.46	13.97	14.40	15.01	13.11	13.61	14.36	14.30	<b>14.02</b>
LHD OPEX (\$/t)	7.76	7.76	6.77	6.66	6.97	7.21	7.46	5.69	5.96	6.16	5.89	<b>6.69</b>
Total Haulage Cost (\$/t)	22.37	22.35	20.33	20.12	20.94	21.61	22.47	18.80	19.57	20.53	20.19	<b>20.71</b>
Total Haulage Cost (\$M)	0.2	7.7	7.4	7.3	7.6	7.9	8.2	6.9	7.1	7.5	3.6	<b>71.5</b>

*Note: Yr = year; Table 21.14 includes a 10% contingency.*

**TABLE 21.15**  
**SITE GENERAL AND ADMINISTRATIVE OPERATING COSTS (\$/T)**

<b>Item / Year</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Avg./ Total</b>
Site Staff /Surf. Support Vehicles	208.95	9.75	9.19	9.19	9.19	9.19	9.19	9.19	9.19	9.19	10.12	<b>9.92</b>
Access Road Maintenance	51.06	1.60	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	3.12	<b>1.75</b>
Freight & Logistics	51.06	1.60	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51	3.12	<b>1.75</b>
Office Expenses	5.11	0.32	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.33	<b>0.32</b>
Environmental & Permits	12.77	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.83	<b>0.80</b>
Software/computers/safety	6.38	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.41	<b>0.40</b>
Insurance	12.77	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.83	<b>0.80</b>

**TABLE 21.15**  
**SITE GENERAL AND ADMINISTRATIVE OPERATING COSTS (\$/T)**

<b>Item / Year</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Avg./ Total</b>
Community	10.21	0.32	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.33	<b>0.34</b>
Consultants	35.74	1.12	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	2.18	<b>1.23</b>
Water/Sewage and Garbage	25.53	0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1.56	<b>0.88</b>
Communication	10.21	0.32	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.62	<b>0.35</b>
<b>Total (\$/t)</b>	<b>429.80</b>	<b>17.84</b>	<b>16.79</b>	<b>16.79</b>	<b>16.79</b>	<b>16.79</b>	<b>16.79</b>	<b>16.79</b>	<b>16.79</b>	<b>16.79</b>	<b>23.45</b>	<b>18.53</b>
<b>Total (\$M)</b>	<b>4.6</b>	<b>6.1</b>	<b>6.1</b>	<b>6.1</b>	<b>6.1</b>	<b>6.1</b>	<b>6.1</b>	<b>6.1</b>	<b>6.1</b>	<b>6.1</b>	<b>4.1</b>	<b>64.0</b>

*Note: Yr = year; Table 21.15 includes a 10% contingency.*

### **21.3 ROYALTIES**

A 2% NSR royalty on the Shovelnose Gold Property is currently held by Osisko Gold Royalties Ltd. Westhaven has the option to buy down the royalty to 1% NSR for \$0.5M. There is also a 2% NSR royalty held across all of Westhaven's properties, including Shovelnose, by Franco-Nevada Corporation. Westhaven has the option to buy down the royalty to 1.5% NSR for US\$3M. It is assumed that the royalties will be bought down to  $1\% + 1.5\% = 2.5\%$  at the commencement of production. The estimated cost to buy down the royalties is \$4.45M.

Total costs associated with the two NSR royalties over the LOM are estimated at \$37.9M including the \$4.45M buy down costs.

### **21.4 CASH COSTS AND ALL-IN SUSTAINING COSTS**

Cash costs over the LOM, including royalties, are estimated to average \$871/oz AuEq (US\$662/oz AuEq). All-In Sustaining Costs ("AISC") over the LOM are estimated to average \$1,056/oz AuEq (US\$803/oz AuEq) and include closure costs.

## 22.0 ECONOMIC ANALYSIS

**Cautionary Statement** – The reader is advised that the PEA summarized in this Report is intended to provide only an initial, high-level review of the Project potential and design options. The PEA mine plan and economic model include numerous assumptions and the use of Inferred Mineral Resources. Inferred Mineral Resources are considered to be too speculative to be used in an economic analysis except as allowed by NI 43-101 in PEA studies. There is no guarantee the Project economics described herein will be achieved. This Report is considered by the Authors to meet the requirements of a PEA as defined in Canadian NI 43-101 Standards of Disclosure for Mineral Projects. Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be classified as Mineral Reserves, and there is no certainty that the PEA will be realized. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that Westhaven will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise for the Project to be placed into production.

Economic analysis for the Shovelnose Gold Project has been undertaken for the purposes of evaluating potential financial viability of the Project. A financial model has been developed on the LOM plan comprised of mining the Mineral Resources of Westhaven's Shovelnose Gold Project. NPV and IRR estimates are calculated based on a series of inputs: costs (described in Section 21), revenues and taxes (detailed in this section). Revenues are derived from estimated process recoveries and refinery payables. The LOM plan covers an 11.5-year period.

Sensitivity analysis has been completed for after-tax NPV and IRR on a  $\pm 20\%$  range of values for metal prices, and OPEX and CAPEX costs. Finally, sensitivity to discount rate has been performed on the assumed base case value of 6%. All costs and revenues in the financial analysis are in Q2 2023 Canadian dollars, unless otherwise stated, with no provision for escalation or inflation. Millions of dollars are stated as \$M.

Under a base case scenario (6% discount rate, US\$1,800/oz Au, US\$22/oz Ag, OPEX and CAPEX as set out in Section 21), the overall after-tax NPV of the Project is estimated at \$222M (\$359M pre-tax), with an after-tax IRR of 32.3% (41.4% pre-tax). This results in an after-tax payback period of approximately 2.6 years.

### 22.1 ECONOMIC CRITERIA

#### 22.1.1 Underground Mine Plan Parameters

Key mine production parameters are presented in Table 22.1.

<b>TABLE 22.1</b>	
<b>MINE PRODUCTION KEY PARAMETERS</b>	
<b>Parameter</b>	<b>Value</b>
Production mine life (years)	9.5
Production rate (tpd)	1,000
Production rate (ktpa)	365
Total production (kt)	3,452
Gold grade (g/t)	5.37
Silver grade (g/t)	28.6
Gold process recovery (%)	91.5
Silver process recovery (%)	92.9
Gold smelting/refining (%)	98
Silver smelting/refining (%)	92
Gold payable (koz)	534
Silver payable (koz)	2,715
Gold Equivalent payable (koz)	567

### 22.1.2 Revenue

The commercially saleable product generated by the Project is an Au/Ag doré. Westhaven would be paid once the doré has been delivered to a refinery, off-site. The metal prices used in this PEA are US\$1,800/oz Au and US\$22.00/oz, and the CAD\$/US\$ exchange rate used is 0.76.

As mentioned in Section 21.3 of this Report, there is a 2% NSR royalty on the Project held by Osisko. Westhaven has the option to buy this royalty down to a 1% NSR for \$0.5M. There is also a 2% NSR royalty held across all of Westhaven's properties including Shovelnose held by Franco-Nevada. Westhaven has the option to buy this NSR royalty down to 1.5% NSR for US\$3M. The Authors have estimated Project net revenues after taking advantage of these royalty buy-outs at the commencement of production.

The revenue generation by the Project is summarized and presented in Table 22.2 on an annual basis. Net revenue is estimated at \$1,306M.

**TABLE 22.2**  
**PROJECT REVENUE GENERATION**

<b>Item / Year</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
Tonnes	10,771	343,150	365,250	365,250	365,250	365,250	365,250	365,250	365,250	365,250	176,509	<b>3,452,430</b>
Grade - Au (g/t)	8.01	5.61	5.51	5.12	5.73	5.61	6.46	4.89	5.20	4.84	3.84	<b>5.37</b>
Grade - Ag (g/t)	67.7	36.8	26.4	25.0	35.2	31.6	31.2	21.6	27.4	26.4	19.2	<b>28.6</b>
Au Payable (oz)	2,488	55,535	57,986	53,958	60,353	59,090	67,974	51,467	54,787	50,995	19,528	<b>534,162</b>
Ag Payable (oz)	20,035	347,099	264,961	250,841	353,003	317,271	312,635	216,716	274,479	265,193	92,997	<b>2,715,231</b>
Revenue - Au (US\$M)	4.5	100.0	104.4	97.1	108.6	106.4	122.4	92.6	98.6	91.8	35.2	<b>961.5</b>
Revenue - Ag (US\$M)	0.4	7.6	5.8	5.5	7.8	7.0	6.9	4.8	6.0	5.8	2.0	<b>59.7</b>
Revenue (CAD\$M)	6.5	141.6	145.0	135.1	153.2	149.1	170.0	128.2	137.7	128.5	48.9	<b>1,343.7</b>
Net Royalty (CAD\$M)	4.5	3.5	3.6	3.4	3.8	3.7	4.3	3.2	3.4	3.2	1.2	<b>37.9</b>
<b>Net Revenue (CAD\$M)</b>	<b>2.0</b>	<b>138.0</b>	<b>141.4</b>	<b>131.7</b>	<b>149.3</b>	<b>145.4</b>	<b>165.8</b>	<b>125.0</b>	<b>134.3</b>	<b>125.2</b>	<b>47.7</b>	<b>1,305.8</b>

*Note: Yr = year.*

### **22.1.3 Costs**

All estimated costs are in Q2 2023 Canadian dollars with no allowance for inflation. Operating costs over the LOM are estimated to average \$132.15/t processed. Cash costs including royalties are estimated at \$871/oz AuEq (US\$662/oz AuEq). The average LOM all-in sustaining cost (“AISC”) is estimated at \$1,056/oz AuEq (US\$803/oz AuEq).

Initial capital costs are estimated at \$142M. Sustaining capital costs are estimated at \$105M, and LOM CAPEX is estimated at \$247M. LOM capital costs include the cost of all mine development, process plant, mine equipment, surface infrastructure, underground infrastructure, closure costs, a salvage credit, and a 20% contingency.

## **22.2 CASH FLOW**

Applicable federal and provincial income taxes were applied to Project cash flow. The Authors were assisted by a tax expert as noted in Section 3 of this Report. The financial model does not take into account the following components:

- Financing cost.
- Insurance.
- Overhead cost for a corporate office.

An after-tax financial model summary is presented in Table 22.3.

**TABLE 22.3  
FINANCIAL MODEL SUMMARY**

<b>Item</b>	<b>Description / Year</b>	<b>Units</b>	<b>Yr -2</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>
<b>Production</b>		Mt		0.01	0.34	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.18	<b>3.45</b>
		Au (g/t)		8.0	5.6	5.5	5.1	5.7	5.6	6.5	4.9	5.2	4.8	3.8	<b>5.4</b>
		Ag (g/t)		67.7	36.8	26.4	25.0	35.2	31.6	31.1	21.6	27.3	26.4	19.2	<b>28.6</b>
<b>Revenue</b>		<b>\$M</b>		<b>2.0</b>	<b>138.0</b>	<b>141.4</b>	<b>131.7</b>	<b>149.3</b>	<b>145.4</b>	<b>165.8</b>	<b>125.0</b>	<b>134.3</b>	<b>125.2</b>	<b>47.7</b>	<b>1,305.8</b>
<b>OPEX</b>	Stope Development	\$M		1.5	11.6	11.2	3.4	3.8	3.5	5.3	5.5	6.9	5.7	0.9	<b>59.2</b>
	Longitudinal LH Stoping	\$M			0.9	2.1	2.4	2.0	2.3	1.2	2.3	3.1	3.1	1.9	<b>21.3</b>
	Transverse LH Stoping	\$M			1.8	1.0	1.4	1.5	1.5	2.3	1.3	0.3			<b>11.0</b>
	Cut and Fill Stoping	\$M			0.5	0.3	0.1	0.4		0.5	0.2	0.4	1.2	0.1	<b>3.9</b>
	Mine G&A	\$M		2.6	4.8	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	2.6	<b>52.7</b>
	Paste Backfill	\$M		0.1	2.8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1.4	<b>28.3</b>
	Process Plant	\$M		0.4	13.4	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	6.9	<b>134.9</b>
	U/G Mineralization Haulage	\$M		0.2	7.7	7.4	7.3	7.6	7.9	8.2	6.9	7.1	7.5	3.6	<b>71.5</b>
	Stopckpile Rehandling	\$M		0.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	<b>9.5</b>
	Administration G&A	\$M		4.6	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	4.1	<b>64.0</b>
<b>Total OPEX</b>		<b>\$M</b>		<b>9.5</b>	<b>50.6</b>	<b>51.8</b>	<b>44.3</b>	<b>45.2</b>	<b>44.9</b>	<b>47.2</b>	<b>45.9</b>	<b>47.6</b>	<b>47.2</b>	<b>22.1</b>	<b>456.3</b>



**TABLE 22.3  
FINANCIAL MODEL SUMMARY**

<b>Item</b>	<b>Description / Year</b>	<b>Units</b>	<b>Yr -2</b>	<b>Yr -1</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Total</b>	
<b>CAPEX</b>	Mine Development (Waste Rock)	\$M		18.2	21.6	11.9	2.1	2.5	3.8	4.0	1.4	5.6	2.6		<b>73.8</b>	
	Process Plant	\$M	44.6	22.3		3.3		3.3		3.3		3.3			<b>80.2</b>	
	Mining Equipment	\$M		8.0	12.2	1.9	0.2	1.6	1.7	7.6	1.5	4.6		1.4	<b>40.7</b>	
	U/G Infrastructure	\$M		0.4	2.2	1.1	1.3	0.2	1.3	0.8	1.3	0.2	0.2	0.2	<b>9.1</b>	
	Surface Infrastructure	\$M		45.1	0.2	2.3		0.4	1.6	3.5		0.6			<b>53.6</b>	
	Closure & Salvage	\$M		3.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-17.1	<b>-10.5</b>
	<b>Total CAPEX</b>	<b>\$M</b>		<b>44.6</b>	<b>97.5</b>	<b>36.6</b>	<b>20.9</b>	<b>4.0</b>	<b>8.4</b>	<b>8.7</b>	<b>19.6</b>	<b>4.5</b>	<b>14.6</b>	<b>3.2</b>	<b>-15.6</b>	<b>247.0</b>
<b>Taxes</b>	Federal Income Tax	\$M				5.9	17.2	20.0	19.6	24.4	14.9	17.2	15.2	2.9	<b>137.3</b>	
	Provincial Mineral Tax	\$M			1.8	1.9	1.8	12.4	12.4	13.4	10.1	9.8	10.2	5.5	<b>79.3</b>	
	<b>Total Taxes</b>	<b>\$M</b>			<b>1.8</b>	<b>7.7</b>	<b>19.1</b>	<b>32.4</b>	<b>32.1</b>	<b>37.8</b>	<b>25.0</b>	<b>27.0</b>	<b>25.3</b>	<b>8.4</b>	<b>216.6</b>	
<b>After-Tax Cash Flow</b>		<b>\$M</b>	<b>-44.6</b>	<b>-105.0</b>	<b>49.0</b>	<b>61.0</b>	<b>64.3</b>	<b>63.3</b>	<b>59.7</b>	<b>61.2</b>	<b>49.5</b>	<b>45.1</b>	<b>49.6</b>	<b>32.8</b>	<b>385.9</b>	
<b>After-Tax Cumulative Cash Flow</b>		<b>\$M</b>	<b>-44.6</b>	<b>-149.6</b>	<b>-100.6</b>	<b>-39.6</b>	<b>24.7</b>	<b>88.0</b>	<b>147.7</b>	<b>208.9</b>	<b>258.5</b>	<b>303.5</b>	<b>353.1</b>	<b>385.9</b>		
<b>After-tax IRR</b>		<b>%</b>	<b>32.3%</b>													
<b>After-tax NPV @ 6%</b>		<b>\$M</b>	<b>221.6</b>													

*Note: Yr = year; LH= longhole; U/G = underground*

## 22.3 BASE CASE CASH FLOW ANALYSIS

The following after-tax cash flow analysis was completed:

- Net Present Value (“NPV”) (at 5%, 6%, 7%, 8%, 9% and 10% discount rates).
- Internal Rate of Return (“IRR”).
- Payback period.

The summary of the results of the cash flow analysis is presented in Table 22.4.

<b>Description</b>	<b>Discount Rate</b>	<b>Units</b>	<b>Value</b>
Undiscounted After-Tax CF	0%	(\$M)	385.9
IRR		%	32.3
After-Tax NPV at	5%	(\$M)	243.1
	<b>6%</b>	<b>(\$M)</b>	<b>221.6</b>
	7%	(\$M)	201.9
	8%	(\$M)	183.9
	9%	(\$M)	167.4
	10%	(\$M)	152.2
After-Tax Project Payback Period		Years	2.6

The Project was evaluated on an after-tax cash flow basis which generates a net undiscounted cash flow estimated at \$385.9M. This results in an after-tax IRR of 32.3% and an after-tax NPV of \$221.6M when using a 6% discount rate. In the base case scenario, the Project has a payback period of 2.6 years from the start of production.

## 22.4 SENSITIVITY ANALYSIS

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by reviewing cash flow sensitivities to:

- Gold metal price;
- Silver metal price;
- Gold head grade;
- Gold metallurgical recovery;
- Operating costs; and
- Capital costs.

Each of the sensitivity items were varied up and down by 10% and 20% to assess the effect it would have on the NPV at a 6% discount rate. The value of each parameter, at 80%, 90%, base, 110% and 120%, is presented in Table 22.5.

**TABLE 22.5**  
**SENSITIVITY PARAMETER VALUES**

<b>Parameter</b>	<b>80%</b>	<b>90%</b>	<b>100%</b>	<b>110%</b>	<b>120%</b>
Au Metal Price (US\$/oz)	1,440	1,620	1,800	1,980	2,160
Ag Metal Price (US\$/oz)	17.60	19.80	22.00	24.20	26.40
Au Head Grade (g/t)	4.29	4.83	5.37	5.90	6.44
Au Process Recovery (%)	N/A	82.4%	91.5%	N/A	N/A
Capex (\$M)	197.6	222.3	247.0	271.7	296.4
Opex (\$M)	365.0	410.6	456.3	501.9	547.5

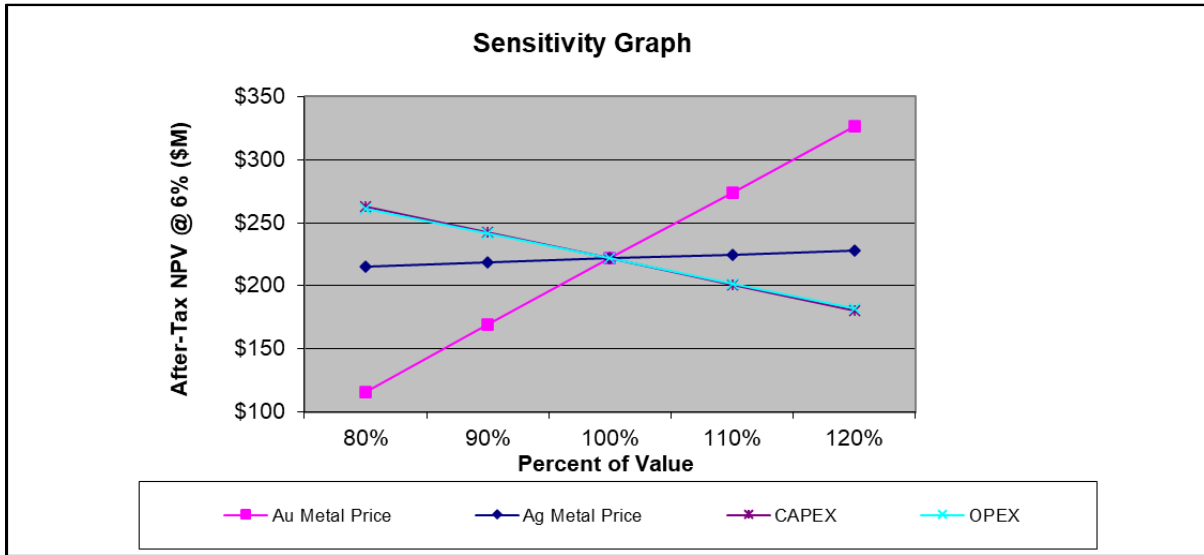
The resultant after-tax NPV @ 6% values of each of the sensitivity parameters at 80% to 120% is presented in Tables 22.6 and Figure 22.1. Note that gold metal price, gold head grade and gold process recovery result in the same NPV values, therefore only gold metal price has been included in Figure 22.1.

The after-tax base case NPV is most sensitive to gold metal price, gold head grade, and gold process recovery followed by CAPEX, OPEX and silver metal price.

**TABLE 22.6**  
**AFTER-TAX NPV SENSITIVITY AT 6% DISCOUNT RATE (\$M)**

<b>Parameter</b>	<b>80%</b>	<b>90%</b>	<b>100%</b>	<b>110%</b>	<b>120%</b>
Au Metal Price	115.9	168.9	221.6	274.2	326.7
Ag Metal Price	215.0	218.3	221.6	224.9	228.2
Au Head Grade	115.9	168.9	221.6	274.2	326.7
Au Process Recovery	N/A	168.9	221.6	N/A	N/A
Capex	263.2	242.4	221.6	200.8	180.0
Opex	260.8	241.2	221.6	202.0	182.3

**FIGURE 22.1 AFTER-TAX NPV SENSITIVITY GRAPH**



**22.5 SUMMARY**

The Project is most sensitive to items directly affecting the gold price, followed by CAPEX and OPEX. The silver price has the least overall impact on the Project after-tax NPV.

It is the opinion of the Authors that the Shovelnose Gold Project has potential to be financially viable. Therefore, it is recommended to advance the Project to the next phase of study.

