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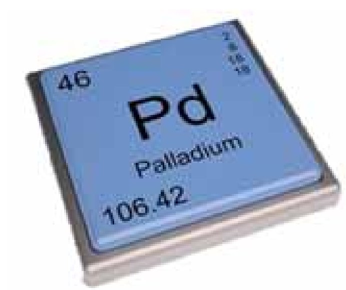
TECHNICAL REPORT, UPDATED MINERAL RESOURCE ESTIMATE OF THE MARATHON DEPOSIT, THUNDER BAY MINING DISTRICT NORTHWESTERN ONTARIO, CANADA

48° 45’ N Latitude, 86° 19’ W Longitude

FOR
GENERATION MINING LIMITED

NI 43-101 & 43-101F1
TECHNICAL REPORT

GENERATION MINING



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P&E Mining Consultants Inc.
Report 362

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IMPORTANT NOTICE

This report was prepared as a National Instrument 43-101 Technical Report, in accordance with Form 43-101F1, for Generation Mining Limited ("Gen Mining") by P&E Mining Consultants Inc. ("P&E"). The quality of information, conclusions and estimates contained herein is consistent with the level of effort involved in P&E's services and based on: i) information available at the time of preparation; ii) data supplied by outside sources; and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended to be used by Gen Mining, subject to the terms and conditions of its contract with P&E. This contract permits Gen Mining to file this report as a Technical Report with Canadian Securities Regulatory Authorities pursuant to National Instrument 43-101, Standards of Disclosure for Mineral Projects. Any other use of this report by any third party is at that party's sole risk.

1.0 SUMMARY

The following report (the "Technical Report") presents an updated Mineral Resource Estimate prepared by P&E Mining Consultants Inc. ("P&E") regarding the Marathon Deposit (the "Project" or "Marathon Project") of the Marathon Palladium-Copper Property, Marathon, Ontario, Canada (the "Property"). This Technical Report was prepared pursuant to the requirements of Canadian National Instrument ("NI") 43-101. The updated P&E Mineral Resource Estimate contained in this Technical Report was prepared in accordance with the guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Standards on Mineral Resources and Reserves, Definitions and Guidelines.

1.1 INTRODUCTION

Generation Mining Limited ("Gen Mining" or "the Company") retained P&E Mining Consultants Inc. to prepare this updated independent NI 43-101 Technical Report and Mineral Resource Estimate on Gen Mining's Marathon Palladium-Copper Property located near Marathon, Ontario, Canada. P&E understands this Technical Report will be used in support of Generation's preparations to proceed to a Preliminary Economic Assessment ("PEA") and for possible financing purposes. In preparing this Technical Report, P&E reviewed a key internal (non-public) document titled "Technical Report and Updated Resource Estimate on the Marathon PGM-Cu Project" – previously written for Stillwater Canada Inc. and prepared by P&E, effective date of October 1, 2012.

1.2 PROPERTY DESCRIPTION LOCATION

The Marathon Property is located approximately 10 kilometres ("km") north of the Town of Marathon, Ontario which is situated adjacent to the Trans-Canada Highway No. 17 on the northeast shore of Lake Superior. Thunder Bay, a major industrial city with a population of 100,000 people is located approximately 300 km westward along Highway 17 while Sault Ste-Marie is approximately 400 km to the southeast along the same Highway 17. Marathon has a population of approximately 3,100 (2016 Census, Statistics Canada). Property access is by an all-weather gravel road from highway 17 (Figure 1.1), which lies just north of Marathon and immediately south of the Property. The centre of the proposed Project footprint sits at approximately 48° 45' N Latitude, 86° 19' W Longitude.

Gen Mining owns a 51% interest (with an option to earn up to an 80% interest) through a Joint Venture arrangement) in the Marathon Deposit and the Property from Stillwater Canada Inc. (a wholly owned subsidiary of Sibanye Gold Ltd., trading as Sibanye-Stillwater Limited). This increase in ownership would be through spending of $10 million and preparing a Preliminary Economic Assessment within 4 years of the Property acquisition date marked as July 11, 2019. Gen Mining acts as the operator of the joint venture.

FIGURE 1.1 REGIONAL LOCATION MAP

Source: *Marathon PGM Corp. (2006)*

Upon Gen Mining completing a Definitive Feasibility Study and making a positive commercial production decision, and so long as Sibanye-Stillwater has a minimum 20% interest in the Property, then Sibanye-Stillwater will have 90 days to increase its ownership from 20% to a total of 51% interest by, within 90 days of the Commercial Decision Date, agreeing to fund 31% of the total capital costs as estimated in the definitive feasibility study, after which Sibanye-Stillwater and Gen Mining will contribute the remaining funds on a 51%:49% basis.

On July 11, 2019 Generation Mining Limited had (through a wholly-owned subsidiary), completed the acquisition of a 51% initial interest in the Marathon Property, from Stillwater

Canada Inc. ("Stillwater"), a wholly owned subsidiary of Sibanye Gold Limited, and entered into a joint venture agreement with respect to the Property. Gen Mining can increase its interest in the Property and joint venture to 80% (the "Second Interest") by spending $10 million and preparing a Preliminary Economic Assessment within four years (the "Second Earn-In Period").