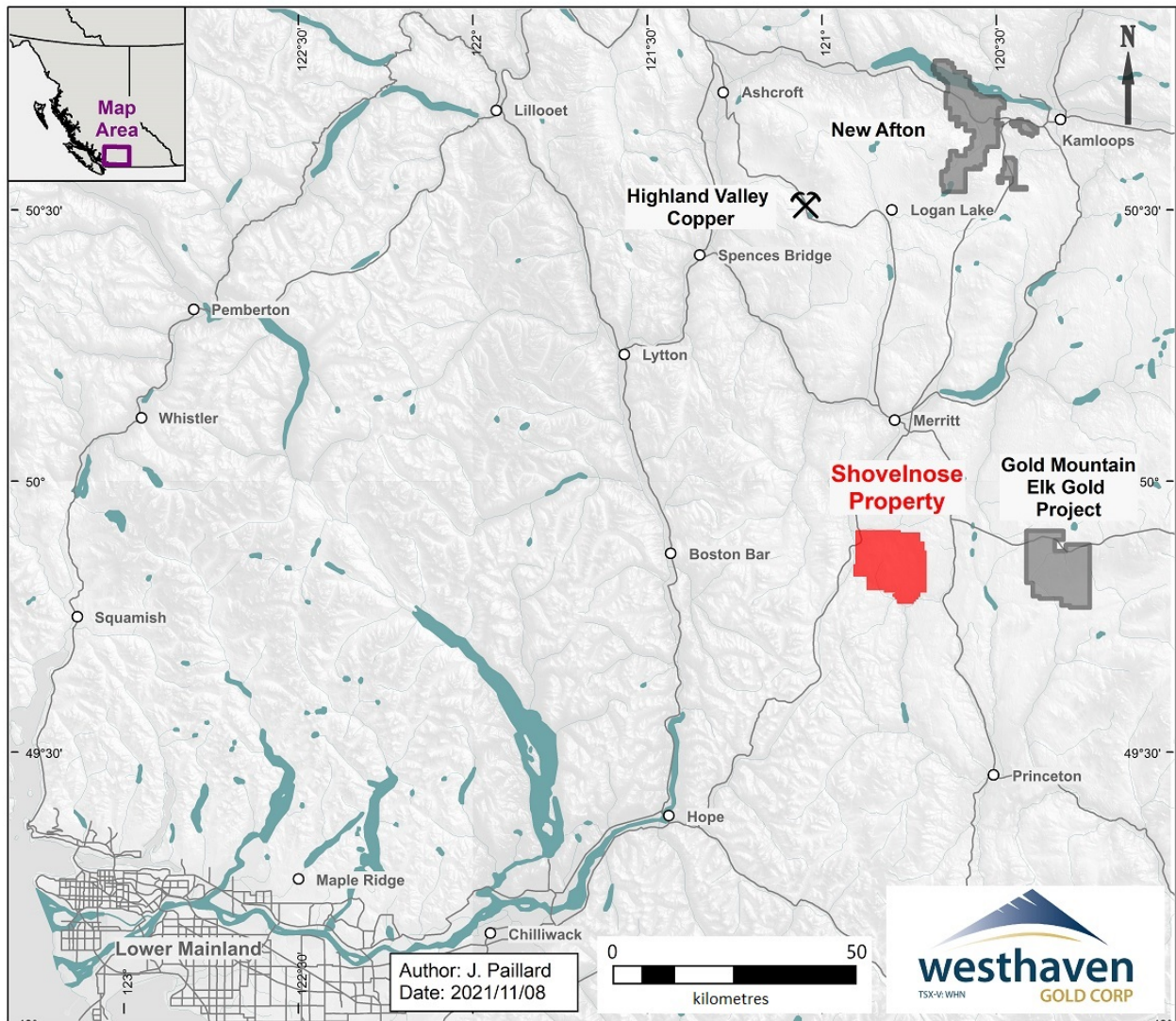
## 23.0 ADJACENT PROPERTIES

In preparing this section of the Report, the Authors relied mainly on a publicly filed NI 43-101 Technical Report (Loschiavo *et al.*, 2021), news releases and corporate websites for Gold Mountain Mining Corp. ([www.gold-mountain.ca](http://www.gold-mountain.ca)) and for New Gold Inc. ([www.newgold.com](http://www.newgold.com)).

### 23.1 ELK GOLD PROJECT (MINFILE NO. 092HNE 096)

The Elk Gold Project (the “Elk Property”) is located approximately 325 km northeast of Vancouver and 50 km southeast of Merritt, in south-central British Columbia (Figure 23.1). The Elk Gold Project lies approximately 20 km east of the Shovelnose Property.

**FIGURE 23.1 PAST PRODUCERS AND DEVELOPED PROSPECTS - SHOVELNOSE PROPERTY AREA**



Source: Westhaven (2021)

The Elk Property is within the Similkameen Mining District and consists of 27 contiguous mineral claims and one mining lease, which in total cover 16,566 ha. Gold Mountain Mining Corp. (“Gold Mountain”) has a 100% interest subject to a 2% NSR royalty, with an additional 1% NSR royalty payable on the Agur claim option block.

Bulk sample mining operations on the mining lease is permitted under Small Mines Permit M-199, first issued in 1995 and subsequently amended in 2012. Access to the Elk Property is available via a four-lane freeway to an interchange on the northernmost claims and 2.5 km north of the historical mining area. A series of gravel logging roads connect to Coquihalla Highway 5 and provide access to most parts of the Elk Property.

The Elk Property is located within the Thompson Plateau (eastern section) known as the Trepanege Plateau Highland which, within the claims area, consists of rolling topography ranging in elevation from 1,300 m asl to 1,750 m asl. The area is blanketed by a layer of glacial till of varying thicknesses and outcrop is scarce.

Prospecting activities in the area started in the early 1900s, and the first recorded work began in the 1960s and 1970s with several companies exploring for copper and molybdenum. Cordilleran Engineering Ltd., the exploration arm of Fairfield Minerals Ltd. (“Fairfield”), investigated the area for gold from 1986 to 1991, identifying and drilling nine separate zones possessing gold-mineralized quartz vein systems. Fairfield assumed operatorship in 1992 for the purpose of mining a bulk sample. Approximately 1,460,000 g (51,500 oz) of gold were produced between 1992 and 1995, mainly from a bulk sample open pit (Pit 1). That work included underground mining where drilling and limited underground test raising and stoping occurred.

Gold mineralization occurs within quartz-sulphide veins and stringers most commonly within phyllic and silica altered Osprey Lake intrusive rocks, and rarely within adjacent phyllic and silica altered Nicola volcanic rocks. Pyrite is the most common sulphide within the quartz veins, ranging from 5% to 80% with higher percentages commonly associated with chalcopyrite and tetrahedrite. Gold occurs as fine-grained free gold (typically <50 µm) in quartz, within quartz-pyrite box-works, and in fractures within veins. Gangue minerals include quartz and altered wall rock clasts (xenoliths), with minor amounts of ankerite, calcite, barite and fluorite. Most of the mine production in Pit 1 occurred within the quartz-monzonite and granodiorite border phase of the batholith. Mine production from Pit 2 was entirely from the quartz-monzonite phase.

Gold Mountain released an updated Preliminary Economic Assessment of the Elk Gold Project in a press release dated May 27, 2021. In that assessment, the Elk Gold Project is envisioned to be developed initially as a conventional open pit mine, operating at a rate of 70,000 tpy (19,000 oz gold) for three years. Starting in Year 4 of operations, the production rate will increase to 324,000 tpy (65,000 oz gold) and incorporate a narrow vein, longhole stoping underground mining method. The mine life is forecast to be 11 years of gold and copper production.

The Mine will be operated by Nhwelmen-Lake LP, which has a mining contract in place with Elk Gold Mining Corp. (the Mining Contract). On Jan. 26, 2021, Gold Mountain entered into an Ore Purchase Agreement with New Gold Inc. to purchase mined material from the Elk gold mine and deliver it to the New Afton Mine, located 133 km from the Elk Property in Kamloops, BC. There is no on-site process plant or tailings storage contemplated. Mineralized material is excavated from the open pit and placed on a limestone-capped stockpile pad. Material on the

stockpile pad will be sampled and assayed for metal accounting before being hauled via highway dump trucks to New Afton.

On July 12, 2021, Gold Mountain noted that it anticipated submitting the final permit to the Ministry of Energy, Mines & Low Carbon Innovation in approximately two weeks, followed by the expected approval of its final mining permit by the end of July. This timeline allowed Nhwelmen-Lake to continue waste rock mining operations for the balance of August and transition to ore mining along the 1300 vein in September 2021. This schedule was consistent with that company's commitment of ore delivery to New Gold's New Afton Mine in October 2021, with first revenue commencing in November 2021.

On November 1, 2021, Gold Mountain announced receipt of its mining permit and noted it would move towards initiating mining operations targeting the high-grade 1100 and 1300 vein systems at the Elk Property.

On December 07, 2021, Gold Mountain announced an Updated Mineral Resource Estimate at the Elk Gold Project, as presented in Table 23.1. The effective date of the Mineral Resource Estimate is October 21, 2021. As part of a 13,900 m Phase 2 drill program, Gold Mountain merged the Gold Creek and Siwash North geological models. By leveraging and evaluating the historical drill data set for satellite zones, including the Lake and South Zones, a combined initial Mineral Resource Estimate was established. The primary factors affecting the change in this Mineral Resource Estimate from previous Mineral Resource Estimates are the addition of 47 new diamond drill holes, changes to the constraining pit shell parameters, changes to the vein model interpretation and inclusion of initial Mineral Resources in the Lake and South Zones.

In February 2022, Gold Mountain delivered its first gold mineralized mined material shipment to New Gold Inc. Payment from New Gold for the February delivery was received in March 2022. Exploration in 2022 continued to intersect high-grade gold mineralization. In the year ending January 31, 2023, production at Elk Mountain totalled 5,644 oz gold from 44,809 tonnes grading 4.07 g/t Au.

**TABLE 23.1**  
**MINERAL RESOURCE ESTIMATE OF THE ELK GOLD PROJECT**

<i>Combined Elk Gold Property Mineral Resource (Pit-Constrained and Underground)</i>					
<i>Dec 2021</i>					
<b>Classification</b>	<b>Tonnes</b>	<b>Au Equivalent (g/t)</b>	<b>Au Capped (g/t)</b>	<b>Ag Capped (g/t)</b>	<b>AuEq (Oz)</b>
Measured	169,000	10.4	10.3	10.9	56,000
Indicated	4,190,000	5.6	5.4	11.0	750,000
Measured + Indicated	4,359,000	5.8	5.6	11.0	806,000
Inferred	1,497,000	5.4	5.3	14.4	262,000

**The reader is cautioned that the Authors have not verified the Elk Gold Project Mineral Resource Estimate. The tonnage and grade at the Elk gold deposit are not necessarily indicative of mineralization on the Shovelnose Property.**

### **23.2 NEW AFTON PROJECT (MINFILE NO. 092INE 023)**

The New Afton Project (the “New Afton Property”, or “New Afton”) is in south-central British Columbia, 10 km west of Kamloops, which is a city of approximately 90,000 people located 350 km northeast of Vancouver (see Figure 23.1). Stratigraphically, the New Gold Inc.’s (“New Gold”) landholdings overlie the Afton Group and the Ajax Group rocks. The New Afton Deposit occurs within the Afton Group. The New Afton Property consists of 61 mineral claims covering 12,450.4 ha, controlled by New Gold and its subsidiaries (New Gold, 2021).

New Afton comprises part of a larger copper-gold porphyry district situated within the prolific Quesnel Trough Island-Arc Terrane, host to many of British Columbia’s major copper and gold districts. Country rocks consist of intermediate to mafic volcanic rocks belonging to the Triassic Nicola Formation. Regional-scale fault zones act as the principal controls to the emplacement of the batholith bodies and related porphyry-style mineralization in the area. The bulk of the New Afton mineralization occurs as a tabular, nearly vertical, southwest-plunging body measuring at



least 1.4 km along strike by approximately 100 m wide, with a down-plunge extent of over 1.5 km. The deposit remains open to the west and at depth.

Mineralization is characterized by copper sulphide veinlets and disseminations localized at brecciated margins between altered porphyry intrusives and Nicola volcanic country rocks. Copper occurs primarily as chalcopyrite and minor bornite, with secondary chalcocite and native copper present in the upper, nearer-surface parts of the deposit. Gold occurs as sub-micrometre size grains associated with copper sulphides.

The New Afton Mine occupies the site of the historical Afton Mine and includes an open pit, underground workings, historical support facilities, a new concentrator and recently constructed tailings facility. New Afton began production in June 2012, with commercial production declared in July 2012. Mineralization currently being mined extends to the southwest from immediately beneath the historical Afton Mine open pit. The underground operation is expected to produce, on average, 85,000 ounces of gold and 75 million pounds of copper per year over its mine life.

The process plant at New Afton has been in operation since 2012. A process plant expansion was completed in 2015 to add a tertiary stage of grinding and additional flotation cleaning capacity. This allowed throughput to increase to a peak average of 16,420 tpd in 2017. Combined open pit and underground mining production in the year 2022 was 41,551 oz Au and 31.1 Mlb Cu.

Mineral Resources and Mineral Reserves reported by New Gold (2022) are presented in Table 23.2.

<b>TABLE 23.2</b>								
<b>NEW AFTON MINERAL RESERVE AND RESOURCE ESTIMATES AS OF DECEMBER 31, 2022</b>								
<b>Zone</b>	<b>Classification</b>	<b>Metal Grade</b>				<b>Contained Metal</b>		
		<b>Tonnes (kt)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>	<b>Cu (%)</b>	<b>Au (koz)</b>	<b>Ag (koz)</b>	<b>Copper (Mlb)</b>
<b>Mineral Reserves</b>								
B3	Proven							
	Probable	7,236	0.65	1.4	0.76	151	333	121
C								
	Proven							
	Probable	29,756	0.68	1.7	0.74	653	1,666	486
<b>Total</b>	<b>Proven &amp; Probable</b>	<b>36,992</b>	<b>0.68</b>	<b>1.7</b>	<b>0.74</b>	<b>804</b>	<b>1,999</b>	<b>607</b>
<b>Mineral Resources</b>								
A & B	Measured	23,173	0.50	1.7	0.66	374	1,290	339
	Indicated	11,869	0.40	2.1	0.64	151	794	168
	<b>M &amp; I</b>	<b>35,042</b>	<b>0.47</b>	<b>1.8</b>	<b>0.66</b>	<b>525</b>	<b>2,084</b>	<b>507</b>
	Inferred	6,184	0.39	1.4	0.34	78	270	47
C	Measured	3,791	0.92	2.3	1.16	112	281	97
	Indicated	1,705	1.68	4.2	2.11	92	232	79
	<b>M &amp; I</b>	<b>5,496</b>	<b>1.16</b>	<b>2.9</b>	<b>1.45</b>	<b>204</b>	<b>513</b>	<b>176</b>

**TABLE 23.2**  
**NEW AFTON MINERAL RESERVE AND RESOURCE ESTIMATES AS OF DECEMBER 31, 2022**

Zone	Classification	Metal Grade				Contained Metal		
		Tonnes (kt)	Au (g/t)	Ag (g/t)	Cu (%)	Au (koz)	Ag (koz)	Copper (Mlb)
	Inferred	1,783	0.5	0.8	0.19	29	44	8
HW Lens	Measured							
	Indicated	11,563	0.50	2.0	0.43	187	740	111
	<b>M &amp; I</b>	<b>11,563</b>	<b>0.50</b>	<b>2.0</b>	<b>0.43</b>	<b>187</b>	<b>740</b>	<b>111</b>
	Inferred	232	0.42	1.5	0.69	3	11	4
D	Measured	1,468	0.80	1.9	0.82	38	91	26
	Indicated	5,886	0.70	1.9	0.79	132	363	102
	<b>M &amp; I</b>	<b>7,353</b>	<b>0.72</b>	<b>1.9</b>	<b>0.79</b>	<b>169</b>	<b>454</b>	<b>129</b>
	Inferred	4,696	0.32	1.3	0.51	48	196	53
Eastern Extension	Measured	3,214	0.81	4.9	1.07	84	509	75
	Indicated	3,860	0.42	1.5	0.44	52	186	37
	<b>M &amp; I</b>	<b>7,074</b>	<b>0.60</b>	<b>3.1</b>	<b>0.72</b>	<b>136</b>	<b>696</b>	<b>113</b>
	Inferred	3,158	0.40	1	0.35	41	100	24
<b>Combined</b>	Measured	31,645	0.60	2.1	0.77	608	2,173	538
	Indicated	34,883	0.55	2.1	0.65	614	2,322	497
	Inferred	16,053	0.38	1.2	0.38	198	621	135
<b>Total</b>	<b>M&amp;I</b>	<b>66,528</b>	<b>0.57</b>	<b>2.1</b>	<b>0.71</b>	<b>1,222</b>	<b>4,495</b>	<b>1,035</b>

Source: New Gold (2023)

The reader is cautioned that the Authors have not verified the New Gold Mineral Resources and Mineral Reserves. The tonnage and grade at the New Afton Project are not necessarily indicative of mineralization on the Shovelnose Property.

## **24.0 OTHER RELEVANT DATA AND INFORMATION**

### **24.1 PROJECT RISKS AND OPPORTUNITIES**

Risks and opportunities have been identified for the Project. The anticipated impact on the Project is listed in brackets after each item, using low-medium-high categories.

#### **24.1.1 Risks**

##### **24.1.1.1 Mineral Resource Estimate**

- Future metal prices could cause a revision of the Mineral Resource Estimate. However, current precious metal spot prices are greater than the long-term forecasts used in the financial analysis of this PEA. (low)
- The Mineral Resource Estimate is comprised of 69% Indicated Mineral Resources and 31% Inferred Mineral Resources. The Inferred Mineral Resources require in-fill drilling to be potentially converted to Indicated Mineral Resources for greater confidence and eligibility to become Mineral Reserves. (medium)

##### **24.1.1.2 Underground Mining**

- Geotechnical studies could impact favorably or negatively on the stope designs and mine plan. The estimated amount of external dilution could have a significant impact on the tonnes and grade of process plant feed. (medium)
- More detailed preparation of a contractor mining cost could result in higher unit costs. (low to medium)
- Hydrogeology is not well understood. Water re-charge rates are likely low, however, are currently unknown. (low)
- No paste backfill studies have been completed. The process plant tailings need to be studied to ensure suitable material for paste backfill. (low)
- Acid rock drainage (“ARD”) and/or metal leaching (“ML”) testing of waste rock needs to be completed to determine if special placement/treatment is required. (low)

##### **24.1.1.3 Process Plant and Tailings**

- Fine grinding and intensive leaching of the flotation concentrate is considered to be a promising strategy for the Project. However, this consideration needs to be confirmed with relevant testwork. (medium)
- Existing metallurgical testing assumptions could change that would lead to reduced metal production or revenue, higher OPEX, and circuit changes. Testwork optimization

should be conducted in all areas. These test requirements suggest the need for the sourcing of a significant quantity (1 to 2 t) of fresh mineralized material and the performance of bench-scale pilot testing. (medium)

#### **24.1.1.4 Financial Aspects**

- Lower metal prices would decrease the Project economics. However, sensitivity analysis indicates that a 20% decrease in metal prices would still result in a financially attractive Project. (low)

### **24.1.2 Opportunities**

#### **24.1.2.1 Mineral Resource Estimate**

- The Shovelnose South Zone remains open along strike and down dip. There is an opportunity to extend the Mineral Resource with additional drilling. (medium)
- The Property contains at least ten mineralized zones, and other than the Shovelnose South Zone, remain relatively unexplored. There is an opportunity for further zone definition with additional drilling and surface exploration. (medium)

#### **24.1.2.2 Underground Mining**

- The Project is amenable to conventional underground mining methods such as mechanized sublevel longhole stoping. It is estimated that 32% of stoping will be by transverse longhole and 62% by longitudinal longhole. Only 6% will be by cut and fill method. (low)
- The South Zone is relatively shallow, allowing for ramp access and reasonable haulage distances. (low)

#### **24.1.2.3 Process Plant and Tailings**

- Assumptions based on the preliminary testwork could change with metallurgical optimization that would lead to higher metal production, lower OPEX, and improved process plant circuit changes. Testwork optimization should be conducted in all areas. (low)
- Refurbished equipment available on the market could be inserted into specific areas such as mills and crushers. Capital cost reduction and a decrease in the Project construction timeframe could result. (low)

#### **24.1.2.4 Financial Aspects**

- Gold and silver are currently trading above the prices used in the financial analysis. After-tax (NPV 6%) increases to \$268.4M and after-tax IRR increases to 37.2% using

spot prices (at time of Company news release on the Project PEA on July 18, 2023) of US\$1,950/oz gold and US\$24/oz silver. (medium)

- The Project is located in an accessible site with well-established nearby mining logistical and labour support, contractors, communications and electrical power supply options. (medium)

## 25.0 INTERPRETATION AND CONCLUSIONS

Westhaven's Shovelnose Property is a gold and silver property composed of 32 contiguous mineral claims covering an area totalling 17,625 ha within the Nicola and Similkameen Mining Divisions of British Columbia (Canada). The mineral claims are currently 100% owned by Westhaven, subject to 4.0% net smelter return royalties.

Structurally-controlled, low sulphidation epithermal gold-silver mineralization has been found in 12 zones on the Property. Seven of those zones are structurally linked along a 4 km northwesterly trend that is open to the east and west. Soil geochemistry, magnetic surveys and, to a smaller extent, IP and DC Resistivity surveys have been instrumental in defining structural zones and linear trends along which exploration has focused and the mineralized zones discovered.

The Property benefits significantly from close proximity to the City of Merritt, which is the nearest full-service community to the Shovelnose Property. The main industries are forestry, ranching and tourism/hospitality. Road access and weather conditions allow for exploration and development work throughout most of the year.

In the opinion of the Authors, the sample preparation, analytical procedures, security and QA/QC program meet industry standards, and that the data are of good quality and satisfactory for use in the Mineral Resource Estimate in this Report. It is recommended that the Company continue with the current QC protocol, which includes the insertion of appropriate certified reference materials, blanks and duplicates, and to further support this protocol with umpire assaying (on at least 5% of samples) at a reputable secondary laboratory. The Authors' due diligence sampling show acceptable correlation with the original Westhaven assays and it is the Authors' opinion that the Westhaven results are suitable for use in the current Mineral Resource Estimate.

In 2021, preliminary metallurgical testing was conducted at ALS Metallurgy Kamloops on six samples from the Shovelnose Gold Property – South Zone for Westhaven. The combination of the production of a flotation concentrate and cyanide leaching of flotation tailings was investigated for all six samples. The sum of average metallurgical recoveries for gold and silver were high at 94.7% and 96.1%, respectively, for the finer ground samples. The mineralization appears to be non-refractory and amenable to recovery by a standard industry process flowsheet.

The Authors consider the mineralization of the Shovelnose Property to be potentially amenable to underground mining methods. At a cut-off of 1.5 g/t AuEq, the Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone consists of: 2,983 kt grading 6.38 g/t Au and 34.1 g/t Ag, or 6.81 g/t AuEq in the Indicated classification; and 1,331 kt grading 3.89 g/t Au and 16.9 g/t Ag, or 4.10 g/t AuEq in the Inferred classification. Contained metal contents are 612 koz Au and 3,273 koz Ag, or 654 koz AuEq in the Indicated classification and 166 koz Au and 725 koz Ag, or 176 koz AuEq in the Inferred classification.

The Shovelnose South Zone will be mined by conventional mechanized trackless underground mining methods. 32% of stoping is planned to be mined by the transverse longhole mining method. Approximately 62% of stoping will be by the longitudinal longhole mining method, on a retreat basis. The balance of stopes (6%) will be mined by the cut and fill mining method. The Zone will be ramp-accessed from surface at 15% gradient. Stopes will generally be 25 m high, floor to back, with both floor and back level access. The Project is planned to produce at a nominal production

rate of 1,000 tpd, combined stope and development mineralization, 30,438 tonnes per month for approximately 10.5 years. LOM production will consist of 3,452,400 t mined at average grades of 5.37 g/t Au and 28.6 g/t Ag. All mine and stope development will be carried out by a mining contractor. Company personnel will carry out all other mining activities including stope drilling and blasting, haulage of mineralized material, backfilling, administration, technical support and personnel, and underground and surface support equipment. Company manpower is estimated at 70 people. The longhole mining method for the Project is estimated to result in external dilution of 20% with a mining recovery (extraction) of 90%. For cut and fill, dilution is estimated at 12% with a mining recovery of 95%. 13.4 km of waste rock mine development and 13.2 km of mineralized development is planned. Major mine equipment will include two-boom drill jumbos, top hammer stope drills, 3.2 m<sup>3</sup> load-haul-dump units and 20 t haul trucks.

ROM material will be fed to a surface-installed jaw crusher with subsequent grinding to a P<sub>80</sub> size of 150 µm in a SAG and ball mill. A flotation concentrate will be made to accumulate a significant proportion of the gold and silver that is associated with sulphides. The flotation concentrate would be thickened and finely ground in a tower mill. The ground flotation concentrate would be subject to “intense” leaching at high sodium cyanide concentration with strong oxidation conditions. The pregnant leach solution would be recovered by filtration and sent to a Merrill Crowe circuit. Sulphide flotation tailings would be subject to a standard cyanide leaching approach and the pregnant solution would be sent to the Merrill Crowe circuit. A precious metal precipitate would be recovered by pressure filtration and smelted to produce doré. A significant portion of the 1,000 tpd leached tailings will be used as mine paste backfill. The balance will be dry-stacked and placed in a designed facility. For both, a high degree of cyanide destruction will be needed for mine worker safety and to meet environmental criteria.

Employees and contractors will commute from nearby communities. Westhaven will construct infrastructure for staff offices, warehousing, change rooms, lunch rooms, diesel fuel tank farm and fueling station, and water and sewage treatment. The mining contractor will establish infrastructure for warehousing, maintenance, explosives storage and contractor offices.

The Shovelnose Gold Property is located on provincially administered Crown Land and is within the traditional territory and ancestral lands of the Niaka’pamux First Nation. Westhaven has engaged in preliminary consultations and discussions with the Niaka’pamux Nation Tribal Council since 2017. The permitting, environmental assessment and approval considerations are anticipated to be extensive. Baseline studies have been initiated by Westhaven.

Underground mining costs have been estimated to average \$74.54/t processed, including stockpile rehandling, over the production years. Process costs (\$39.08/t processed, including tailings) and site G&A (\$18.53/t processed) contribute to a total LOM average cost estimated at \$132.15/t processed and include a 10% contingency. Total costs associated with the two NSR royalties over the LOM are estimated at \$37.9M including \$4.45M for buy down costs. The average operating cash cost over the production years, including royalties, is estimated at \$871/oz AuEq (US\$662/oz AuEq), and the average all-in sustaining cost is estimated at \$1,056/oz AuEq (US\$803/oz AuEq) and include closure costs.

Initial capital costs to construct and commission the process plant, develop underground mine workings to enable production, and install surface infrastructure are estimated at \$142M and

include a 20% contingency. Sustaining capital costs during the production years are estimated at \$105M. The LOM total capital cost of the Shovelnose Gold Project is estimated at \$247.0M.

Under a base case scenario (6% discount rate, US\$1,800/oz Au, US\$22/oz Ag, OPEX and CAPEX as set out above), the overall after-tax NPV of the Project is estimated at \$222M (\$359M pre-tax), with an after-tax IRR of 32.3% (41.4% pre-tax). This results in a post-tax payback period of approximately 2.6 years. Federal and provincial income tax is levied at applicable rates on net taxable income. Project economics are most sensitive to the gold price. Project economics are more sensitive to overall capital costs than operating costs. The silver price has the least overall impact on the Project after-tax NPV.

It is the opinion of the Authors that the Shovelnose Gold Project has potential to be financially viable. Therefore, it is recommended to advance the Project to the next phase of study.



## 26.0 RECOMMENDATIONS

Additional exploration and project development study expenditures are warranted to advance the Shovelnose Project towards a Pre-Feasibility Study (“PFS”). For exploration, the Authors recommend step-out and exploration drilling, in-fill drilling, geological, geophysical and geochemical studies. Recommendations for project development work include metallurgical testwork, environmental baseline studies, geotechnical and hydrogeological studies, and stakeholder consultation.

Recommendations to advance the Shovelnose Project are made in two parts. The first is in support of the discovery and delineation of new mineralized zones, and definition drilling on the South Zone to convert Inferred Mineral Resources within the underground mine design to Indicated Mineral Resources. The second set of recommendations is to facilitate a PFS. Some general recommendations are also made.

In order to further develop the known gold-silver mineralized zones and support the discovery of new zones, the Authors recommend that additional diamond drilling and exploration be planned as follows:

- **Franz Zone.** 1) additional close-spaced shallow drilling to define the extent of the mineralization beneath the outcrop; 2) step-out drilling along strike to the northwest to determine the extent of the Vein Zone 1; 3) collection of a larger surface sample at the Franz Zone showing; and 4) further investigation of potential post-mineral fault offsets both to the northwest and southeast to determine the structural relationship to the FMN Zone and the possibility of offset segments of the vein zone as potential drill targets;
- **FMN Zone.** 1) an extension of the vein system to the southeast towards the Tower Zone showing; 2) a possible parallel trend, both to the southwest and the northeast; and 3) reassess Zone 1 in areas of wider-spaced drilling (+100 m) that may have missed mineralization;
- **Alpine Zone.** (1) as Vein Zone 2 remains open to the northwest, drill and test the gap between the Alpine and Tower Zones; and (2) test the “porphyry style” gold mineralization found at depth below Vein Zone 2 in 2021 exploration drilling;
- **Othello Zone.** Follow-up on the elevated gold values (between 1 ppb and 316 ppb) in drill holes SN22-262 and SN22-262b;
- **HYD BX-02 Zone.** This recently discovered mineralized zone remains open along strike to the northwest and southeast. Follow-up drilling should be considered to test for the continuation of this system in both directions;
- **HYD BX-04 Zone.** Additional drilling may be warranted at this target to determine the extent and intensity of a larger hydrothermal system and test for the results of any structural implications and the effect on the local stratigraphy;
- **Lear Zone.** Potentially extending Vein Zone 3a (and possibly 3b) northwards into the Lear Zone by step-out drilling;

- **South Zone.** Test for additional low-sulphidation epithermal vein systems proximal to the South Zone similar to the ‘conjugate flower structure’ target drilled in 2022;
- **Romeo Target.** Complete drilling the suspended drill hole SN21-177 in the Romeo prospect; re-assess the 2021 findings through additional drilling of the magnetic low and anomalous molybdenum/arsenic geochemistry values; and investigate elevated antimony values situated to the southeast of current drill holes; and
- **Other Targets.** Drill testing other potentially promising targets supported by geological, geophysical and geochemical features of interest.

The Authors also recommend the continuation of geological, geophysical and geochemical studies to assist in ongoing exploration activities, including:

- Structural interpretation aided by oriented drill core measurements made on drilling completed since 2020;
- Petrographic descriptions, when received, should be compared and contrasted with the original drill core logging, discussed with the logging geologists and incorporated into interpretive work;
- Evaluation and interpretation of multi-element analyses associated with the South Zone, FMN and Franz Zone to potentially develop an alteration fingerprint that can be applied elsewhere on the Shovelnose Property; and
- Continue ground-truthing potential targets derived from continuing review of the exploration geological, geochemical and geophysical databases.

A total of 13,400 m of in-fill diamond drilling is recommended at the South Zone to convert Inferred Mineral Resources within the underground mine design to Indicated Mineral Resources.

In order to facilitate a PFS, the Authors recommend metallurgical testing to investigate:

- Gold and silver deportment mineralogy;
- Crushing and additional grinding tests;
- More aggressive flotation strategies to float the gold with the small amount of sulphides;
- Fine grinding and CN leaching of the rougher concentrates;
- Finer primary grind followed by CN leaching; and
- Concentrate and tailings filtration and thickening tests.

Westhaven commenced environmental baseline studies in 2020, in support of future permitting activities. The Authors recommend that this work continue and potentially be expanded to include:

- Continue surface water sampling at the previously established sites for a minimum of 24 months;
- Continue and expand aquatic and terrestrial studies;
- Consider installation of a dedicated weather station;
- Investigate requirements for, and consider establishing, ground water and hydrogeological monitoring stations within and adjacent to the potential mine workings;
- Additional archeological studies within the larger Project area; and
- Additional stakeholder consultation.

The Authors consider that the recommended work program would cost approximately \$10.6M (Table 26.1). The work program should be completed in two phases. Phase 1 is estimated to cost \$7.9M and is for exploration and in-fill drilling, leading to an Updated Mineral Resource Estimate. The Phase 2 program is estimated at \$2.7M and would be contingent on the results of Phase 1. Phase 2 is for engineering work leading to completion of a PFS.

**TABLE 26.1  
RECOMMENDED WORK PROGRAM BUDGET**

<b>Program</b>	<b>Description</b>	<b>Budget (\$)</b>
<b>Exploration</b>		
Step-out and Exploration Drilling	10,000 m at \$275/m (includes staff and assays)	2,750,000
Surface Exploration Programs	mineral prospecting, mapping, sampling, etc.	150,000
Specialized Geochemical Studies	multi-element interpretive and modelling work	100,000
In-fill Drilling	13,400 m at \$275/m	3,685,000
Updated Mineral Resource Estimate		200,000
Contingency (15%)		1,033,000
<b>Subtotal Phase 1</b>		<b>7,918,000</b>
<b>PFS Work</b>		
Metallurgical Testwork		200,000
Environmental Studies		250,000
Geotechnical and Hydrogeological Studies		600,000
Stakeholder Consultation		100,000
Pre-Feasibility Study		1,200,000
Contingency (15%)		352,000
<b>Subtotal Phase 2</b>		<b>2,702,000</b>
<b>Total</b>		<b>10,620,000</b>

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## 28.0 CERTIFICATES

### CERTIFICATE OF QUALIFIED PERSON

#### ANDREW BRADFIELD, P. ENG.

I, Andrew Bradfield, P. Eng., residing at 5 Patrick Drive, Erin, Ontario, Canada, N0B 1T0, do hereby certify that:

1. I am an independent mining engineer contracted by P&E Mining Consultants.
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I am a graduate of Queen’s University, with an honours B.Sc. degree in Mining Engineering in 1982. I have practiced my profession continuously since 1982. I am a Professional Engineer of Ontario (License No.4894507). I am also a member of the National CIM.

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

I have practiced my profession continuously since 1982. My summarized career experience is as follows:

- Various Engineering Positions – Palabora Mining Company, 1982-1986
- Mines Project Engineer – Falconbridge Limited, 1986-1987
- Senior Mining Engineer – William Hill Mining Consultants Limited, 1987-1990
- Independent Mining Engineer, 1990-1991
- GM Toronto – Bharti Engineering Associates Inc, 1991-1996
- VP Technical Services, GM of Australian Operations – William Resources Inc, 1996-1999
- Independent Mining Engineer, 1999-2001
- Principal Mining Engineer – SRK Consulting, 2001-2003
- COO – China Diamond Corp, 2003-2006
- VP Operations – TVI Pacific Inc, 2006-2008
- COO – Avion Gold Corporation, 2008-2012
- Independent Mining Engineer, 2012-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 2, 3, 24 and co-authoring Sections 1, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had no prior involvement with the Project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signing Date: August 31, 2023

***{SIGNED AND SEALED}***

***[Andrew Bradfield]***

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Andrew Bradfield, P.Eng.

## CERTIFICATE OF QUALIFIED PERSON

### ALEXANDER PARTSCH

I, Alexander Partsch, P.Eng. residing #1606 – 12121 Jasper Avenue, Edmonton, Alberta, Canada T5N 3X7 do hereby certify that:

1. I am an independent mining engineering consultant and President of Euro-Canadian Industrial Business Services Inc. (APEGA Permit to Practice # P9893) contracted by P&E Mining Consultants.
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I am a graduate of Montanuniversitaet Leoben, Austria at which I earned my Bachelor Degree in Mining Engineering (B.Eng. 1996). I am also a graduate of the University of Alberta where I earned a Master in Business Administration degree (M.B.A.) in 2002. I have practiced my profession as a mining engineer since graduation. I am licensed by the Association of Professional Engineers and Geoscientists of Alberta (APEGA), Licence No. 83238.

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of this report is:

- Technical Assistant, Naintsch Mineralwerke GmbH 1997
  - Area Sales Manager, Komatsu Mining Germany GmbH 1997-2000
  - Reliability Engineer Oil Sands, Finning Canada 2003-2006
  - Oilsands Reliability Manager, Finning Canada 2008-2011
  - Lead – Mine Costing, Canadian Natural Resources Ltd. 2012 - 2021
  - Consulting Engineer, Euro-Canadian Industrial Business Services Ltd. since 2006
4. I am responsible for authoring Section 18 and co-authoring Sections 1, 5, 25, 26 and 27 of this Technical Report.
  5. I have visited the Property that is the subject of this Technical Report on July 3, 2023.
  6. I am independent of the issuer applying all the tests in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
  7. I have had no prior involvement with the Project that is the subject of this Technical Report.
  8. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith.
  9. As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Effective Date: July 18, 2023

Signing Date: August 31, 2023

***{SIGNED AND SEALED}***

***[Alexander Partsch]***

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Alexander Partsch, MBA, Dipl-Ing., P.Eng.

## CERTIFICATE OF QUALIFIED PERSON

### WILLIAM STONE, PH.D., P.GEO.

I, William Stone, Ph.D., P.Geo, residing at 4361 Latimer Crescent, Burlington, Ontario, Canada do hereby certify that:

1. I am an independent geological consultant working for P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I am a graduate of Dalhousie University with a Bachelor of Science (Honours) degree in Geology (1983). In addition, I have a Master of Science in Geology (1985) and a Ph.D. in Geology (1988) from the University of Western Ontario. I have worked as a geologist for a total of 35 years since obtaining my M.Sc. degree. I am a geological consultant currently licensed by the Professional Geoscientists of Ontario (License No 1569).

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- Contract Senior Geologist, LAC Minerals Exploration Ltd. 1985-1988
- Post-Doctoral Fellow, McMaster University 1988-1992
- Contract Senior Geologist, Outokumpu Mines and Metals Ltd. 1993-1996
- Senior Research Geologist, WMC Resources Ltd. 1996-2001
- Senior Lecturer, University of Western Australia 2001-2003
- Principal Geologist, Geoinformatics Exploration Ltd. 2003-2004
- Vice President Exploration, Nevada Star Resources Inc. 2005-2006
- Vice President Exploration, Goldbrook Ventures Inc. 2006-2008
- Vice President Exploration, North American Palladium Ltd. 2008-2009
- Vice President Exploration, Magma Metals Ltd. 2010-2011
- President & COO, Pacific North West Capital Corp. 2011-2014
- Consulting Geologist 2013-2017
- Senior Project Geologist, Anglo American 2017-2019
- Consulting Geoscientist 2020-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 4, 6 to 10 and 23 and co-authoring Sections 1, 5, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Property that is the subject of this Technical Report. I was a Qualified Person for a Technical Report titled “Technical Report and Initial Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, with an effective date of January 1, 2022.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signed Date: August 31, 2023

**{SIGNED AND SEALED}**

**[William Stone]**

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William E. Stone, Ph.D., P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

### YUNGANG WU, P.GEO.

I, Yungang Wu, P. Geo., residing at 3246 Preserve Drive, Oakville, Ontario, Canada L6M 0X3, do hereby certify that:

1. I am an independent consulting geologist contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I am a graduate of Jilin University, China, with a Master’s degree in Mineral Deposits (1992). I have worked as a geologist for 30 plus years since graduating. I am a geological consultant and a registered practising member of the Professional Geoscientists Ontario (Registration No. 1681).

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is as follows:

- Geologist –Geology and Mineral Bureau, Liaoning Province, China 1992-1993
- Senior Geologist – Committee of Mineral Resources and Reserves of Liaoning, China 1993-1998
- VP – Institute of Mineral Resources and Land Planning, Liaoning, China 1998-2001
- Project Geologist–Exploration Division, De Beers Canada 2003-2009
- Mine Geologist – Victor Diamond Mine, De Beers Canada 2009-2011
- Resource Geologist– Coffey Mining Canada 2011-2012
- Consulting Geologist 2012-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for co-authoring Sections 1, 14, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a Qualified Person for a Technical Report titled “Technical Report and Initial Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, with an effective date of January 1, 2022.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signed Date: August 31, 2023

***{SIGNED AND SEALED}***

***[Yungang Wu]***

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Yungang Wu, P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

### JARITA BARRY, P.GEO.

I, Jarita Barry, P.Geo., residing at 9052 Mortlake-Ararat Road, Ararat, Victoria, Australia, 3377, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I am a graduate of RMIT University of Melbourne, Victoria, Australia, with a B.Sc. in Applied Geology. I have worked as a geologist for over 17 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by Engineers and Geoscientists British Columbia (License No. 40875) and Professional Engineers and Geoscientists Newfoundland & Labrador (License No. 08399). I am also a member of the Australasian Institute of Mining and Metallurgy of Australia (Member No. 305397);

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- Geologist, Foran Mining Corp. 2004
- Geologist, Aurelian Resources Inc. 2004
- Geologist, Linear Gold Corp. 2005-2006
- Geologist, Búscore Consulting 2006-2007
- Consulting Geologist (AusIMM) 2008-2014
- Consulting Geologist, P.Geo. (EGBC/AusIMM) 2014-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Section 11 and co-authoring Sections 1, 12, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a Qualified Person for a Technical Report titled “Technical Report and Initial Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, with an effective date of January 1, 2022.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signed Date: August 31, 2023

**{SIGNED AND SEALED}**

**[Jarita Barry]**

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Jarita Barry, P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

### ANTOINE R. YASSA, P.GEO.

I, Antoine R. Yassa, P.Geo. residing at 3602 Rang des Cavaliers, Rouyn-Noranda, Quebec, Canada J0Z 1Y2, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I am a graduate of Ottawa University at Ottawa, Ontario with a B. Sc (HONS) in Geological Sciences (1977) with continuous experience as a geologist since 1979. I am a geological consultant currently licensed by the Order of Geologists of Québec (License No 224) and by the Association of Professional Geoscientist of Ontario (License No 1890);

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- Minex Geologist (Val d’Or), 3-D Modeling (Timmins), Placer Dome 1993-1995
- Database Manager, Senior Geologist, West Africa, PDX, 1996-1998
- Senior Geologist, Database Manager, McWatters Mine 1998-2000
- Database Manager, Gemcom modeling and Resources Evaluation (Kiena Mine) 2001-2003
- Database Manager and Resources Evaluation at Julietta Mine, Bema Gold Corp. 2003-2006
- Consulting Geologist 2006-present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for co-authoring Sections 1, 14, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a Qualified Person for a Technical Report titled “Technical Report and Initial Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, with an effective date of January 1, 2022.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signed Date: August 31, 2023

***{SIGNED AND SEALED}***

***[Antoine R. Yassa]***

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Antoine R. Yassa, P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

### D. GRANT FEASBY, P. ENG.

I, D. Grant Feasby, P. Eng., residing at 12,209 Hwy 38, Tichborne, Ontario, Canada K0H 2V0, do hereby certify that:

1. I am currently the Owner and President of:  
FEAS - Feasby Environmental Advantage Services  
38 Gwynne Ave, Ottawa, K1Y1W9
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I graduated from Queens University in Kingston Ontario, in 1964 with a Bachelor of Applied Science in Metallurgical Engineering, and a Master of Applied Science in Metallurgical Engineering in 1966. I am a Professional Engineer registered with Professional Engineers Ontario. I have worked as a metallurgical engineer for over 50 years since my graduation from university.

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report has been acquired by the following activities:

- Metallurgist, Base Metal Processing Plant.
- Research Engineer and Lab Manager, Industrial Minerals Laboratories in USA and Canada.
- Research Engineer, Metallurgist and Plant Manager in the Canadian Uranium Industry.
- Manager of Canadian National Programs on Uranium and Acid Generating Mine Tailings.
- Director, Environment, Canadian Mineral Research Laboratory.
- Senior Technical Manager, for large gold and bauxite mining operations in South America.
- Expert Independent Consultant associated with several companies, including P&E Mining Consultants, on mineral processing, environmental management, and mineral-based radiation assessment.

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 13, 17 and 20 and co-authoring Sections 1, 25, 26 and 27 of this Technical Report.
6. I am independent of the issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a Qualified Person for a Technical Report titled “Technical Report and Initial Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, with an effective date of January 1, 2022.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signed Date: August 31, 2023

***{SIGNED AND SEALED}***

***[D. Grant Feasby]***

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D. Grant Feasby, P.Eng.

## **CERTIFICATE OF QUALIFIED PERSON**

### **JAMES L. PEARSON, P. ENG.**

I, James L. Pearson, P.Eng., residing at 105 Stornwood Court, Brampton, Ontario, Canada, L6W 4H6, do hereby certify that:

1. I am a Mining Engineering Consultant, contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia", (The "Technical Report") with an effective date of July 18, 2023.
3. I am a graduate of Queen's University, Kingston, Ontario, Canada, in 1973 with an honours Bachelor of Science degree in Mining Engineering. I am registered as a Professional Engineer in the Province of Ontario (Reg. No. 36043016). I have practiced my profession continuously since 1973.