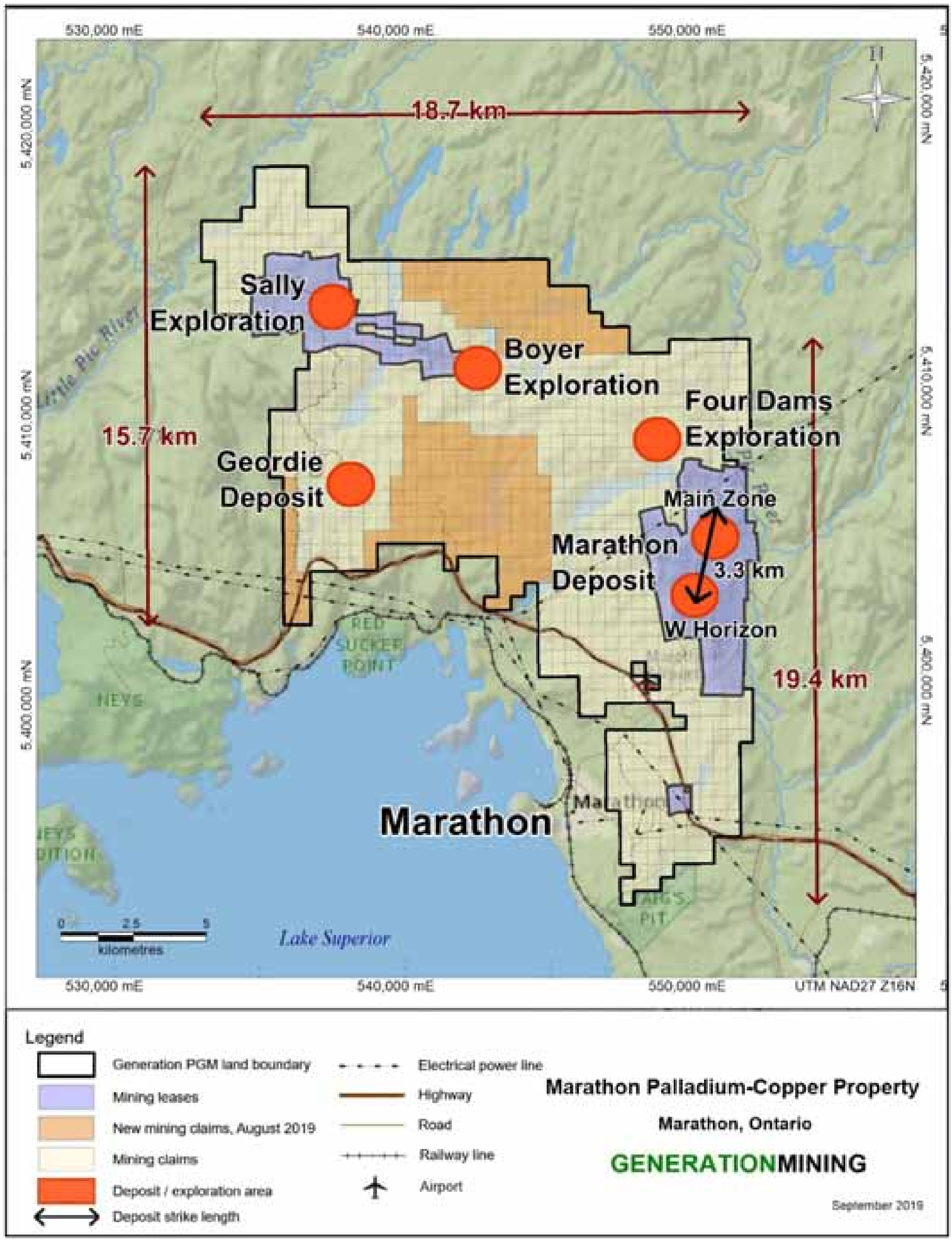
On Closing, Gen Mining paid to Stillwater $2.9 million in cash (in addition to the $100,000 previously paid upon signing the letter of intent) and issued 11,053,795 common shares of Gen Mining at a deemed price per common share of $0.2714 (totalling $2,999,999.96), for a total consideration payment to Stillwater of $5,999,999.96 for the initial 51% interest.

Gen Mining is now the operator of the Property (unless its interest in the joint venture reduces to a minority interest) and will assume all liabilities of the Property in such operatorship capacity. During the Second Earn-In Period, Gen Mining must sole-fund all expenditures in respect of the Property and related activities. Once Gen Mining has earned the Second Interest, the parties will fund expenditures on a pro rata basis (80% funded by Gen Mining and 20% funded by Stillwater) in order to maintain their respective interests in the joint venture, subject to normal dilution provisions.

Upon a Feasibility Study being prepared and the management committee of the joint venture making a positive commercial production decision, (as long as Stillwater has a minimum 20% interest in the Property), then Stillwater will have 90 days to exercise an option to increase its participating interest in the joint venture from its current percentage up to 51% .

The original Marathon Property held by Stillwater Canada Inc. from 2010 to 2019 has since been enlarged by Gen Mining through the periodic staking of unpatented mining claims. As and illustrated in Figure 1.2 below, Gen Mining during the summer of 2019 staked an additional 215 claim blocks totalling 4,558 hectares ("ha"). This increases Gen Mining's land position to include 45 leases and 1,071 claims, or 21,965 ha (219.65 square kilometres) at the effective date of this Technical Report. Gen Mining is a publicly traded company with a listing on the CSE (Canadian Securities Exchange) under the symbol GENM. There are no outstanding royalties on the main Marathon Deposit, however, royalties do apply to other parts of the Property.

FIGURE 1.2 MARATHON PROPERTY CLAIM MAP



Source: *Generation Mining Limited (2019)*

1.3 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Marathon Property is located at latitude 48°45’ N and longitude 86°19' W. Local access to the Property is primarily by all-weather gravel roads off of TransCanada Highway No. 17. The Property is characterized by moderate to steep hilly terrain with a series of interconnected creeks and lakes surrounded by dense vegetation. Occasional outcrops of gabbro are present on the Property and overburden which consists of boulder till with gabbro and mafic volcanic boulders, ranges from 3 m to 10 m in thickness. The general elevation around the mine site is slightly higher than the overall regional topography. Ground surface elevations in the area of the proposed mine range from about 260 m to over 400 m asl with a gradual decrease in elevation from north to south.

The vegetation consists of northern hardwood and conifer trees as well as muskeg areas, which are bogs or wetlands common to boreal forest regions. The Project area is bounded to the east by the Pic River and Lake Superior to the south and west.

The climate is typical of northern areas within the Canadian Shield with long winters and short, warm summers. Average annual precipitation in the area of Marathon was 826 mm for the period 1952-1983, of which 240 mm fell as snow. Average annual surface runoff is approximately 390 mm. The annual average temperature is 1°C with the highest average monthly temperature of 15°C in August and lowest in January of -15°C (Environment Canada).

Exploration and drilling may be carried out throughout the year except during the few weeks of spring break up when most gravel roads are not suitable for vehicles and weight restrictions are placed on Highways.

Logistical support, including power and telephone lines, is available at the Property and at Marathon, which is linked to the Ontario power grid. Additionally, on March 21, 2019, the Minister of the Environment, Conservation and Parks approved the environmental assessment for the East-West Tie transmission project which is a proposed 450 km double-circuit 230 kV transmission line connecting the Lakehead Transfer Station in the Municipality of Shuniah near the city of Thunder Bay to the Wawa Transfer Station located east of the Municipality of Wawa. It will also connect to the Marathon Transformer Station.

The Marathon airport is located immediately north of the town of Marathon, and runs adjacent to Highway 17 near the southwest corner of the Marathon Property.

Water is available from the Pic River as well as from many lakes and creeks which drain the area. A high voltage power line transects the Property. The CP Rail trans Canada rail line as well as numerous rail load-out locations are within close proximity and deep-water dock facilities are available at Marathon and Heron Bay. Mining equipment and personnel are available in Marathon and in Thunder Bay.

Land-use activities in the area include hunting, fishing, trapping and snowmobiling. Sport fishing activity is focused on the Pic River which contains a variety of warm water fish species and in Hare and Bamoos Lakes located northwest of the Project. Pukaskwa National Park is located near the mouth of the Pic River approximately 20 km downstream of the Property.

1.4 HISTORY

The Marathon Property was explored by various companies over the past 40+ years, and during this time, a total of 883 drill holes and 1,008 trenches totalling 199,343 metres were completed. The majority of drilling was completed to outline the Marathon Deposit.

Exploration for copper and nickel deposits in the Marathon area commenced in the 1920s and has continued until the present. In the 1940s, the discovery of titaniferous magnetite and disseminated chalcopyrite occurrences was made. During the past five decades, the Marathon Property has undergone several phases of exploration and economic evaluation, including geophysical surveys, prospecting, trenching, diamond drilling programs, geological studies, resource estimates, metallurgical studies, mining studies, and economic analyses. The Property was developed from 1985 to 2014 by various companies. These studies have successively enhanced the knowledge base on the Deposit.

In 1963, Anaconda acquired the Marathon Property and carried out systematic exploration work including diamond drilling of 32,741 m in 151 drill holes from 1964-1966. This culminated in the discovery of a large copper-PGM deposit. Anaconda conducted a number of metallurgical tests intermittently from 1965 to 1982, however, they discontinued further work on the Project in the early 1980s due to low metal prices at the time.

In 1985, Fleck purchased a 100% interest in the Marathon Property with the objective of improving the Project economics by focusing on the platinum group metals ("PGM") values of the Deposit. Fleck carried out an extensive program, which included re-assaying of the Anaconda drill core, further diamond drilling, surface trenching of the mineralized zones, bulk sampling and a pilot plant testing. On June 10, 1998, Fleck changed its name to Polymet Mining Corp.

In 1986, H.A. Symons carried out a Feasibility Study for Fleck which indicated a low internal rate of return. In 1987, Kilborn Limited carried out a Pre-Feasibility review for Fleck that included preliminary results from the Lakefield pilot plant tests that indicated a low internal rate of return.

In late 1987, Teck Corporation ("Teck") prepared a Preliminary Economic Feasibility Report on the Fleck's Marathon Project based on a conventional open pit operation and concluded that the Project was uneconomic due to low metal prices at that time.

In 1987, Euralba Mining Ltd. ("Euralba"); an Australian Junior mining company entered into a joint venture agreement with Fleck which is 1998 changed its name to PolyMet Mining Corp.

In 1989, BHP Engineering Pty Ltd. ("BHP") carried out a Pre-Feasibility study for Euralba, compiled 2,500 samples of drill core which were assayed at Lakefield. Euralia developed a Mineral Resource block model of the Marathon Deposit that was used to design an optimized open pit. BHP considered several metallurgical processes, including an on-site smelter process.

In 2000, Geomaque Exploration Ltd. acquired certain rights to the Marathon Project through an option agreement with Polymet. Geomaque and its consultants carried out a study of the economic potential of the Marathon Project. The study included a review of the geology and drill hole database, interpretation of the mineralized zones, statistics and geostatistics, computerized block model, Mineral Resource estimation, open pit design and optimization, metallurgy, process design, environmental aspects, capital and operating cost estimates and cash flow modeling for an internal study.

In 2003, Marathon PGM Corp. acquired the Marathon Deposit, at the time known as the Marathon PGM Project from PolyMet and carried out exploration and various studies from 2004 through 2010. A Mineral Resource Estimate of the Marathon Deposit was prepared using the same drill hole database that Geomaque used for its 2001 Mineral Resource Estimates and the assay database from trenches excavated by Anaconda and Fleck.