I have read the definition of "Qualified Person" set out in National Instrument ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101. My relevant experience for the purpose of the Technical Report has been acquired by the following activities:

- Review and report as a consultant on numerous exploration and mining projects around the world for due diligence and regulatory requirements;
  - Project Manager and Superintendent of Engineering and Projects at several underground operations in South America;
  - Senior Mining Engineer with a large Canadian mining company responsible for development of engineering concepts, mine design and maintenance;
  - Mining analyst at several Canadian brokerage firms.
4. I have not visited the Property that is the subject of this Technical Report.
  5. I am responsible for authoring Sections 15, 16, 19, 21 and 22 and co-authoring Sections 1, 25, 26 and 27 of this Technical Report.
  6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
  7. I have had no prior involvement with the Property that is the subject of this Technical Report.
  8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
  9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signed Date: August 31, 2023

***{SIGNED AND SEALED}***

***[James L. Pearson]***

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James L. Pearson, P.Eng.



## CERTIFICATE OF QUALIFIED PERSON

### EUGENE PURITCH, P. ENG., FEC, CET

I, Eugene J. Puritch, P. Eng., FEC, CET, residing at 44 Turtlecreek Blvd., Brampton, Ontario, Canada L6W 3X7, do hereby certify that:

1. I am an independent mining consultant and President of P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining, as well as obtaining an additional year of undergraduate education in Mine Engineering at Queen’s University. In addition, I have also met the Professional Engineers of Ontario Academic Requirement Committee’s Examination requirement for a Bachelor’s degree in engineering Equivalency. I am a mining consultant currently licensed by the: Professional Engineers and Geoscientists New Brunswick (License No. 4778); Professional Engineers, Geoscientists Newfoundland and Labrador (License No. 5998); Association of Professional Engineers and Geoscientists Saskatchewan (License No. 16216); Ontario Association of Certified Engineering Technicians and Technologists (License No. 45252); Professional Engineers of Ontario (License No. 100014010); Association of Professional Engineers and Geoscientists of British Columbia (License No. 42912); and Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (No. L3877). I am also a member of the National Canadian Institute of Mining and Metallurgy.

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

I have practiced my profession continuously since 1978. My summarized career experience is as follows:

- Mining Technologist - H.B.M. & S. and Inco Ltd., 1978-1980
- Open Pit Mine Engineer – Cassiar Asbestos/Brinco Ltd., 1981-1983
- Pit Engineer/Drill & Blast Supervisor – Detour Lake Mine, 1984-1986
- Self-Employed Mining Consultant – Timmins Area, 1987-1988
- Mine Designer/Resource Estimator – Dynatec/CMD/Bharti, 1989-1995
- Self-Employed Mining Consultant/Resource-Reserve Estimator, 1995-2004
- President – P&E Mining Consultants Inc, 2004-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for co-authoring Sections 1, 14, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a Qualified Person for a Technical Report titled “Technical Report and Initial Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, with an effective date of January 1, 2022.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signed Date: August 31, 2023

**{SIGNED AND SEALED}**

**[Eugene Puritch]**

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Eugene Puritch, P.Eng., FEC, CET

## CERTIFICATE OF QUALIFIED PERSON

### BRAIN RAY, M.SC., P.GEO.

I, Brian Ray, M.Sc., P.Geo., residing at 11770 Wildwood Crescent N, Pitt Meadows, British Columbia, Canada, do hereby certify that:

1. I am an independent geological consultant contracted by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Preliminary Economic Assessment and Updated Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, (The “Technical Report”) with an effective date of July 18, 2023.
3. I am a graduate of the School of Mining and Geology “Hristo Botev”, Pernik (1980) with a Bachelor of Science degree in Geology and Exploration of Minerals, and the University of Mining Engineering and Geology “St. Ivan Rilsky” Sofia with a Master of Science degree in Geology and Exploration of Mineral Resources (1993). I have worked as a geologist for over 40 years. I am a geological consultant currently licensed by the Professional Geoscientists of British Columbia (License No 33418).

I have read the definition of “Qualified Person” set out in National Instrument 43-101 (“NI 43-101”) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.

My relevant experience for the purpose of the Technical Report is:

- Senior Geologist, Bulgarian Academy of Sciences – Geological Institute, Sofia 1980-2002
- Contract Geologist, Barrick Gold Corporation (Williams Mine), Marathon, ON July 2005-Oct 2005
- Chief Mine Geologist, YGC Resources (Ketzka River Mine), Yukon Oct 2005-Oct 2006
- Resource Program Manager, Miramar Mining Corp. (Hope Bay), Nunavut 2006-2007
- Senior District Geologist, Newmont Mining Corp. (Hope Bay), Nunavut 2007-Jun 2008
- Geological Consultant, AMEC Americas Ltd., Vancouver, BC Jun 2008-Dec 2008
- Independent Geological Consultant Dec 2008-June 2009
- Country Exploration Manager, Sandspring Resources Ltd. May 2013-Dec 2013
- Principal Resource Geologist, Ray GeoConsulting Ltd. 2013-present

4. I have visited the Property that is the subject of this Technical Report on September 27, 2021.
5. I am responsible for co-authoring Sections 1, 12, 25, 26 and 27 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101. I am independent of the Vendor and the Property.
7. I have had prior involvement with the Property that is the subject of this Technical Report. I was a Qualified Person for a Technical Report titled “Technical Report and Initial Mineral Resource Estimate of the Shovelnose Gold Property – South Zone, Nicola and Similkameen Mining Divisions, British Columbia”, with an effective date of January 1, 2022.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: July 18, 2023

Signed Date: August 31, 2023

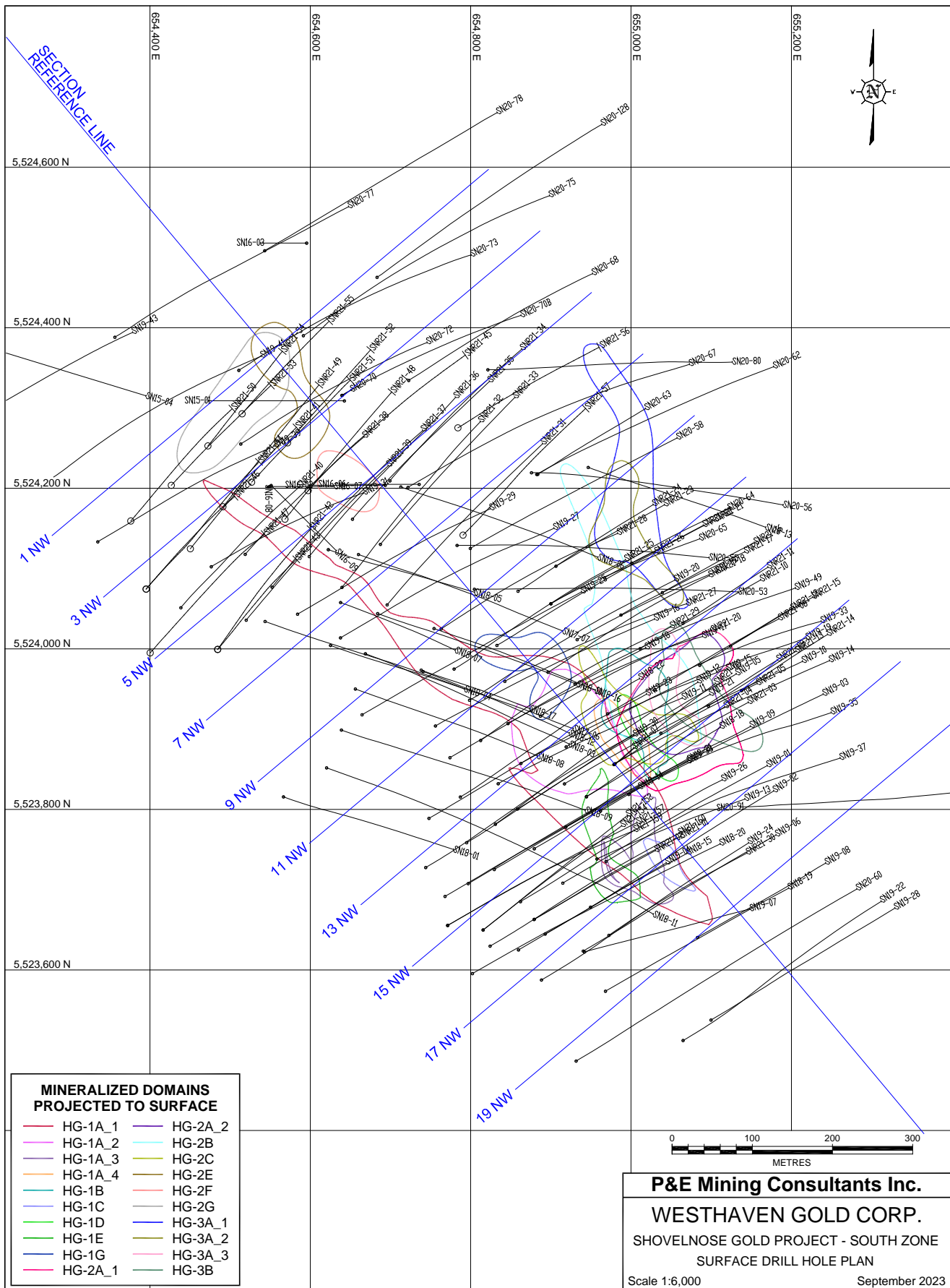
***{SIGNED AND SEALED}***

***[Brian Ray]***

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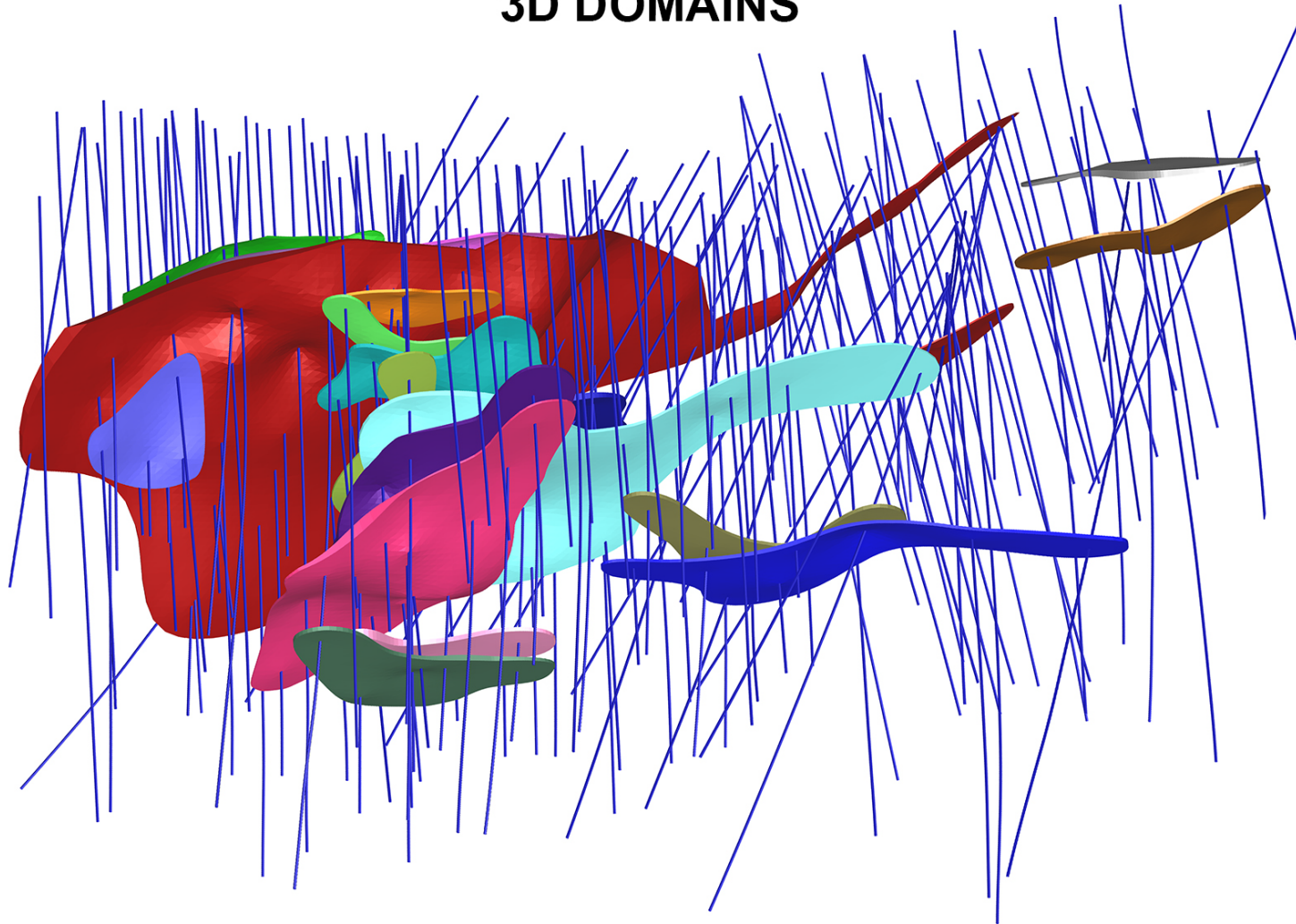
Brain Ray, M.Sc., P.Geo.

## APPENDIX A DRILL HOLE PLAN



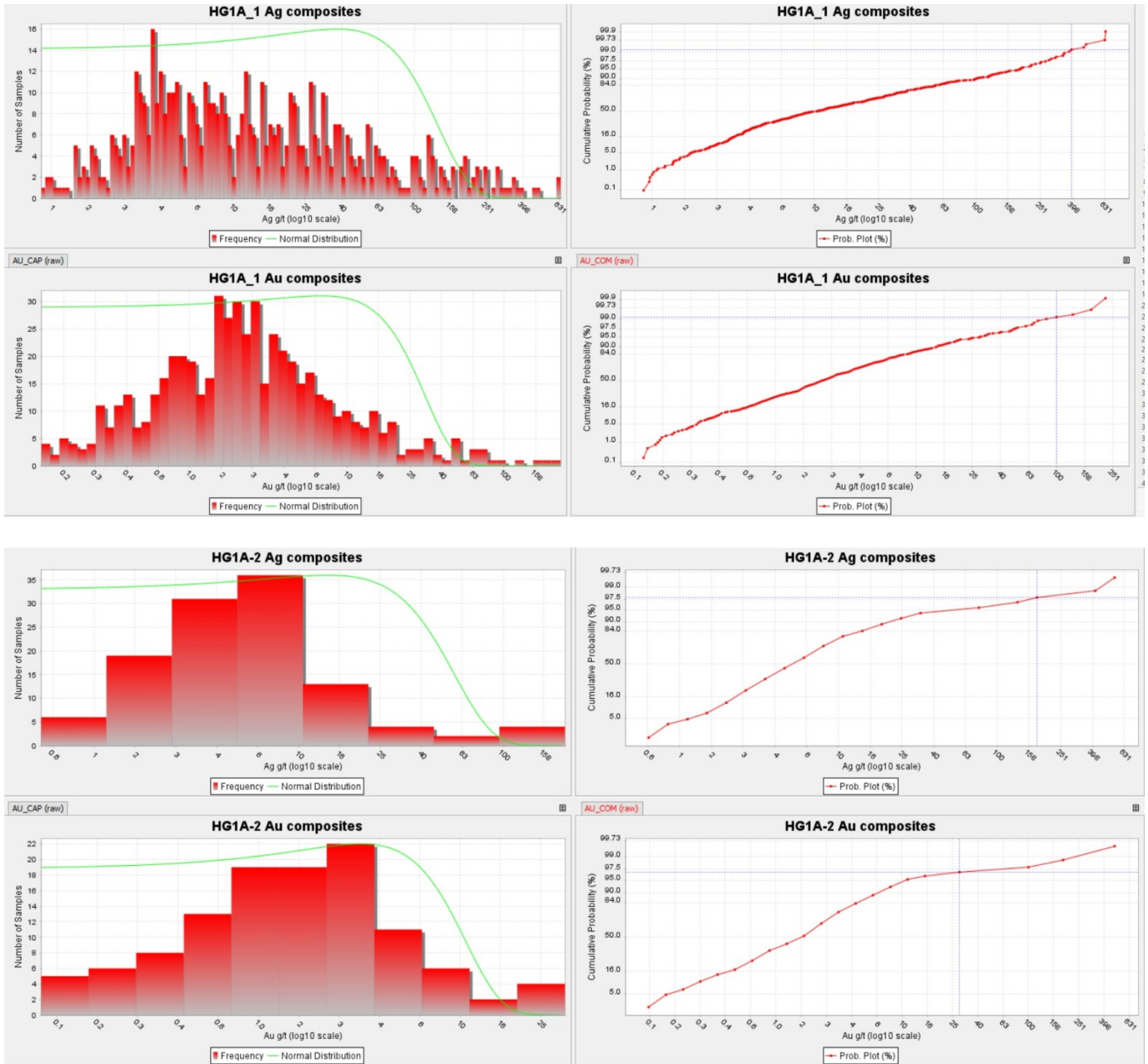
## **APPENDIX B 3-D DOMAINS WIREFRAMES**

# SHOVELNOSE GOLD PROJECT - SOUTH ZONE 3D DOMAINS



<span style="color: red;">■</span> HG-1A_1	<span style="color: cyan;">■</span> HG-1B	<span style="color: blue;">■</span> HG-1G	<span style="color: lightgreen;">■</span> HG-2C	<span style="color: blue;">■</span> HG-3A_1
<span style="color: magenta;">■</span> HG-1A_2	<span style="color: purple;">■</span> HG-1C	<span style="color: pink;">■</span> HG-2A_1	<span style="color: brown;">■</span> HG-2E	<span style="color: olive;">■</span> HG-3A_2
<span style="color: purple;">■</span> HG-1A_3	<span style="color: limegreen;">■</span> HG-1D	<span style="color: purple;">■</span> HG-2A_2	<span style="color: coral;">■</span> HG-2F	<span style="color: pink;">■</span> HG-3A_3
<span style="color: orange;">■</span> HG-1A_4	<span style="color: green;">■</span> HG-1E	<span style="color: cyan;">■</span> HG-2B	<span style="color: gray;">■</span> HG-2G	<span style="color: darkgreen;">■</span> HG-3B

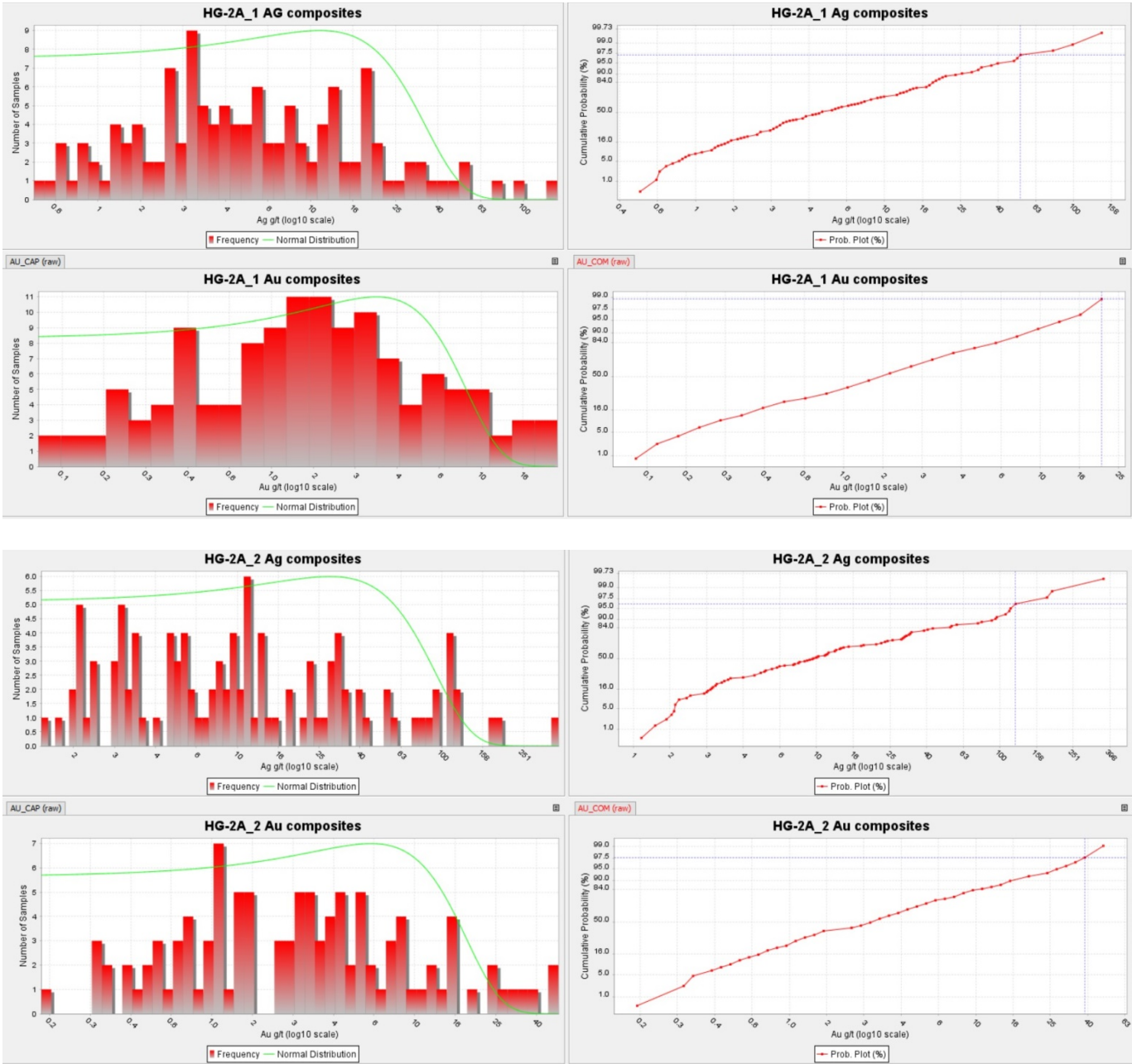
## APPENDIX C LOG NORMAL HISTOGRAMS AND PROBABILITY PLOTS



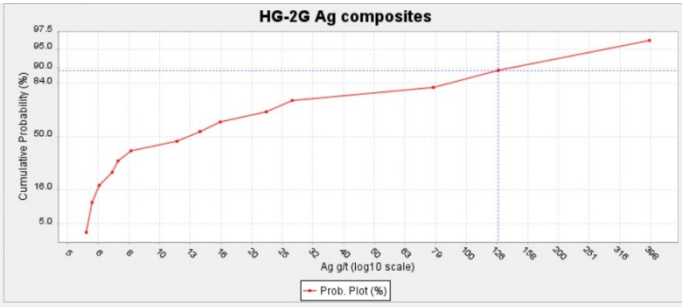
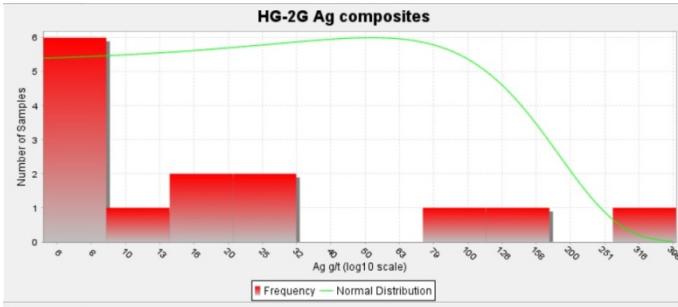