From 2004 to 2009 Marathon PGM Corp. funded programs of advanced exploration and diamond drilling. Approximately 617 holes and 113,030 m were drilled to define to expand the Mineral Resource. In 2006, a technical report titled “Technical Report and Resource Estimate on the Marathon PGM-Cu Property, Marathon” was prepared by P&E Mining Consultants Inc. In 2007, P&E authored a second Technical Report titled “Updated Technical Report and Preliminary Economic Assessment on the Marathon PGM-Cu Property, Marathon Area”. An internal study on the Mineral Resource update of the Geordie Palladium-Copper Property was produced on June 4, 2008. A Feasibility Study was published in 2008 and updated in January 2010 by Micon/Metchem titled “Technical Report on the Updated Mineral Resource Estimate and Updated Feasibility Study for the Marathon PGM-Cu Project” (Marathon Deposit/Marathon Project).

In 2010, Stillwater Mining Company and Marathon PGM Corp. entered into an agreement whereby Stillwater would acquire all of the outstanding shares of Marathon PGM. Stillwater formed a Canadian corporation, Stillwater Canada Inc. In March 2014, Nordmin Engineering Ltd. provided Stillwater Canada Inc. with an internal Feasibility Report. From 2011 to 2017 Stillwater developed trail access; and conducted a systematic approach to prospecting, geological mapping, trenching, geophysics and some diamond drilling and continued their environmental monitoring programs to ensure that environmental programs remained in good standing. The Company also re-logged over 150 drill holes. A total of 45 holes or 9,767 metres of core was recovered.

In 2017, Stillwater Mining Company was acquired for $2.2 billion by Sibanye Gold Limited (NYSE: SBGL) and renamed Sibanye-Stillwater (NYSE: SBGL).

During the summer of 2017 Sibanye-Stillwater completed 5925 m of exploration drilling in the Sally (16 holes), Four Dams (2 holes) and Marathon Deposit (4 holes) areas. Holes ranged from 102 m to 537 m in length. All of the 2017 exploration drilling in the Marathon Deposit area was external to the current resource estimate. As of the effective date of this Technical Report the 2017 drilling by Sibanye-Stillwater had not been filed for assessment credit.

On July 11, 2019 Generation Mining Limited had (through a wholly-owned subsidiary, Generation PGM Inc.), completed the acquisition of a 51% initial interest in the Marathon Palladium-Copper Properties from Stillwater Canada Inc., a wholly owned subsidiary of Sibanye Gold Limited, and entered into a joint venture agreement with respect to the Property. Gen Mining can increase its interest in the Property and joint venture to 80% by making certain exploration commitments.

Gen Mining is currently performing an exploration drilling program; however, no results have been released as of the effective date of this Technical Report.

There have been numerous Mineral Resource Estimates and economic studies carried out by the various owners of the Property, not all of which have been NI 43-101 compliant or publicly disclosed. The most recent NI 43-101 compliant and publicly disclosed Mineral Resource Estimate was in January 2010 by Micon International which was included as part of an updated Feasibility Study.

1.4.1 Historical Mineral Processing and Metallurgical Testing

Metallurgical testwork results and flowsheet design for the Marathon Project originate from a series of bench-scale metallurgical studies at several testing laboratories over several years. Metallurgical tests included crushing, grinding, batch, locked cycle and mini pilot scale froth flotation testing.

Early mineralogical examination revealed that the copper mineralization was bi-modal – most of the chalcopyrite was coarse grained (>100 µM), with the balance being fine grained. Essentially all of the PGM mineralization was very fine grained (80% <10 µm).

The production of a mineral concentrate for sale to a smelter is the most reasonable strategy for the Marathon Project. Early testwork results indicated that a rougher flotation of copper (chalcopyrite) at a coarse grain size followed by regrinding of the flotation tails and production of a rougher PGM-rich concentrate. Later testwork revealed that regrinding of both of the rougher concentrates combined with repeated cleaner flotation tailings would successfully produce smelter-acceptable grades of concentrate and at high recoveries of copper and PGM's. The copper and PGM concentrates would be combined, dewatered and shipped to a smelter/refinery.

Because of the low concentration of each valuable mineral in the mineralized material, the "mass pull", i.e. the amount of final concentrate produced, is small, approximately 1.5% of process feed. This small amount presents some challenge for laboratory scale testing when regrinding and multiple flotation steps are needed. Despite this, recoveries of 90% for copper, > 80% for palladium and >70% for gold, platinum and silver were confirmed by multiple laboratory batch and small-scale pilot tests.

1.5 GEOLOGICAL SETTING AND MINERALIZATION

The Marathon Palladium-Copper Property is situated along the eastern margin of the Coldwell Complex, which is part of the Keweenawan igneous rocks that were emplaced around, and in the vicinity of, the Great Lakes of the Mid-continent Rift System ("MRS").

The Marathon Deposit is hosted by the Two Duck Lake Gabbro ("TDL Gabbro"), a late intrusive phase of the Eastern Gabbro. The Eastern Gabbro is a composite intrusion and occurs along the northern and eastern margin of the Proterozoic Coldwell Alkaline Complex ("CAC") which intrudes the much older Archean Schreiber-Hemlo greenstone belt. The entire CAC is believed to have intruded over a relatively short period of time near the beginning of the main stage of the Mid-continent Rift magmatism that occurred between 1108 and 1094 Ma.