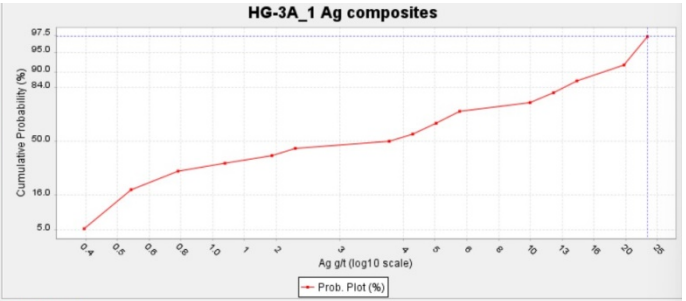
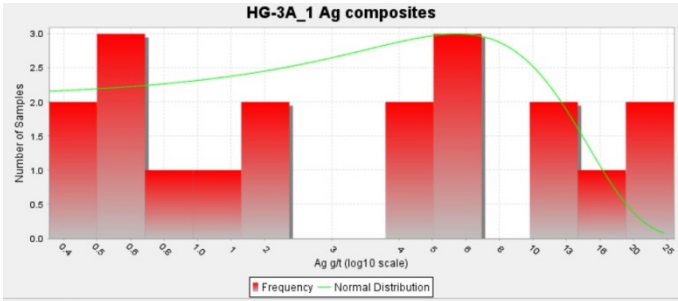
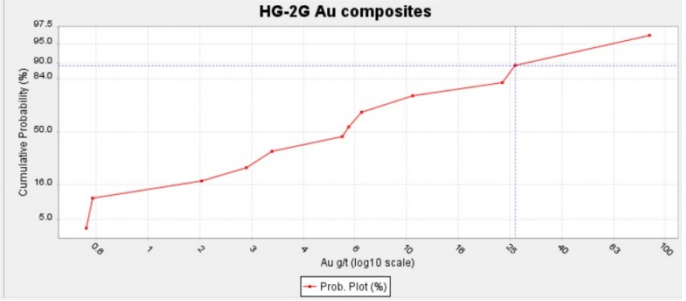
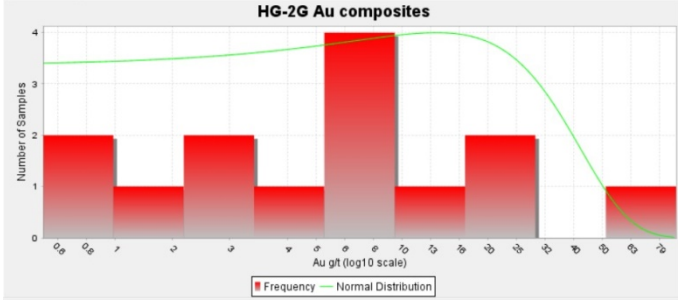






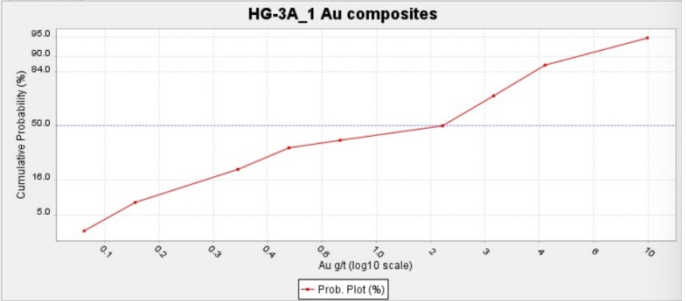
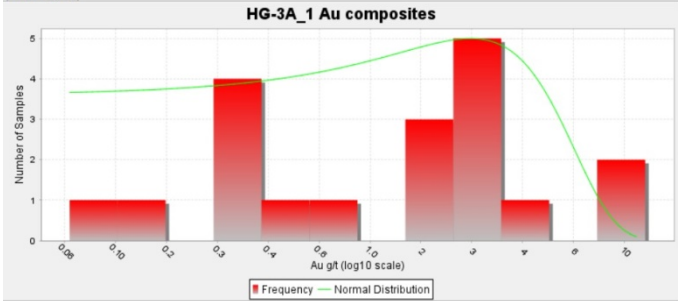
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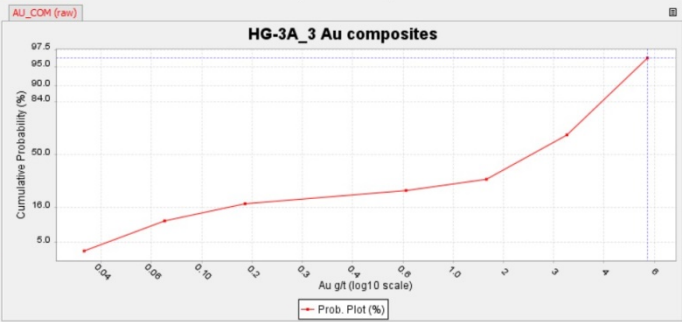
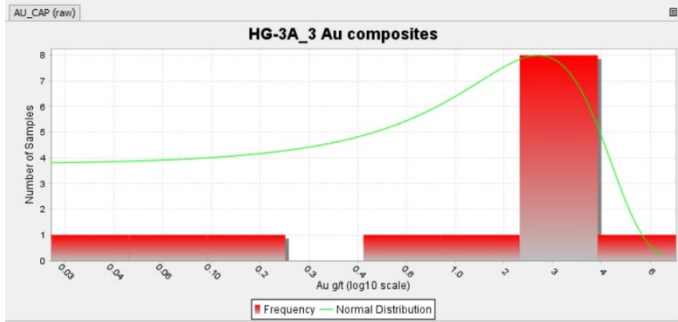
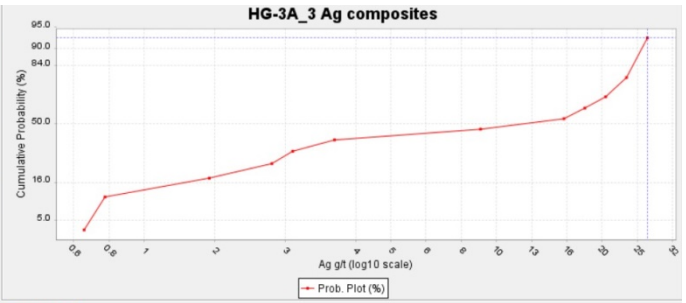
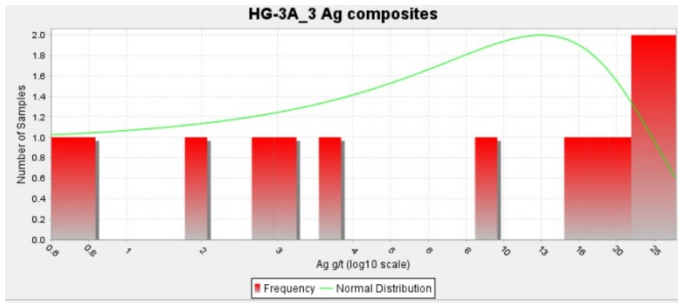
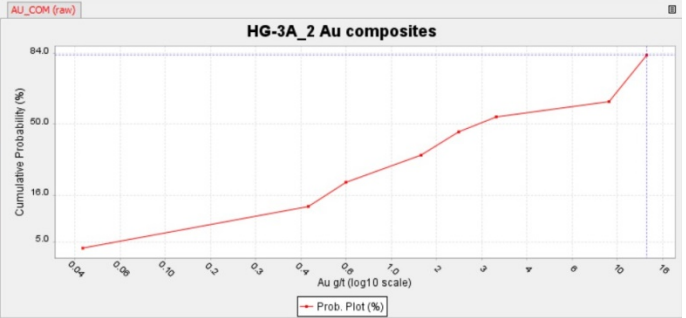
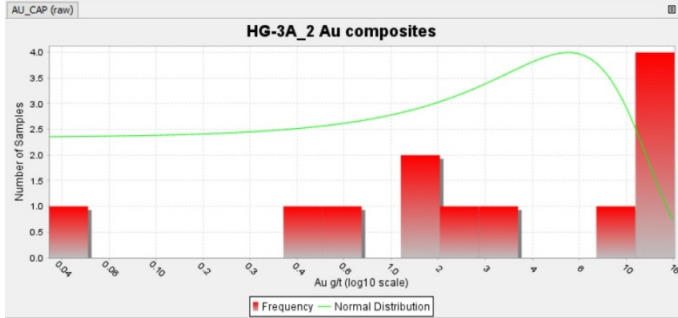
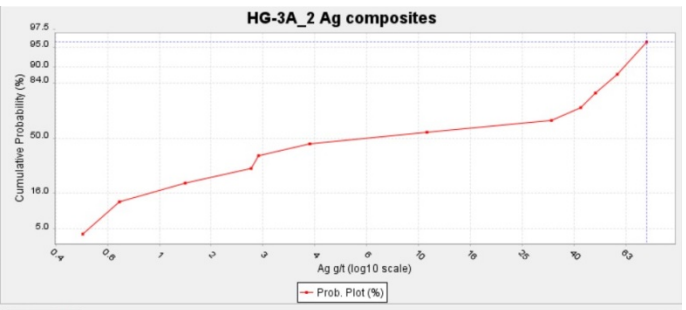
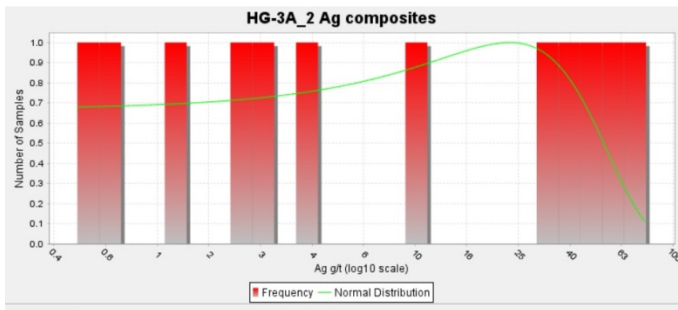
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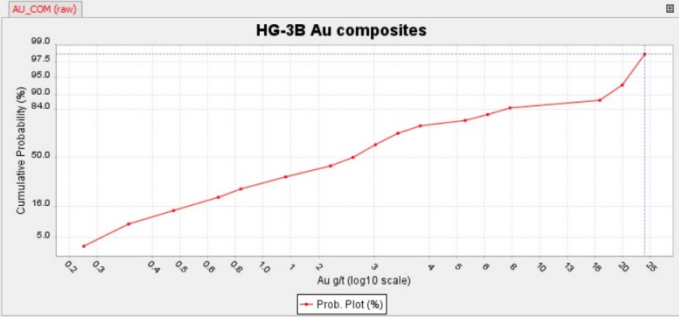
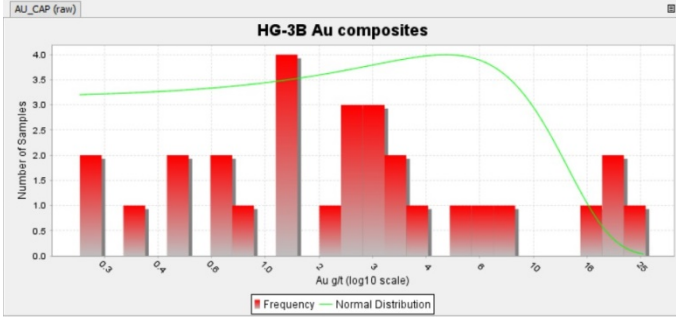
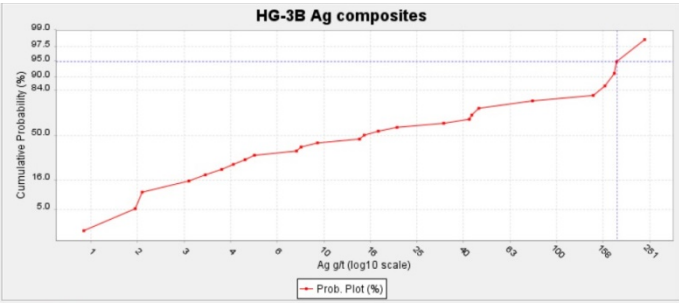
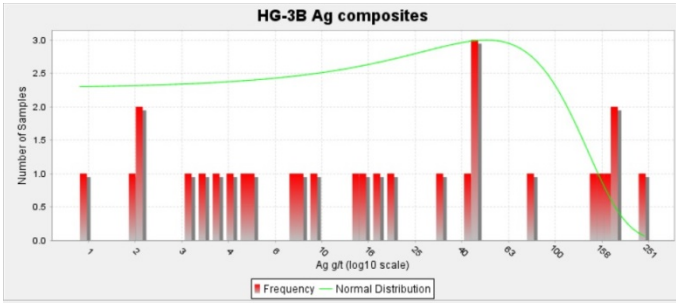


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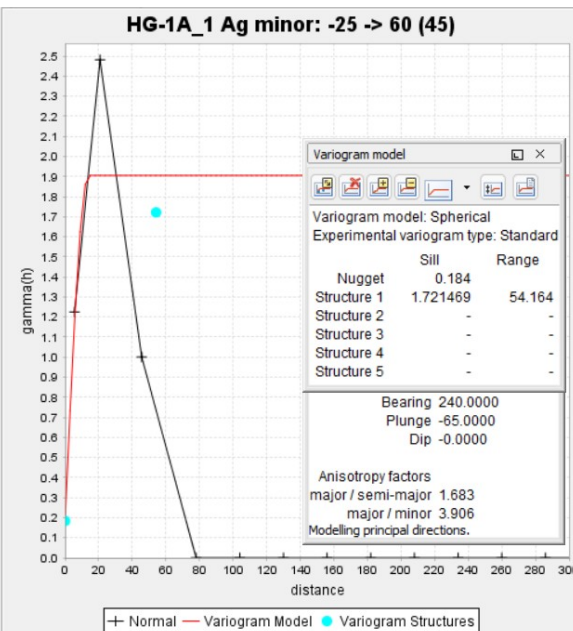
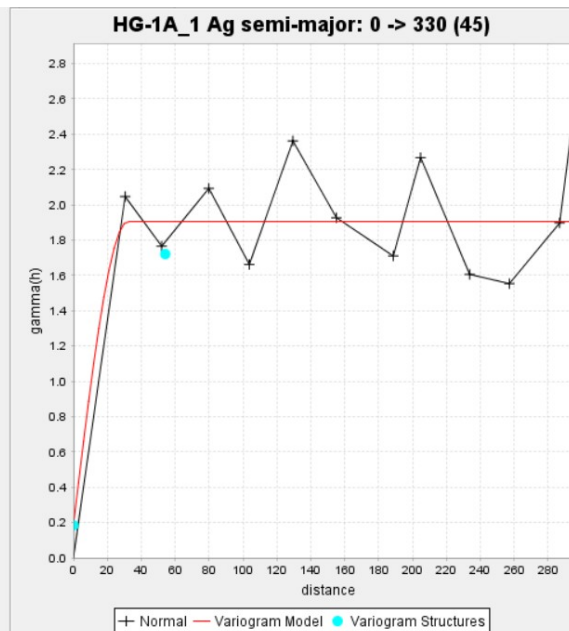
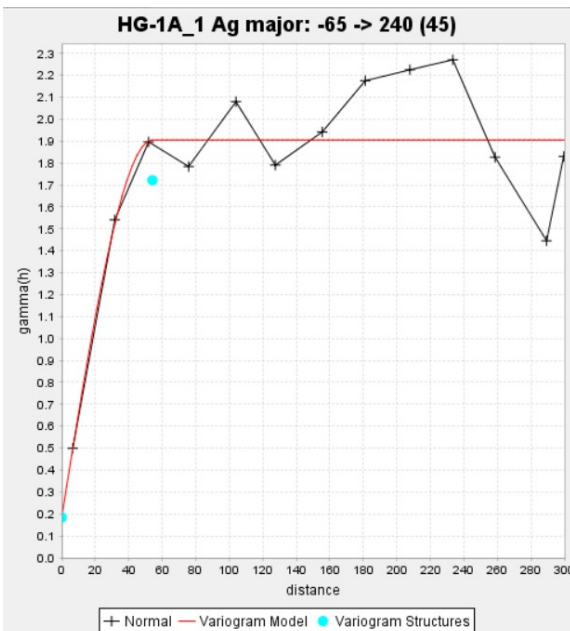
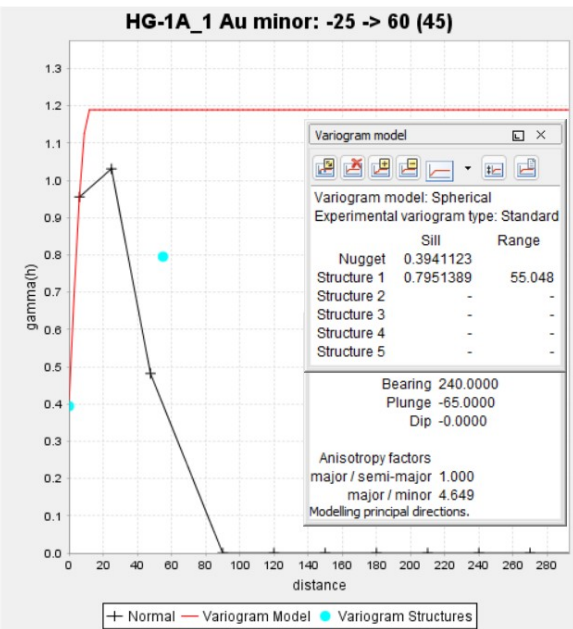
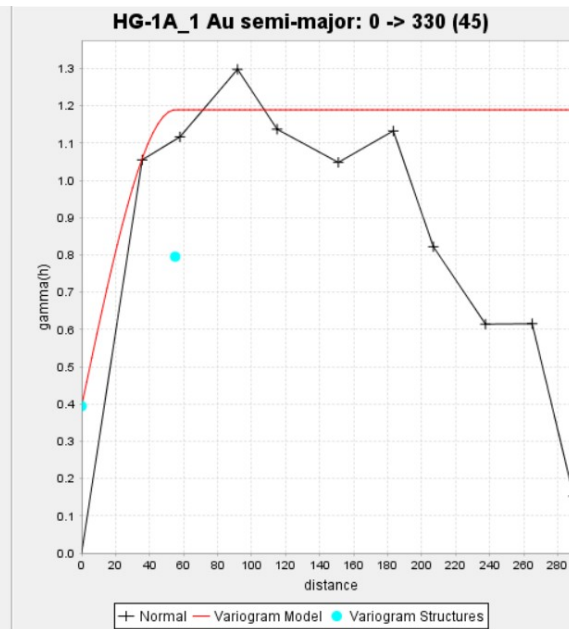
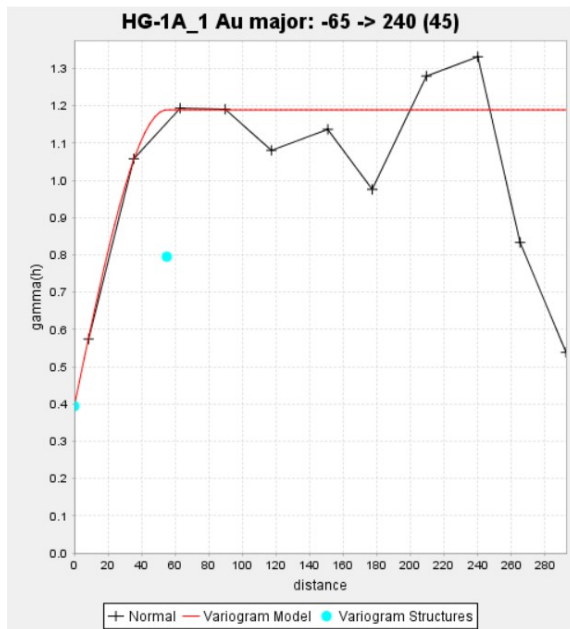
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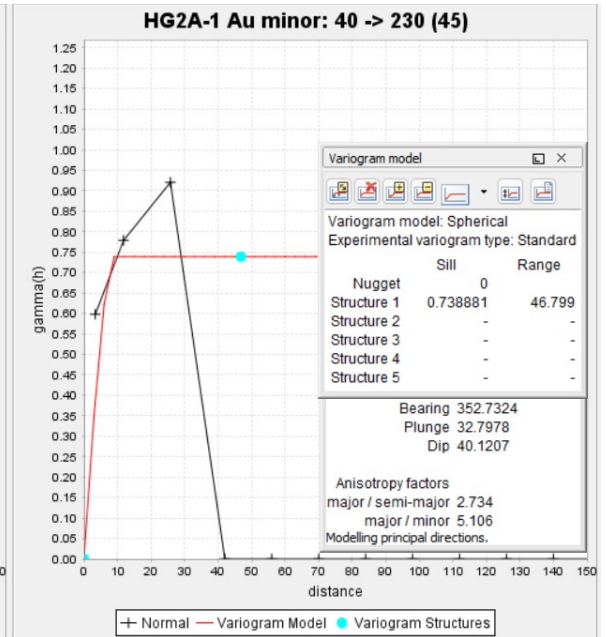
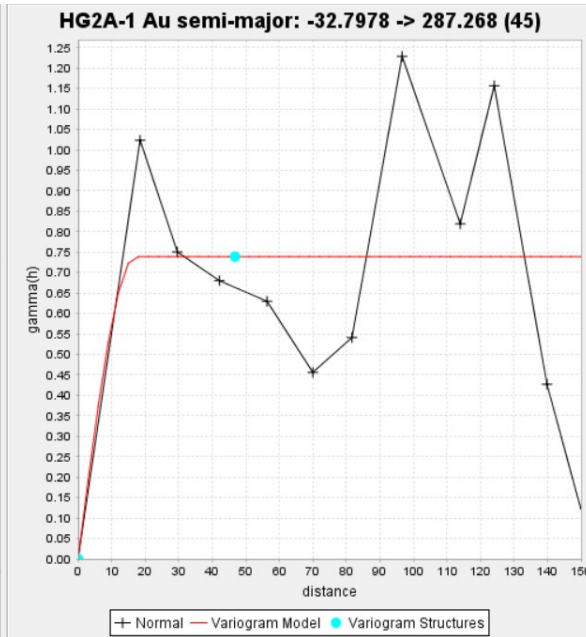
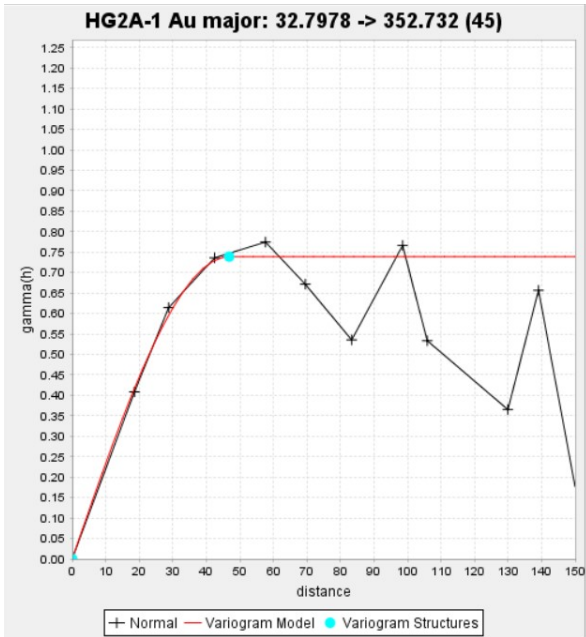