The geology of the Marathon Deposit is dominated by the intrusive cross cutting relationships between complicated assemblages of gabbroic to ultramafic rocks as well as the complicated nature of the basal contact between the Eastern Gabbro and partially melted Archean rocks. A new classification scheme subdivides these predominantly gabbroic rocks into the Fine Grained, Layered, and Marathon Series. The Two Duck Lake Gabbro is the youngest gabbroic member of the Marathon Series. The order of emplacement and respective grouping of the intrusive units from oldest to youngest are summarized as follows:

- Archean country rock;
- Fine grained gabbro (Fine Grained Series);
- Layered olivine gabbro (Layered Series);
- Wehrlite-Troctolite Sill (Marathon Series);
- Two Duck Lake Gabbro (Marathon Series);
- Oxide Ultramafic Intrusions that consist of cumulate clinopyroxene +/- olivine +/- magnetite +/- apatite (Marathon Series);
- Rheomorphic Intrusive Breccia (partial melt of Archean footwall rocks);
- Quartz syenite and augite syenite.

A newly recognized 30 m to 50 m thick sill composed of an upper wehrlite and lower troctolite unit is located immediately above the main mineralized bearing Two Duck Lake Gabbro. The unit is significant for two reasons: first, it forms an important marker horizon; and second, the excellent continuity negates the possibility of post mineralization faulting as proposed by a previous study.

Each of the three magmatic series (Fine Grained, Layered and Marathon) has been characterized using geochemical criteria in Pearce Element diagrams. These diagrams clearly separate individual rock series with significant lateral continuity into distinctive fields and are therefore a useful tool to confirm geological mapping. More importantly, as the Marathon Series are the dominant host rocks for sulphide mineralization, the diagrams are a powerful exploration tool that can potentially discriminate mineralized from barren rock units. In general, the Pearce Element diagrams demonstrate that the Marathon Series rocks plot in a field that lies between those for Fine Grained and Layered Series. The Fine Grained Series has the lowest Ce/Yb, Sm/Yb, Th/Zr and Nb/Zr and conversely, the Layered Series has the highest Ce/Yb, Sm/Yb, Th/Zr and Nb/Zr.

The Marathon Deposit consists of several large, thick and continuous zones of disseminated sulphide mineralization hosted within the Two Duck Lake Gabbro. The mineralized zones occur as shallow dipping sub parallel lenses that follow the basal gabbro contact and are labeled as footwall, main, hanging wall zones and the W Horizon. The Main Zone is the thickest and most continuous zone. For 516 drill hole intersections with intervals greater than 4 m thick, the average thickness is 35 m and the maximum is 183 m.

Sulphides in the Two Duck Lake Gabbro consist predominantly of chalcopyrite, pyrrhotite and minor amounts of bornite, pentlandite, cobaltite, and pyrite. The proportions of sulphide minerals as determined in a QEMSCAN survey of a bulk sample are 2.75% pyrrhotite, 0.79% Cu-Fe sulphides (chalcopyrite and bornite), 0.09% pentlandite and trace amounts of pyrite, galena and sphalerite.

The relative proportions of pyrrhotite and chalcopyrite vary significantly across the Deposit, but in general, the sulphide assemblage changes gradually up section from the base to the top of mineralized zones. Sulphides at the base of the TDL Gabbro consist predominantly of pyrrhotite and minor chalcopyrite but the relative proportion of chalcopyrite increases up section to nearly 100% chalcopyrite near the top. In the W Horizon, sulphides consist mainly of chalcopyrite and bornite and minor to trace amounts of pentlandite, cobaltite, pyrite and pyrrhotite. In general, the variations in chalcopyrite to pyrrhotite ratio across the deposit, and from bottom to top of the deposit, correlates with variations in the Cu/Pd ratio, with the highest concentrations of Pd occurring in samples with Cu-rich sulphide assemblages.

A prominent feature of the Marathon Deposit is the local and extreme enrichment of PGM with respect to Cu. For example, high grade samples from the W Horizon that contain between 25 and 50 grams per tonne ("g/t") Pd might also contain very low concentrations of Cu (<0.02% Cu). The separation of PGM from Cu is observed throughout the deposit but is most common near the top of the mineralized zone. In the southern half of the Deposit, PGM enrichment is most prominent in the W Horizon.

There is a relationship between mineralization and the paleo topography of the footwall contact. For example, mineralization is best developed within basins or troughs of the footwall and thins or pinches out above prominent footwall ridges. It is important to note that although the mineralized zones are almost continuous from the north to south extents of the Deposit, assays with the best grades fall along trends that mimic the alignment of troughs or ridges.

The Marathon Deposit formed by sulfide accumulation in basins and troughs of the magma conduit and underwent significant upgrading of Cu and Platinum Group Elements ("PGE") contents by the process of multistage dissolution upgrading that was described for similar disseminated mineralization in the Noril'sk region, Russia by Kerr and Leitch (2005). This model best explains three dominant characteristics of the Marathon Deposit, as follows: 1) the intrusion of multiple parallel thin and continuous sill like bodies; 2) the relationship between troughs and ridges in the footwall contact with thicker accumulations of higher grade (Cu and Pd) material; and 3) the extreme but systematic variations in base metal to PGE ratios. An alternative hydrothermal origin for PGE enrichment is rejected on the basis that primary minerals are well preserved and there is a strong positive correlation between Pd, Pt, Rh and Ir.

In the magma conduit deposit model, the present exposure of Two Duck Lake Gabbro represents only a fraction of the magma that made its way up through the crust. On the basis of mass balance calculations, and considering the TDL Gabbro is less than about 250 m thick, only a very large magmatic system can explain the excessive enrichments of platinum metals with up 45 g/t of combined platinum, palladium and gold over 10 m or the accumulations of disseminated sulphide layers that are up to 160 m thick. Consequently, it is envisaged that a very large volume of magma, perhaps greater than 10,000 times the volume of gabbro present in-situ, passed through the conduit and formed the Two Duck Lake Gabbro.

Fluid dynamic factors that affected magma flow are relevant to exploration. Features such as pooling of TDL magma in basins within the footwall or brecciation of Eastern Gabbro by TDL magma as it stopes its way upward are important examples of how the magma flow was slowed resulting in the precipitation of the more dense sulphide liquid from the magma. Conversely, above ridges or crests in the footwall, where TDL Gabbro thins and the magma velocity increased, sulphides were unable to settle out of the magma and mineralized horizons thin or pinch out.

In addition to the Marathon Deposit, the Property hosts other PGM deposits/mineralization in four additional areas – Geordie, Sally, Boyer and Four Dams. This Technical Report includes historical resource estimates for both the Geordie and Sally deposits.

1.6 DEPOSIT TYPES

The Marathon Deposit is one of several mafic to ultramafic intrusive bodies in the Mid-continent Rift System that host significant copper, nickel or PGE sulfide mineralization. These intrusions include the Yellow Dog peridotite (Eagle Deposit), the Tamarack Deposit, the Current Lake Intrusive Complex (Thunder Bay North deposit), and the numerous intrusions located along the base of the Duluth Complex.

Intrusion and deposition of sulphides within magma conduits has recently become the dominant mineralization forming process chosen to explain the rift related deposits. For example, a magma conduit deposit model has been proposed for the Marathon Deposit), Thunder Bay North and the Eagle Deposit. The magma conduit model has grown in favour since it was proposed to explain deposits in the Noril'sk region and the deposits at Voisey's Bay, Newfoundland and Labrador, Canada. Further, an important contribution to the understanding of magma conduits and the formation of very high tenor PGM deposits was derived from a sophisticated geochemical model for an open system multiple stage process expected in a magma conduit which was applied to explain the extreme PGM concentrations found in the W Horizon at the Marathon Deposit.

In the magma conduit deposit model, the present exposure of the Two Duck Lake and Eastern Gabbro series represents only a fraction of the magma that was generated in the mantle and made its way up through the crust. Most of the magma actually passed through the magma conduits and erupted on the surface as basaltic volcanic flows. The gabbroic units and associated Cu-PGM mineralization represent material that crystallized or settled out of the magma as it moved through the conduit.

There are many striking petrologic and geochemical similarities between the Two Duck Lake Gabbro and the Partridge River Intrusion, located at the base of the Duluth Complex, Minnesota. The Partridge River intrusion is the best described gabbroic intrusion in the Duluth Complex and is host to the Minnamax (Babbit) and Dunka Road Cu-Ni-PGM Deposits. The relevant features described from the Partridge River Intrusion are also observed in the Two Duck Lake Gabbro

Comparisons between the Mid-continent Rift System and the Voisey Bay and Noril'sk settings point to several similarities that suggest that the Mid-continent Rift is a likely setting for Ni-Cu mineralization. The continental rifting and associated voluminous igneous activity in all three regions formed in response to the rise of a hot plume of mantle material from deep in the Earth, fracturing the overlying continental crust. In the Mid-continent Rift, melting of the plume produced more than 2 million cubic kilometres of mostly basalt lava flows and related intrusions.

1.7 EXPLORATION

Prior to August 2019, the only recent diamond drilling exploration work carried out on the Marathon Property was during the summer of 2017 when Sibanye-Stillwater completed 5925 m of exploration drilling in the Sally (16 holes), Four Dams (2 holes) and Marathon Deposit (4 holes) areas. Holes ranged from 102 m to 537 m in length. All of the 2017 exploration drilling in the Marathon Deposit area was external to the current resource estimate. As of the effective date of this Technical Report the 2017 drilling by Sibanye-Stillwater had not been filed for assessment credit.

1.8 DRILLING

On August 19, 2019 Gen Mining announced that it had begun 12,000-metre exploration drilling program on the Marathon Palladium-Copper Property. Two drills and crews were mobilized and drilling commenced August 14th. The program is designed to test several high-priority sites along a strike length of more than 40 km.

The following areas are the targets for the 2019 drilling program:

- 3,000 metres testing the West Feeder Zone near the Main Zone Deposit;
- 1,000 metres of confirmation/infill drilling on the Marathon Deposit;
- 2,700 metres exploration drilling on two Geordie Deposit offsets;
- 2,600 metres of greenfield exploration drilling on Boyer Area; and
- 2,700 metres of drilling for the source of the extremely high-grade samples and massive sulphides at Sally Area.

1.9 SAMPLE PREPARATION, ANALYSIS AND SECURITY

The core and trench cut sampling protocol (preparation, analysis and security procedures) instituted and used by past project operator Marathon PGM in each of their drilling and other rock sampling programs were identical to those reported in earlier NI 43-101 compliant reports.

Upon sampling, tagging and bagging, samples are then grouped into batches, placed into rice bags and sent by courier to Accurassay's facilities (acquired by AGAT Labs in 2017) in Thunder Bay, Ontario. Upon receipt of the samples, Accurassay provided analytical services to the mining and mineral exploration industry and is registered under ISO 9001:2000 quality standard.

In 2011, Stillwater Canada Inc. changed assay labs and initiated analyses at ALS Chemex Labs in Thunder Bay. ALS Chemex uses a similar lab protocol but with the exception that PGM analyses are conducted by ICP-MS instead of Atomic Absorption as at Accurassay. All samples were analyzed for Cu, Ni, Ag, Au, Pt and Pd. Rhodium analysis was requested on certain higher grade samples.