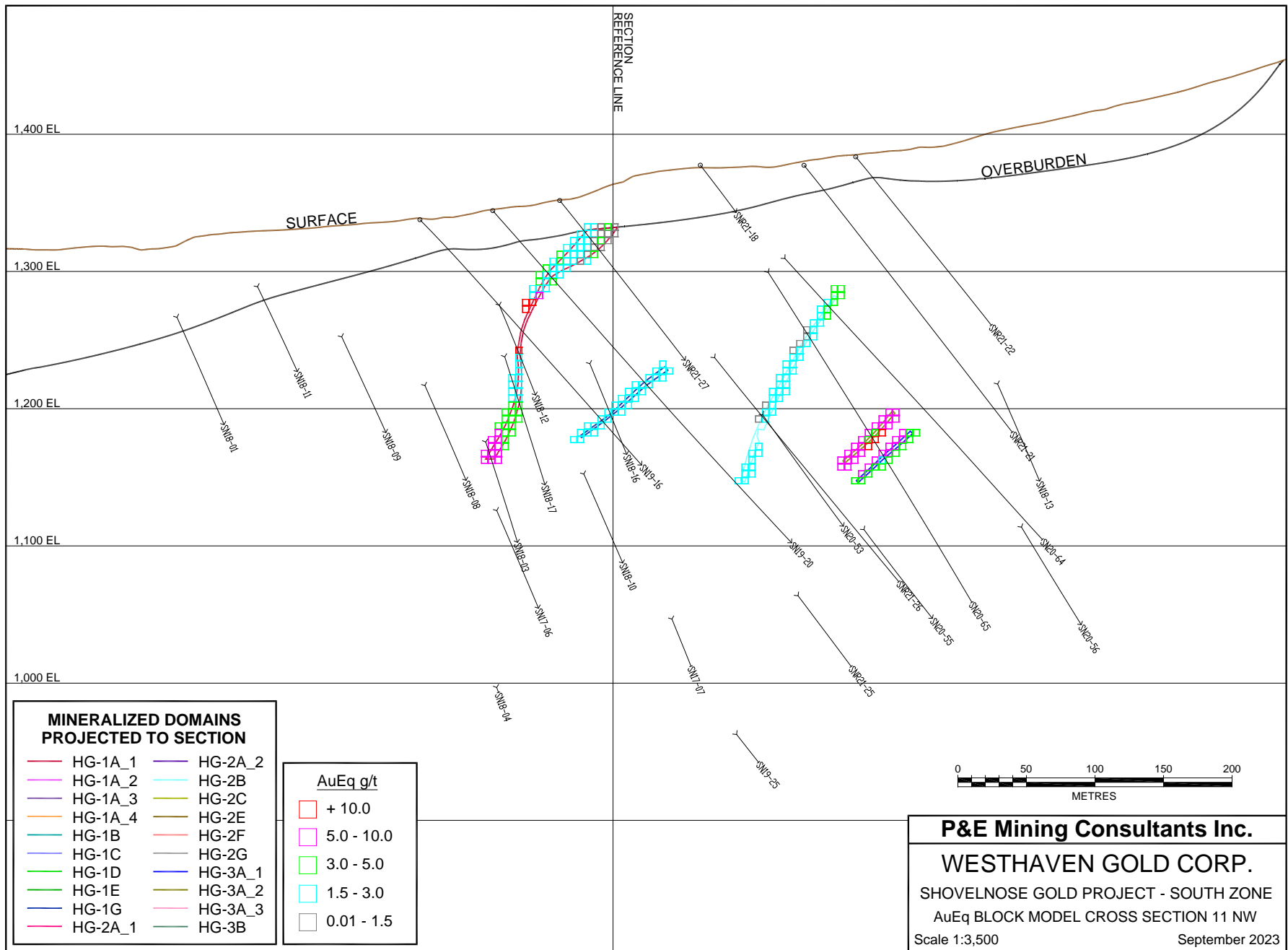
## APPENDIX D VARIOGRAMS

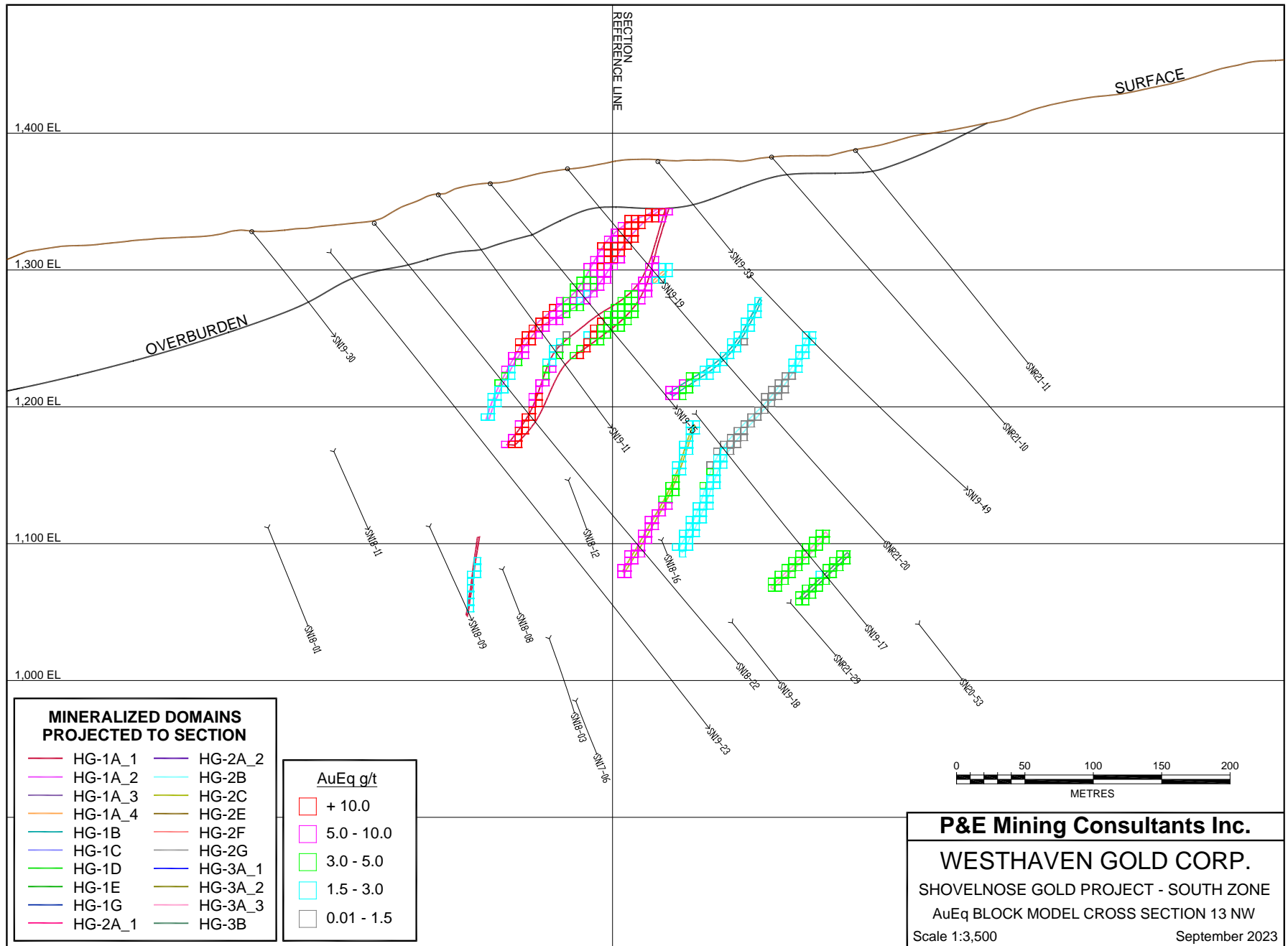


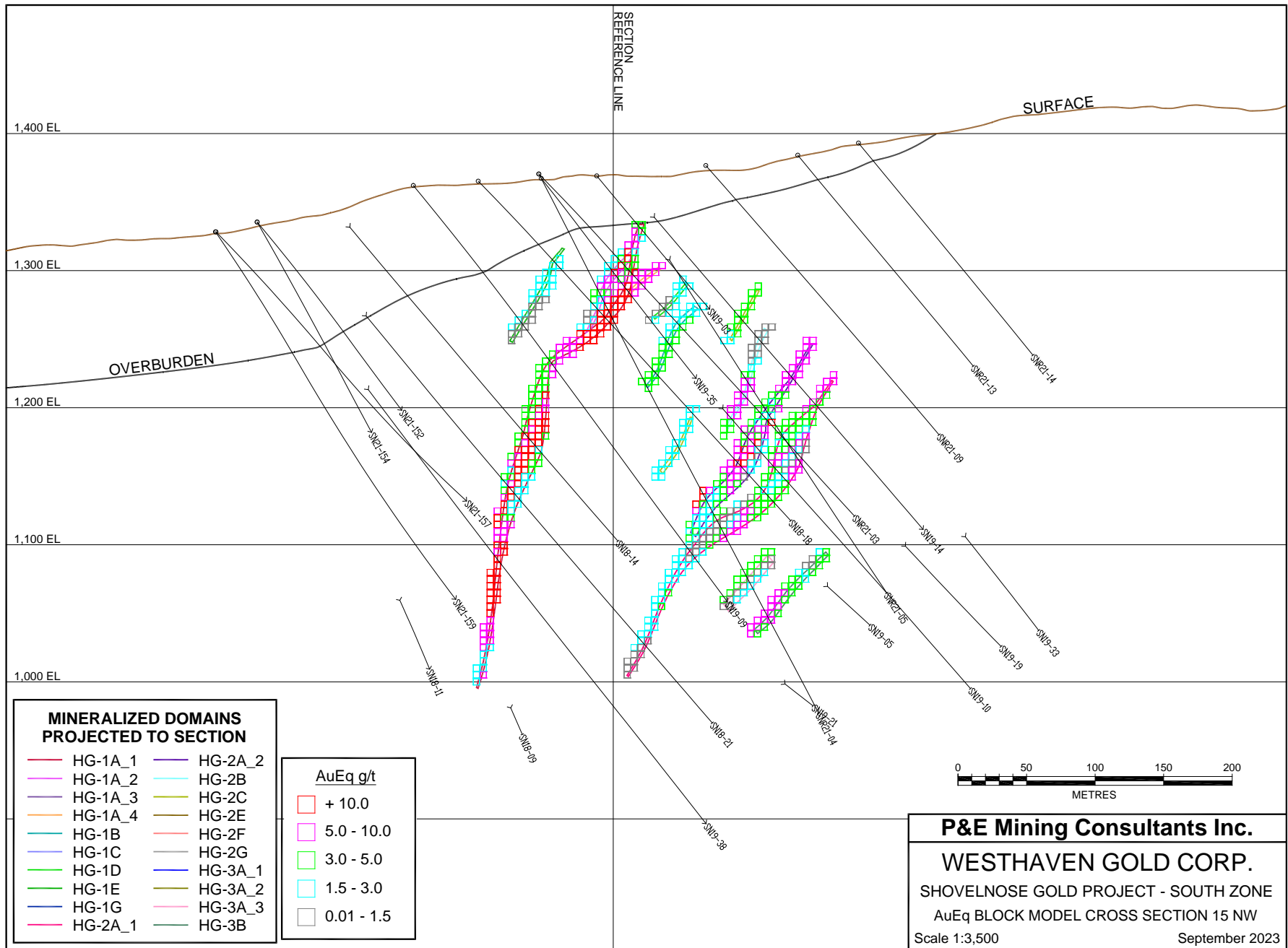


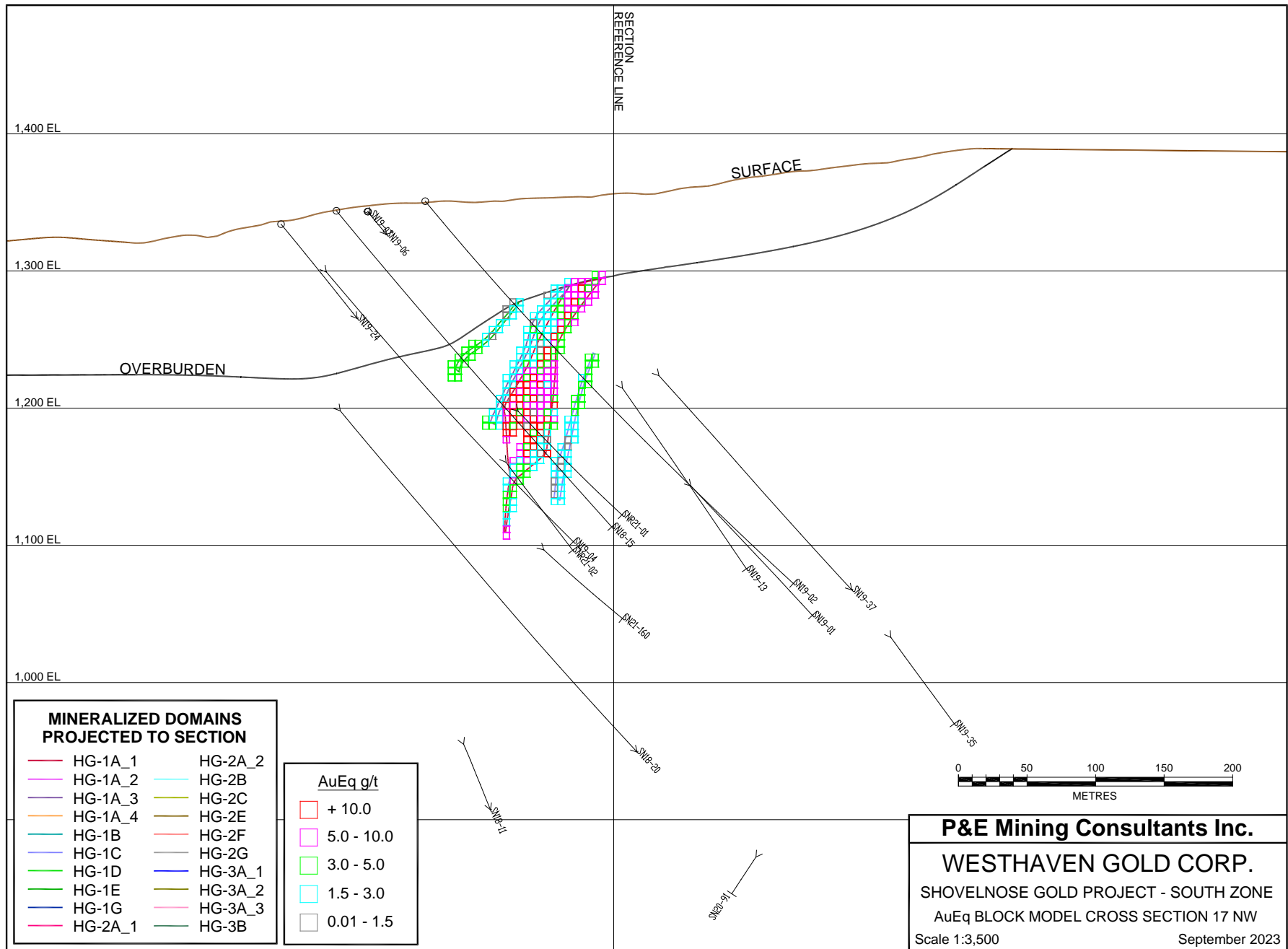


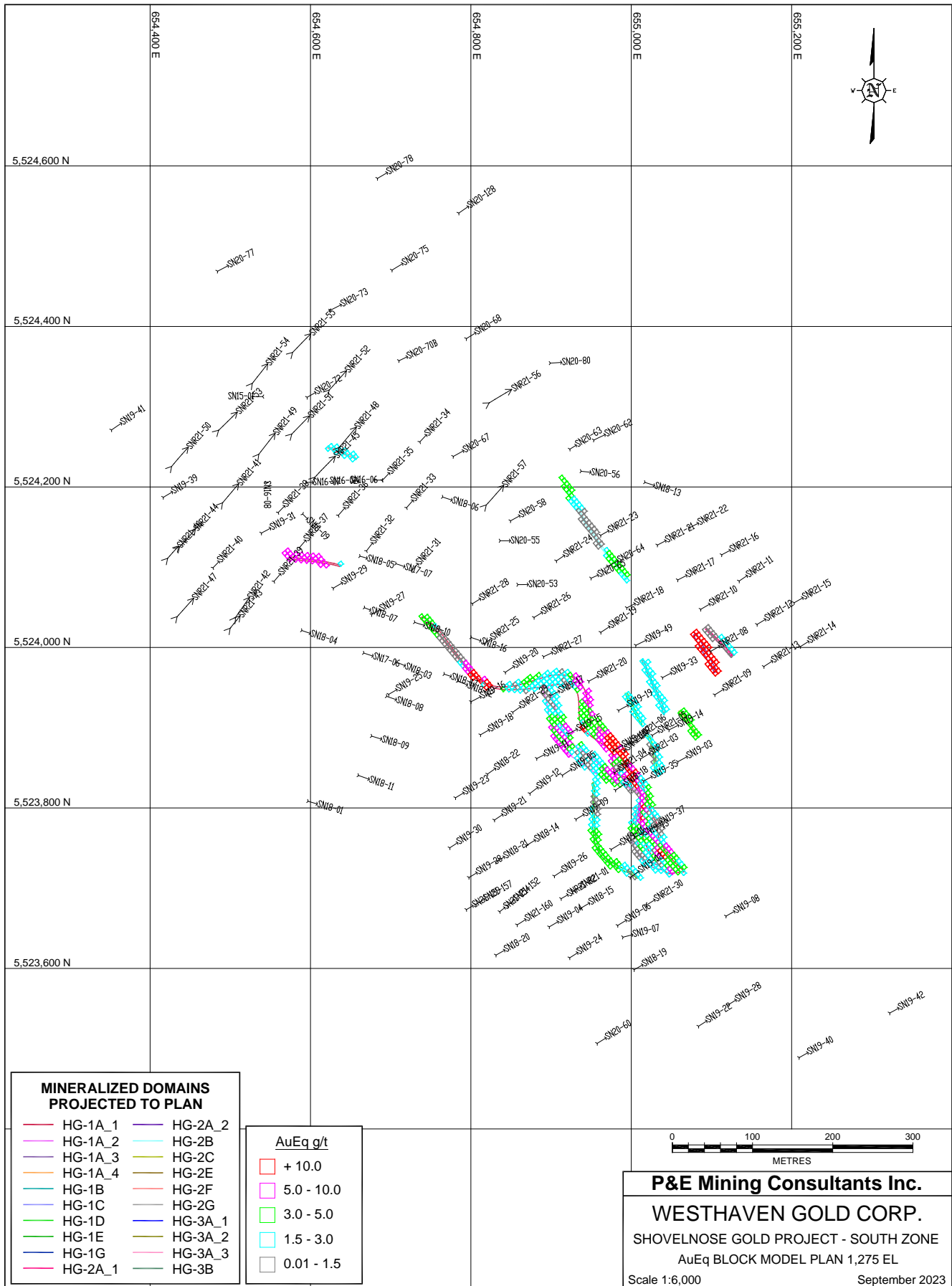
## **APPENDIX E AUEQ BLOCK MODEL CROSS-SECTIONS AND LEVEL PLANS**

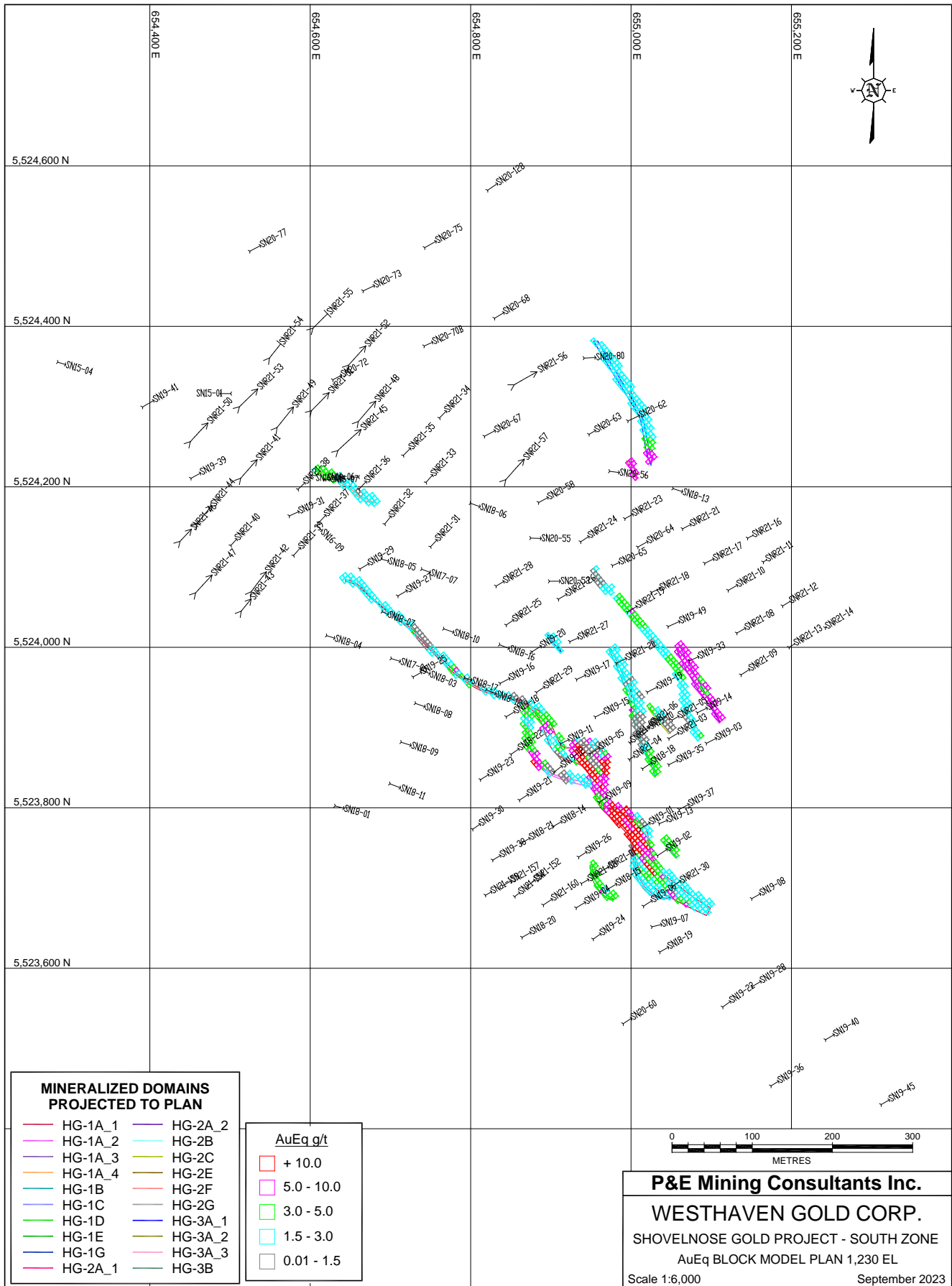




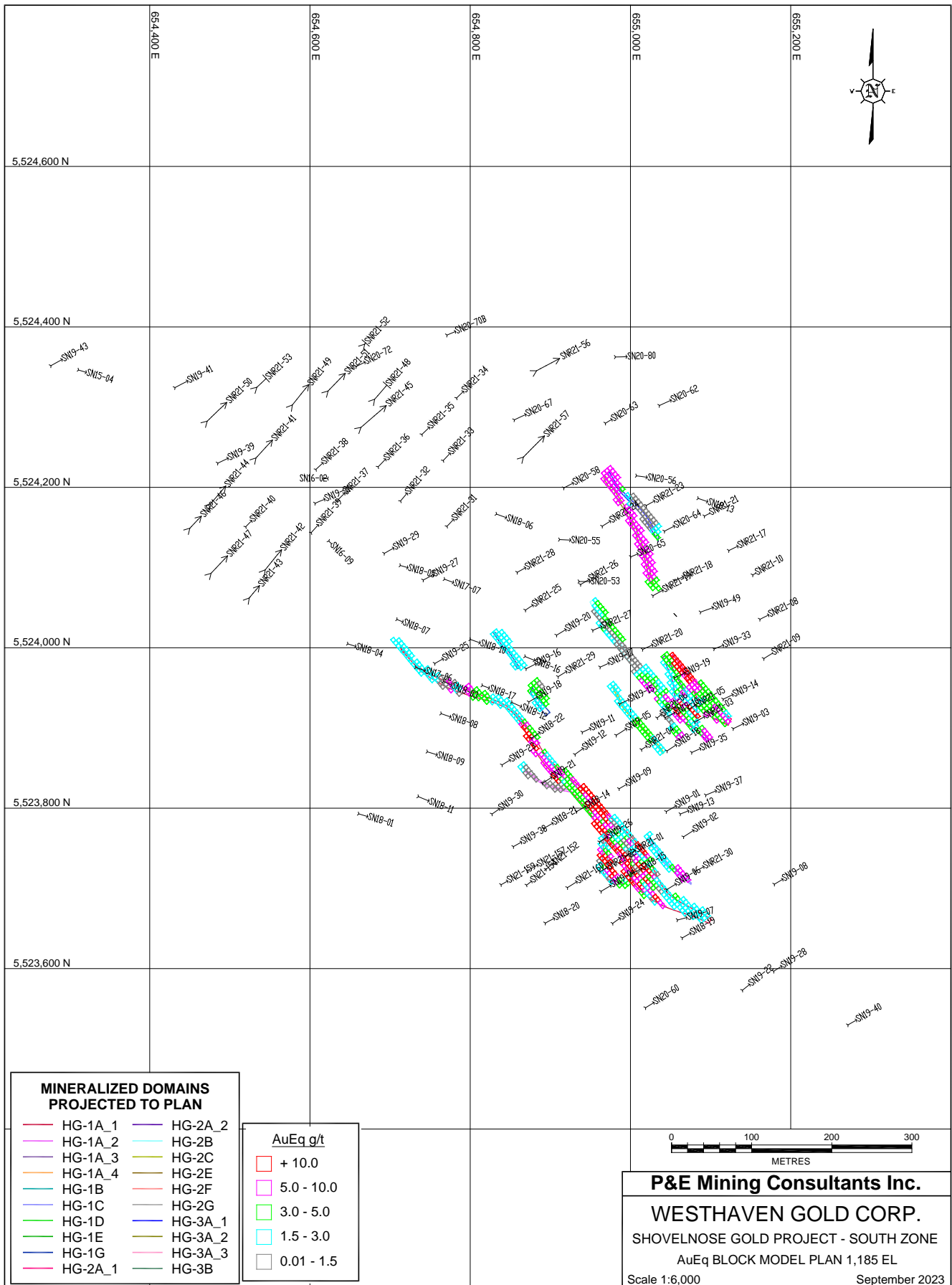


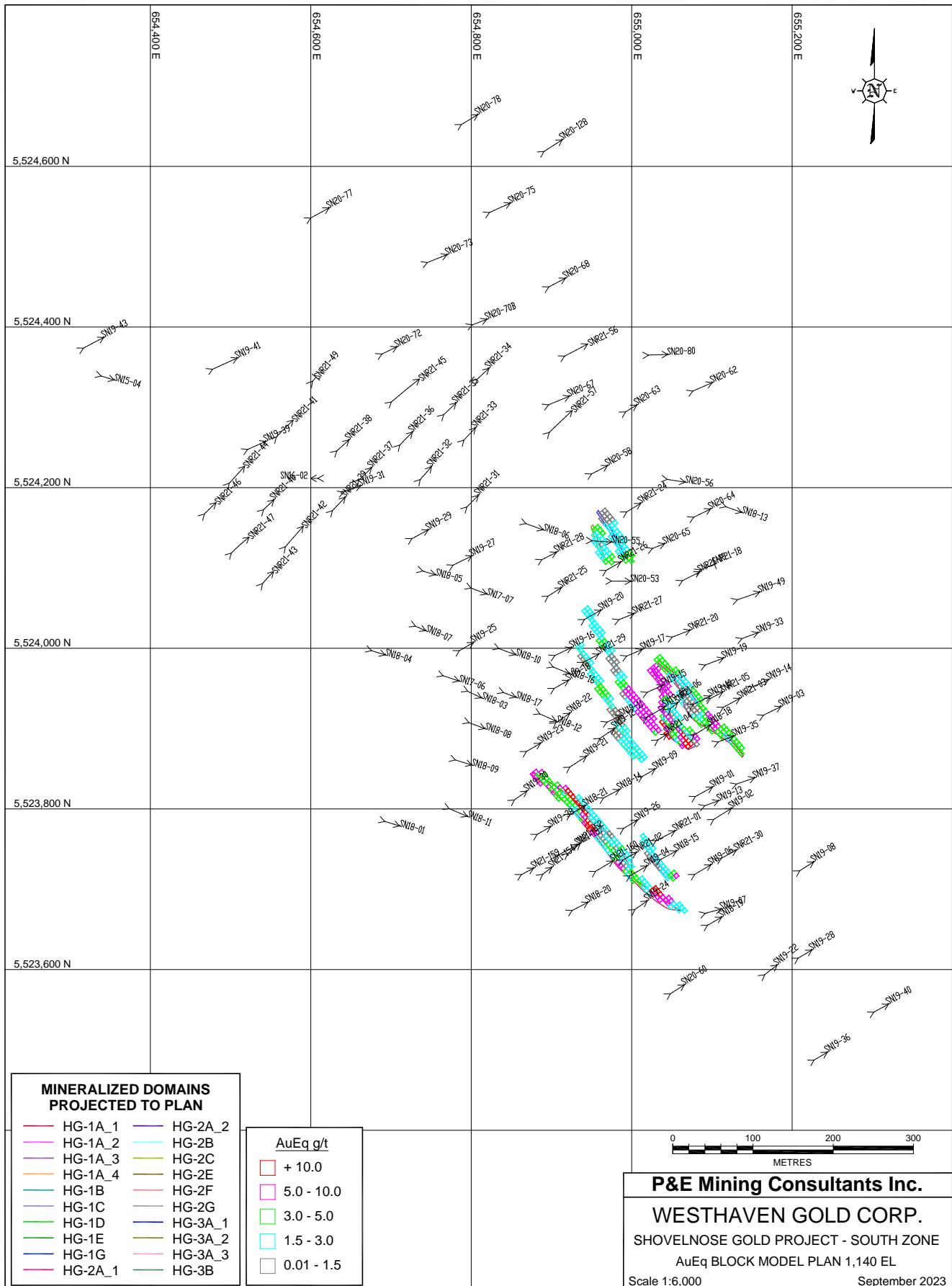




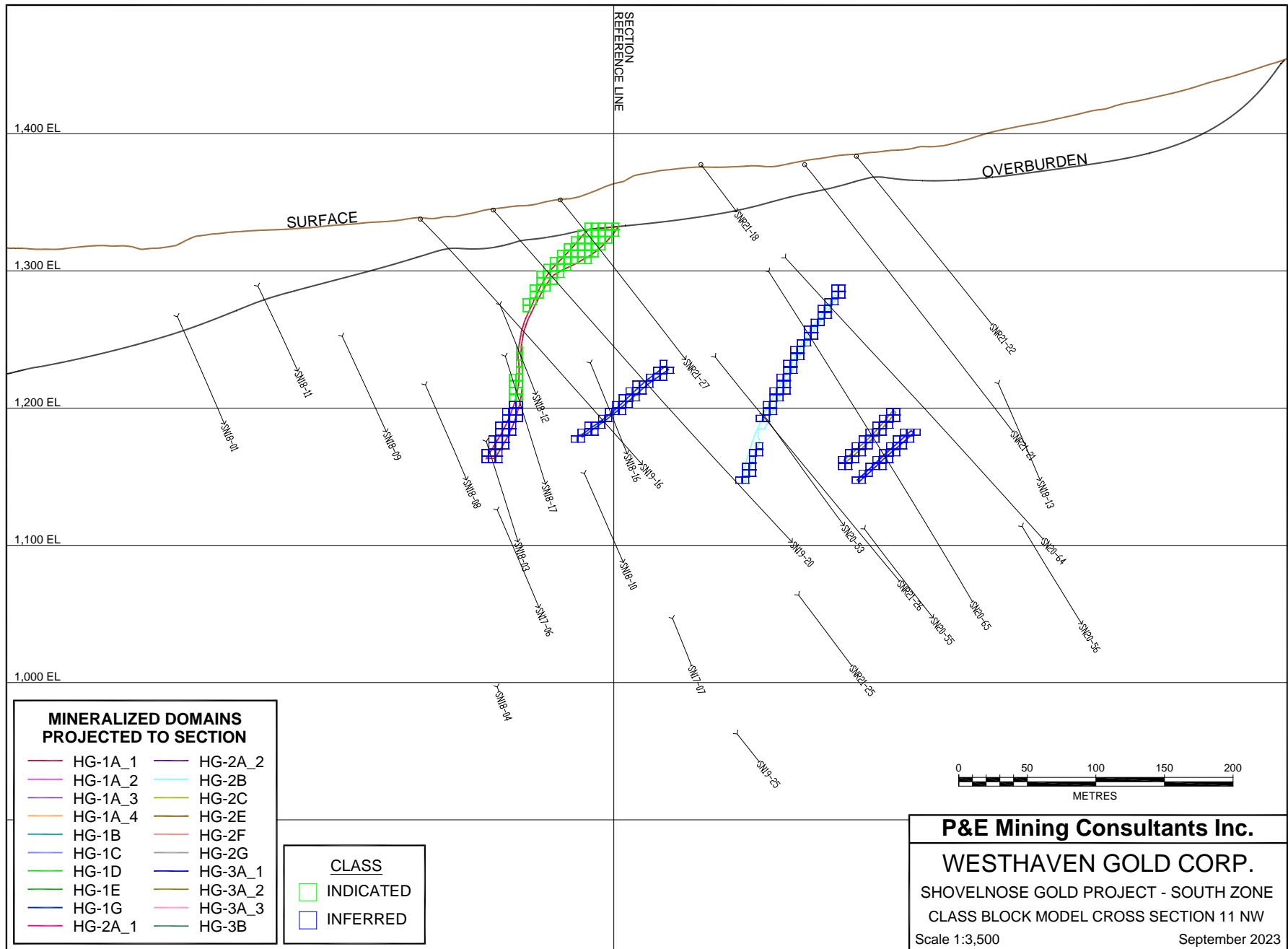


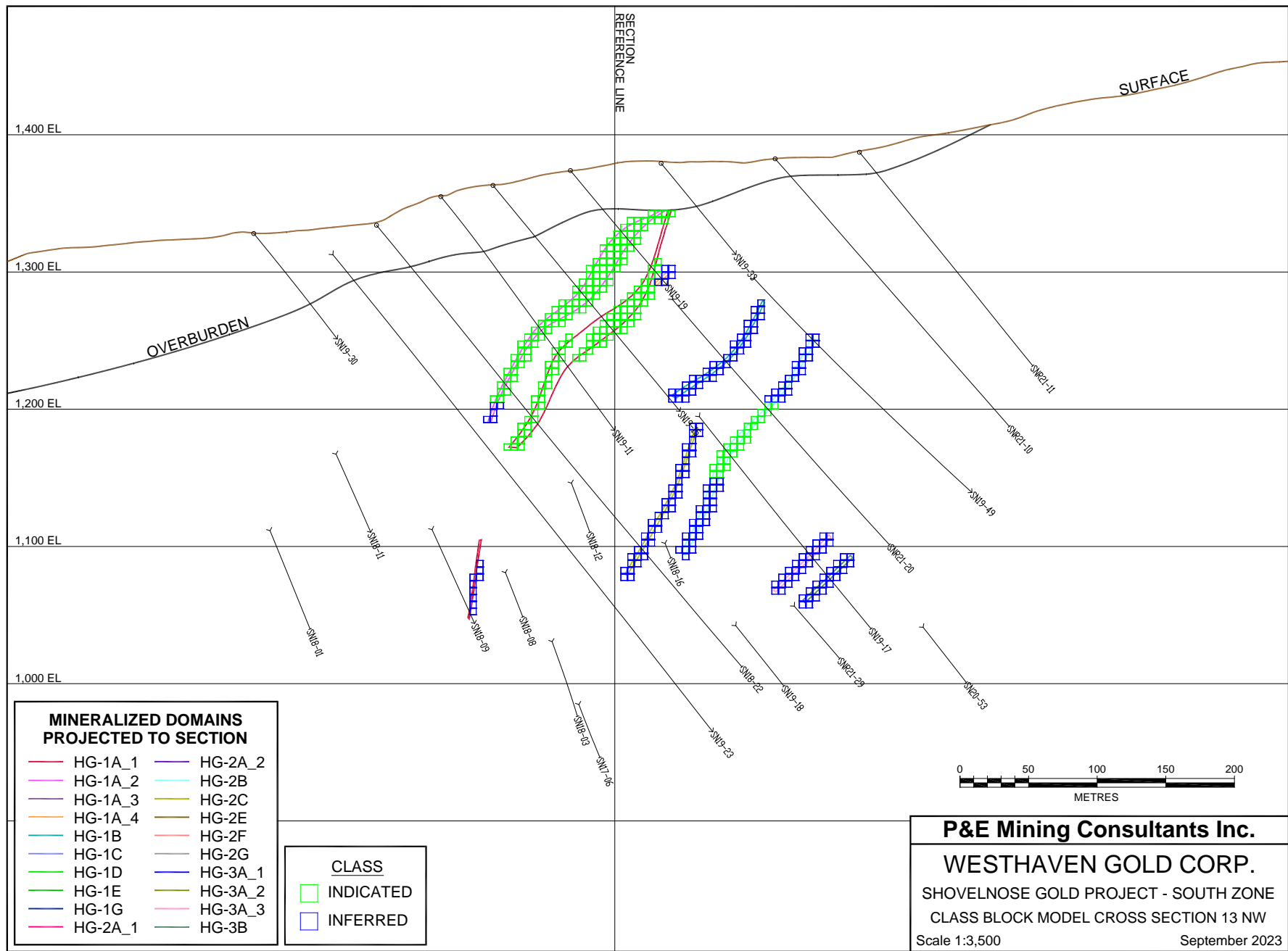


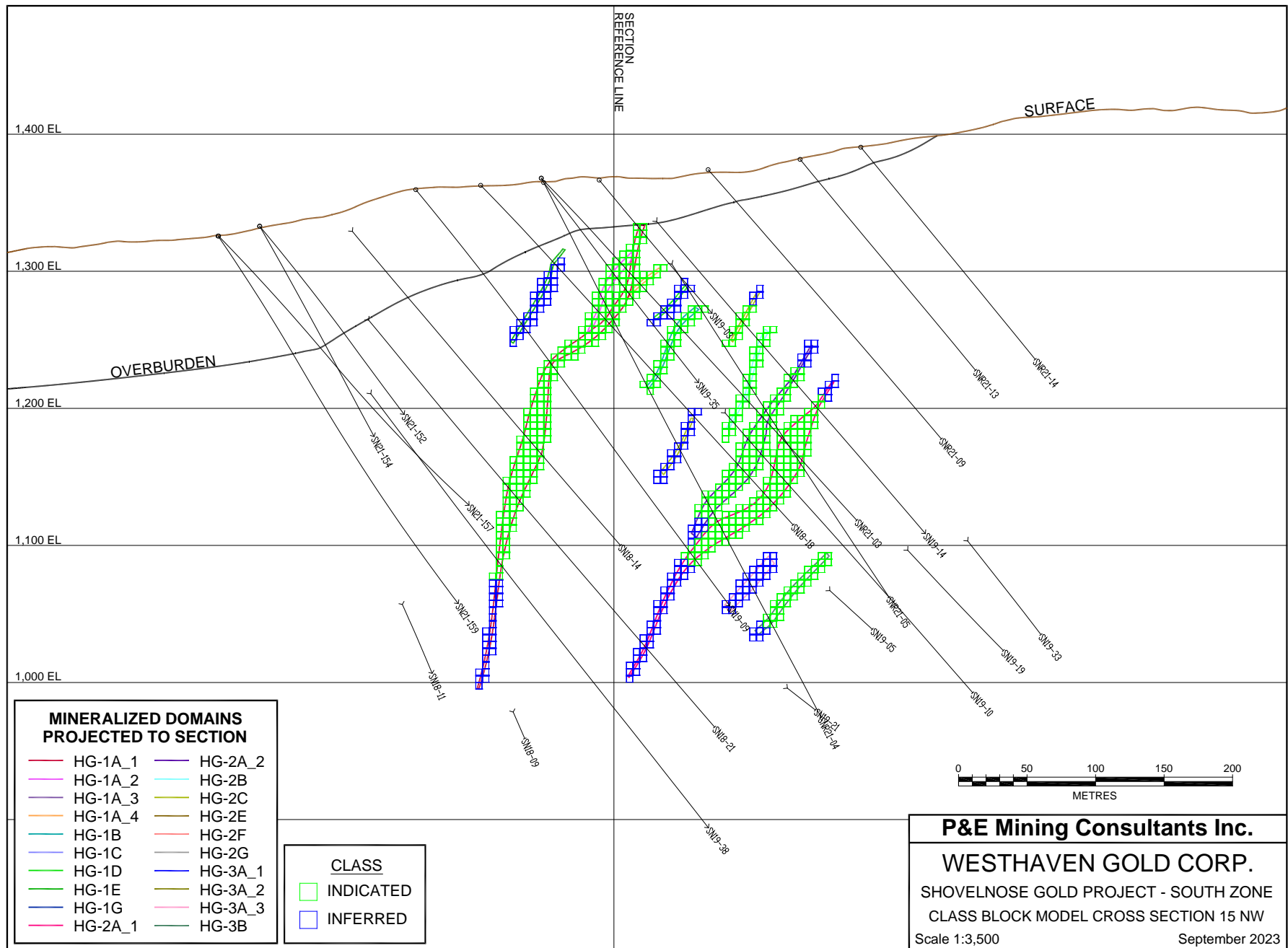


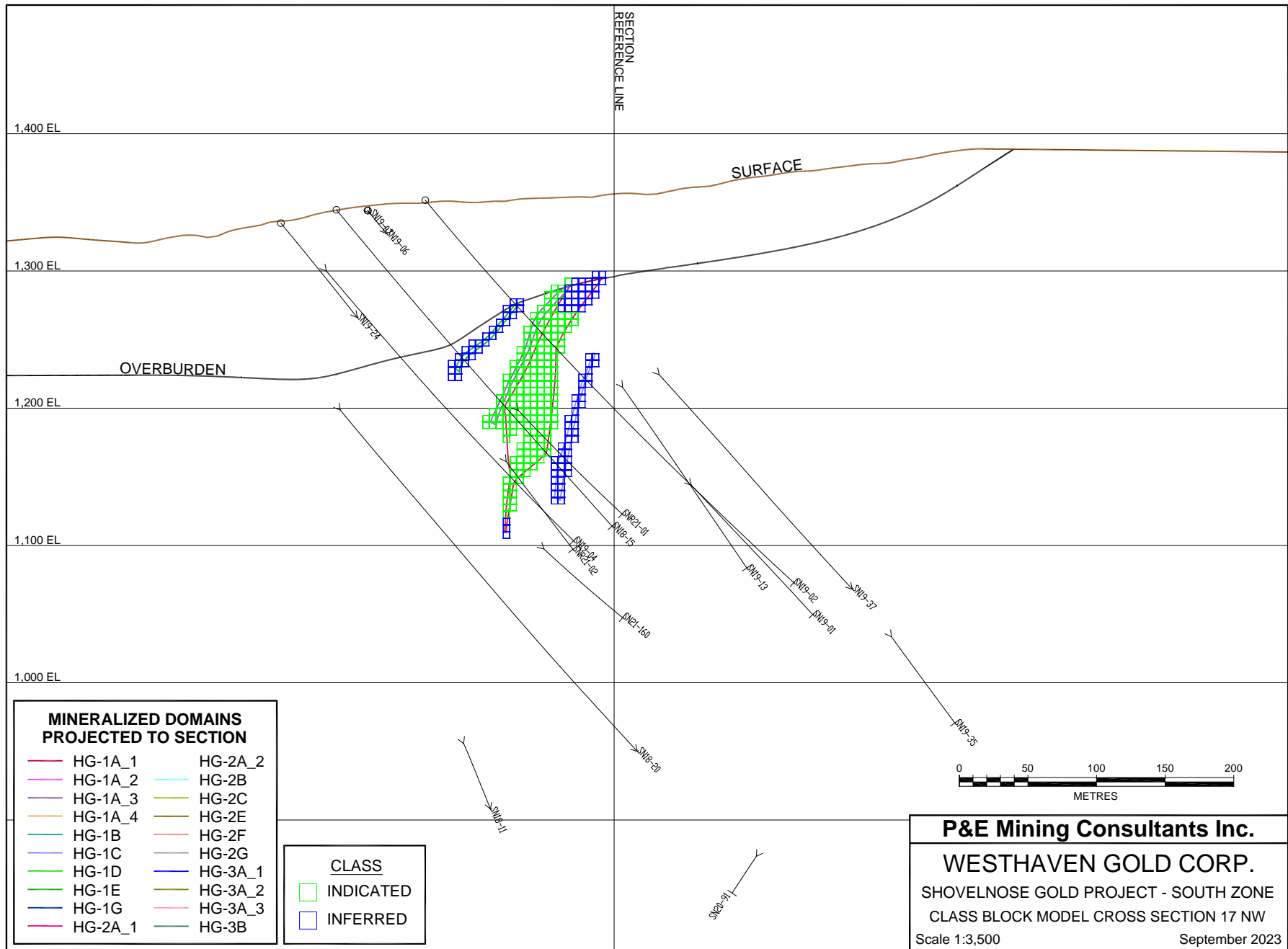


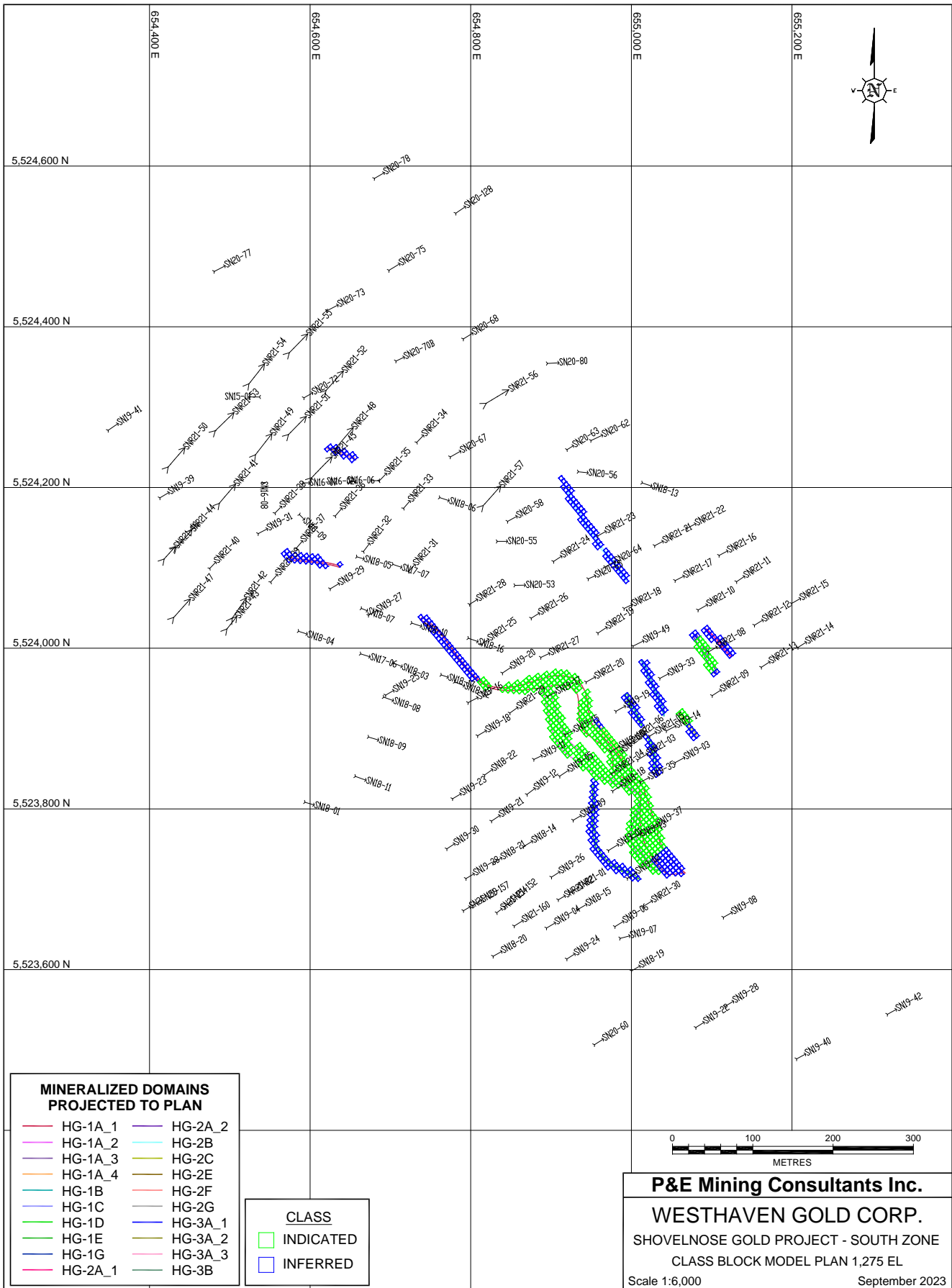
**APPENDIX F SELECT CLASS BLOCK MODEL CROSS-SECTIONS AND LEVEL PLANS**









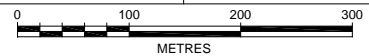


**MINERALIZED DOMAINS  
PROJECTED TO PLAN**

- |           |           |
|-----------|-----------|
| — HG-1A_1 | — HG-2A_2 |
| — HG-1A_2 | — HG-2B   |
| — HG-1A_3 | — HG-2C   |
| — HG-1A_4 | — HG-2E   |
| — HG-1B   | — HG-2F   |
| — HG-1C   | — HG-2G   |
| — HG-1D   | — HG-3A_1 |
| — HG-1E   | — HG-3A_2 |
| — HG-1G   | — HG-3A_3 |