The samples provided to Accurassay by Marathon PGM Corp. were core samples, rock (from trenches) samples and pulp samples. The samples were dried, if necessary, crushed to approximately minus 10 mesh and split into 250-g to 450-g sub-samples using a Jones Riffler. The sub-samples were then pulverized to 90% passing 150 mesh.

Flame atomic absorption spectroscopy (“AAS”) determinations for preliminary concentrations of Au, Pt and Pd by fire assay (lead collection) was the preferred method.

A 30.2-g sample mass was routinely used for precious metal analyses. A furnace load consists of 23 or 24 samples with a check done every 10th sample (by client ID), along with a laboratory blank and a Quality Control Standard.

Samples provided to Accurassay by Marathon PGM Corp. did not require preliminary treatment and were mixed directly with the assay flux and for 1¼ h at 1,800 to 2,000 degrees Fahrenheit. Samples are typically cupelled for 50 minutes at 1,900 degrees Fahrenheit.

Precious metal beads were digested using a nitric/hydrochloric acid digestion and bulked up with a 1% La2O3 solution and distilled water.

For flame AAS determinations of Cu, Co, Ni, Pb, and Ag, an acid digestion consisting of aqua regia (1 part nitric to 3 parts hydrochloric acid) was the preferred method. A sample mass of 0.25 g and a final volume of 10 mL is used for the analysis.

Accurassay used a Varian AA240FS with manual sample introduction for the determination of Au, Pt and Pd. A Varian 220FS or 240FS with SIPS and auto-diluter is used for the determination of base metals.

Calibration standards are made up from 1,000 ppm certified stock solutions. Quality assurance (“QA”) solutions are made up from separately purchased 1,000 ppm certified stock solutions. All stock solutions are prepared commercially by ISO certified suppliers.

All data generated for quality control standards, blanks and duplicates are retained with the client’s file and are used in the validation of results. For each quality control standard, control charts are produced to monitor the performance of the laboratory. Warning limits are set at +/-2 standard deviations, and control limits are set at +/-3 standard deviations. Any data points for the quality control standards that fall outside the warning limits, but within the control limits require 10% of the samples in that batch to be re-assayed.

The in-house standard used for Au, Pt, Pd and Rh was made up from a rock source provided to Accurassay by a third party. All standards used to certify base metal values were provided by CANMET. The QA sample was made in the laboratory from certified stock solutions purchased from an ISO 9000 certified supplier. The quality assurance samples were used to verify the initial calibration of the instruments and monitor the calibration throughout the analysis.
Values of materials were obtained from their respective certificates of analysis.

Stillwater continued with a robust quality assurance/quality control (“QA/QC” or “QC”) program that had been implemented in the mid-2000s by the predecessor company, Marathon PGM Corp.

For the 2009 data, there were 31 data points for MPG1 and 18 data points for MPG2. All data points fell between +/- two standard deviations from the mean for Au, Cu, Pd and Pt. For the 2011 data there were 35 data points for MPG1 and 32 data points for MPG2. All data points fell between +/- two standard deviations from the mean. The blank material used for the 2009 and 2011 programs was a commercially prepared nepheline syenite sand. There were 49 data points in 2009 and 68 in 2011. All blank results were below five times detection limit for the commodity in question. There were 81 pulp duplicate pairs analyzed at ALS Minerals for Au, Pt and Pd for the 2011 drill program. Both platinum and palladium demonstrated excellent precision at the pulp level. There were no duplicates available for copper.

1.10 DATA VERIFICATION

The Marathon Project was visited by Mr. David Burga, P.Geo., an independent Qualified Person as defined by NI 43-101 on April 4, 2012 and he collected ten verification samples from nine holes. The samples were taken by Mr. Burga to AGAT Labs in Mississauga, ON for analysis. Copper, silver and nickel were analyzed using 4-acid digest with AAS finish. Gold, platinum and palladium were analyzed using lead collection fire assay with ICP-OES finish.

A site visit to the Marathon Project was undertaken by Mr. Bruce Mackie of Bruce Mackie Geological Consulting Services ("Mackie") on May 4, 2019. As part of the site visit, twelve verification samples from nine diamond drill holes intervals were taken by Mr. Mackie, P.Geo. and were submitted to Activation Laboratories Ltd. in Thunder Bay and analyzed for Au, Ag, Pt, Pd and Cu.

For both site visits (Burga and Mackie), drill logs for the sections reviewed were found to be appropriately detailed and present a reasonable representation of geology, alteration mineralization and structure. No discrepancies in the sample tag numbers within the core trays and the intervals quoted in the aforementioned Excel spreadsheets were noted.

Based on the results of the Investigation, Messrs. Burga and Mackie are of the professional opinion that the mineralized drill hole assay results and corresponding drill hole logs reported by Stillwater and Marathon PGM Corp. that were the subject of their investigations are verifiable and accurate and portray a reasonable representation of the types of mineralization encountered on the Marathon and Geordie deposits.

P&E considers there to be good correlation between the independent verification samples and the original analyses in the Company database.

1.11 MINERAL RESOURCE ESTIMATES

All Mineral Resource estimation work reported herein was carried out or reviewed by Fred Brown, P.Geo., and Eugene Puritch, P.Eng., FEC, CET both an independent Qualified Person as defined by National Instrument 43-101. Portions of the background information and technical data for this study were obtained from previously filed National Instrument 43-101 Technical Reports. Mineral Resource modeling and estimation were carried out using Gemcom GEMS software. Variography was carried out using Snowden Supervisor. Open-pit optimization was carried out using the NPV Scheduler software.

The last previous public Mineral Resource Estimate for the Marathon Deposit dated January 8, 2010 was prepared by Micon International Ltd. (Table 1.1) and was based on an NSR cut-off grade of C$10.50/t was calculated from the results of 818 drill holes and 456 surface channel/trench samples.