| — HG-2A_1 | — HG-3B   |

**CLASS**

- |  |           |
|--|-----------|
| <span style="border: 1px solid green; display: inline-block; width: 10px; height: 10px;"></span> | INDICATED |
| <span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span>  | INFERRED  |



**P&E Mining Consultants Inc.**

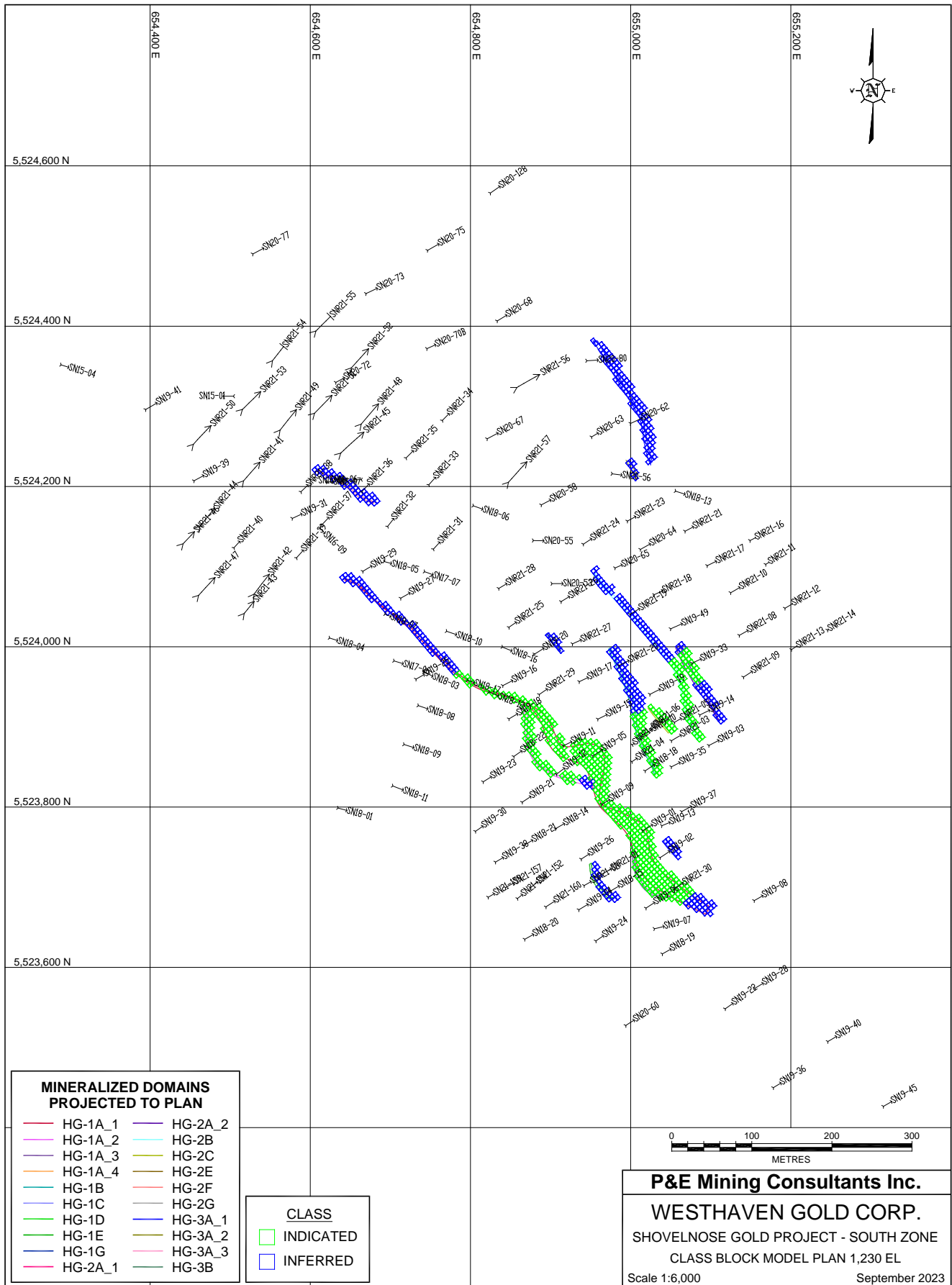
**WESTHAVEN GOLD CORP.**

SHOVELNOSE GOLD PROJECT - SOUTH ZONE  
CLASS BLOCK MODEL PLAN 1,275 EL

Scale 1:6,000

September 2023



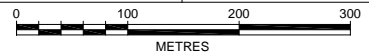


**MINERALIZED DOMAINS  
PROJECTED TO PLAN**

- |           |           |
|-----------|-----------|
| — HG-1A_1 | — HG-2A_2 |
| — HG-1A_2 | — HG-2B   |
| — HG-1A_3 | — HG-2C   |
| — HG-1A_4 | — HG-2E   |
| — HG-1B   | — HG-2F   |
| — HG-1C   | — HG-2G   |
| — HG-1D   | — HG-3A_1 |
| — HG-1E   | — HG-3A_2 |
| — HG-1G   | — HG-3A_3 |
| — HG-2A_1 | — HG-3B   |

**CLASS**

- |                                      |           |
|--------------------------------------|-----------|
| <span style="color: green;">■</span> | INDICATED |
| <span style="color: blue;">■</span>  | INFERRED  |



**P&E Mining Consultants Inc.**

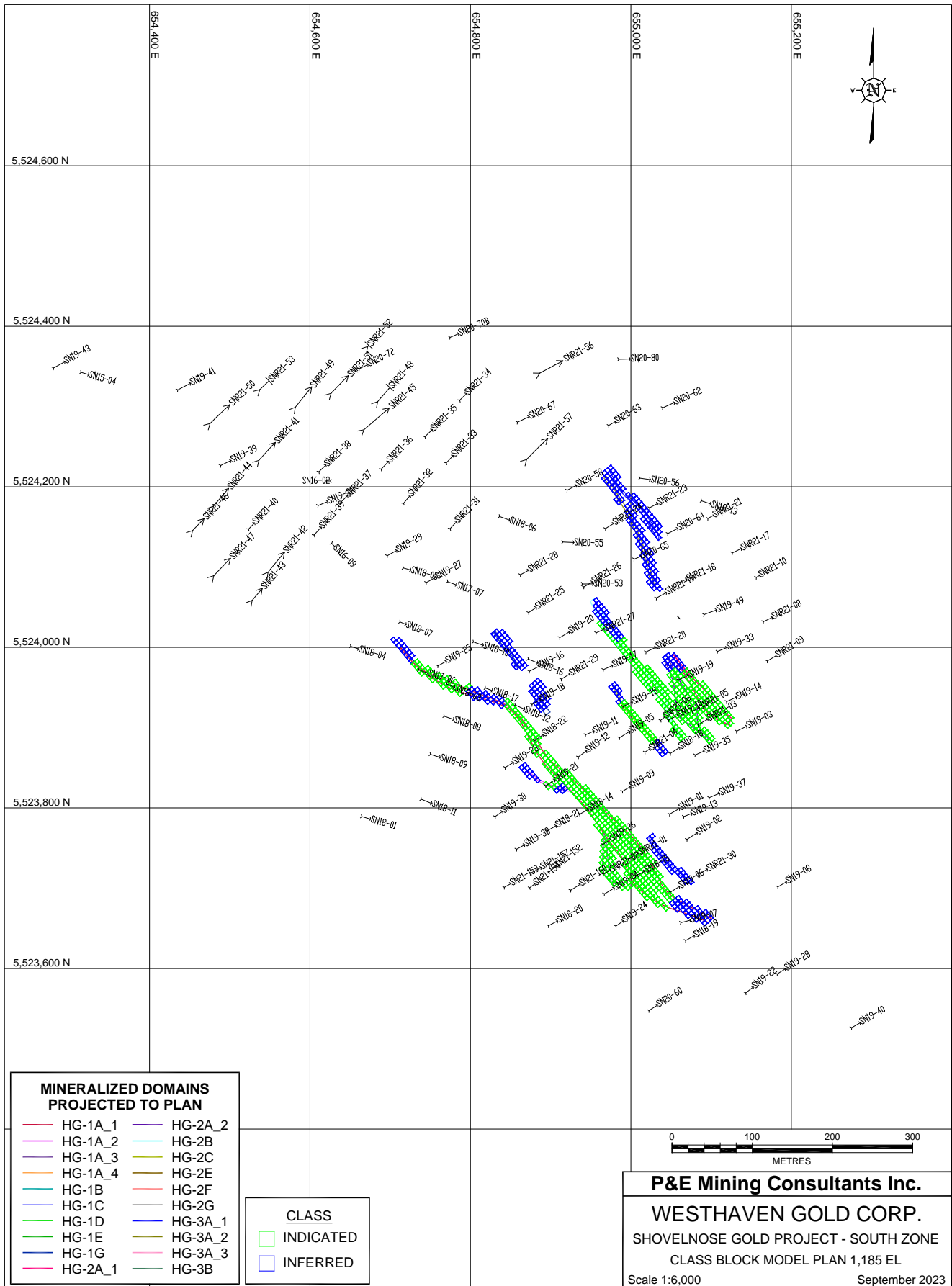
**WESTHAVEN GOLD CORP.**

SHOVELNOSE GOLD PROJECT - SOUTH ZONE

CLASS BLOCK MODEL PLAN 1,230 EL

Scale 1:6,000

September 2023

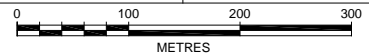


**MINERALIZED DOMAINS  
PROJECTED TO PLAN**

- |           |           |
|-----------|-----------|
| — HG-1A_1 | — HG-2A_2 |
| — HG-1A_2 | — HG-2B   |
| — HG-1A_3 | — HG-2C   |
| — HG-1A_4 | — HG-2E   |
| — HG-1B   | — HG-2F   |
| — HG-1C   | — HG-2G   |
| — HG-1D   | — HG-3A_1 |
| — HG-1E   | — HG-3A_2 |
| — HG-1G   | — HG-3A_3 |
| — HG-2A_1 | — HG-3B   |

**CLASS**

- |                                      |           |
|--------------------------------------|-----------|
| <span style="color: green;">■</span> | INDICATED |
| <span style="color: blue;">■</span>  | INFERRED  |



**P&E Mining Consultants Inc.**

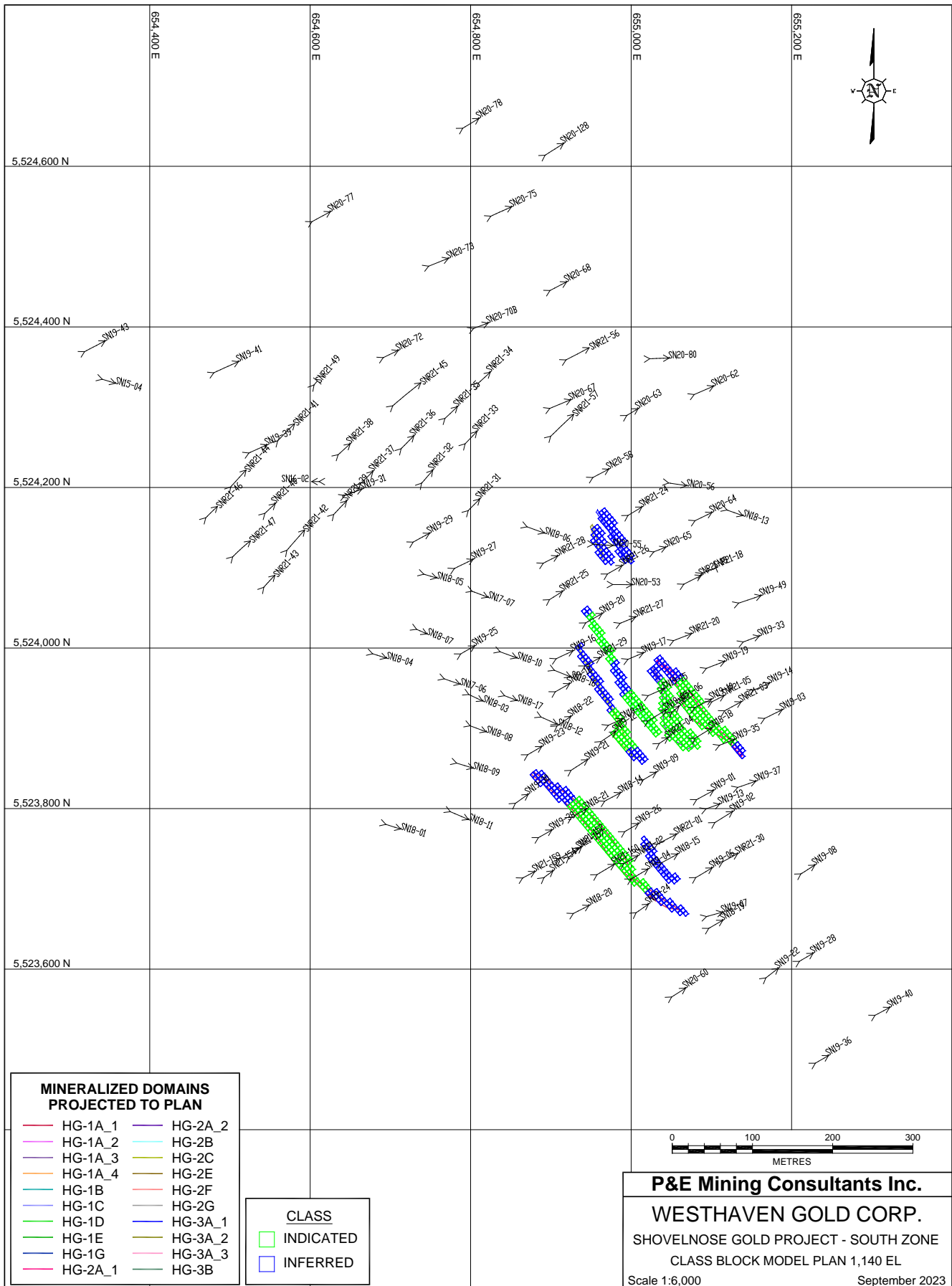
**WESTHAVEN GOLD CORP.**

SHOVELNOSE GOLD PROJECT - SOUTH ZONE

CLASS BLOCK MODEL PLAN 1,185 EL

Scale 1:6,000

September 2023



**APPENDIX G UNDERGROUND MINE DESIGN LEVEL PLANS**