TABLE 1.1
PREVIOUS MINERAL RESOURCE ESTIMATE DATED JANUARY 8, 2010

Classification	Tonnes (Mt)	Ag (g/t)	Au (g/t)	Cu (%)	Pd (g/t)	Pt (g/t)	Ag (koz)	Au (koz)	Pd (koz)	Pt (koz)
Measured	94.3	1.60	0.09	0.26	0.85	0.24	4,847	266	2,564	736
Indicated	20.5	1.42	0.06	0.14	0.45	0.16	976	50	386	133
Mea + Ind	**114.8**	**1.57**	**0.08**	**0.24**	**0.78**	**0.23**	**5,823**	**316**	**2,950**	**869**
Inferred	6.2	1.46	0.05	0.15	0.31	0.10	290	21	61	21

Note: *Mea = Measured, Ind = Indicated.*

For the current Mineral resource Estimate of the Marathon Deposit in this Technical Report, sample data were provided in the form of ASCII text files and Excel format files. The supplied databases contain 1,359 unique drill hole collar and trench records. Of these, 177 records fall outside the block model limits or had no reported assay data. Drill hole and surface channel sample records consist of collar, survey, lithology, bulk density and assay data. Assay data fields consist of the drill hole ID, downhole interval distances, sample number, and Ag, Au, Cu, Pd, Pt assay grades. All data are in metric units. Collar coordinates were provided in the NAD27 UTM Zone 16 coordinate system.

For domain modeling a calculated NSR field was added to the database as follows:

NSR C$/t = Ag * 0.45 + Au * 39.03 + Cu * 76.27 + Pd * 35.00 + Pt * 26.47

The supplied database contains a total of 43,057 non-zero Ag assays, 34,044 non-zero Au assays, 34,296 non-zero Cu assays, 34,040 non-zero Pd assays, and 34,034 non-zero Pt assays. Industry standard validation checks were carried out on the supplied databases, and minor corrections made where necessary. No significant errors were noted with the supplied databases. P&E considers that the database supplied is suitable for Mineral Resource estimation.

The updated P&E Mineral Resource Estimate is based on 17 mineralization domains, with a total volume on the order of 74 million cubic metres. Mineralization domains have been based on zones developed by Dr. David Good, previously Vice President Exploration for Stillwater Canada Inc. and Marathon PGM Corp. Mineralization domains are further broadly grouped into two areas, the northern domains where mineralization is dominated by paleo-topographic controls, and the remaining southern domains. Of the 17 domains modeled, the North Main (rock code 90), Walford Zone (rock code 80) and North Footwall (rock code 20) make up 80% of the total Mineral Resource by volume.

Domain models were generated from successive polylines as defined by a nominal NSR value of C$13/t, oriented perpendicular to the overall trend of the mineralization. All polyline vertices were snapped directly to drill hole assay intervals, and include low grade material where necessary to maintain continuity between sections. An overburden surface was constructed from the supplied lithological logging, and all mineralization domains were clipped to topographic and overburden surfaces where appropriate.

The average Nearest Neighbour drill hole collar distance is 45.9 m, and the average drill hole length is 187.7 m. P&E noted a strong overall correlation between Pd and Pt as well as Au with Pd and Pt. A strong correlation between Cu with Pd and Pt was noted in the northern area.

The supplied database contains 1,136 bulk density measurements, with values ranging from 2.53 to 4.31 tonnes per cubic metre ("t/m^3"). P&E noted a slight decrease in bulk density with depth, primarily associated with the denser Magnetite Hanging Wall units occurring higher in the stratigraphic column.

Constrained assay sample lengths range from 0.10 m to 29.8 m, with an average sample length of 2.04 m. A total of 80% of the samples have a length of 2.00 m.

All constrained assay samples were therefore composited to the dominant sample length of 2.00 m. Length-weighted composites were calculated for all metals within the defined mineralization domains. Missing sample intervals in the data were assigned a nominal background grade of 0.001 g/t or 0.001%. Residual composites that were less than 1.00 m in length were discarded so as not to introduce a short sample bias into the estimation process.

A substantial number of surface channel samples have been collected across the Marathon Deposit from excavated trenches below the overburden. As a check on any potential bias from the channel samples, lognormal QQ plots were generated comparing composited channel samples to composited drill hole samples for the North Footwall, Walford and North Main domains. The results do not indicate a substantial bias between the channel samples and the drill hole samples, with the possible exception of a slight bias for Pd in the North Main domain. P&E considers the channel samples to be acceptable for Mineral Resource estimation.

Grade capping analysis was conducted on the domain-coded and composited grade sample data in order to evaluate the potential influence of extreme values during grade estimation. Capping thresholds were determined by the decomposition of the domain composite log-probability distributions. Composites are capped to the defined threshold prior to estimation.

Three-dimensional continuity analyses (variography) were conducted on the domain-coded uncapped composite data. The downhole variogram was viewed at a 2.0 m lag spacing (equivalent to the composite length) to assess the nugget variance contribution. Standardized omni-directional spherical models were used to model the experimental semi-variograms. The experimental semi-variograms were used to define appropriate search ranges for Mineral Resource classification.

The modeled Marathon Deposit mineralization domains extend along a corridor 2,000 m wide and 3,500 m in length. An orthogonal block model was established with the block model limits selected so as to cover the extent of the mineralized structures, the proposed open pit design, and to reflect the general nature of the mineralized domains. The block model consists of separate variables for estimated grades, rock codes, volume percent, bulk density and classification attributes.

The Mineral Resource Estimate was constrained by mineralization wireframes that form hard boundaries between the respective composite samples. Block grades were estimated in a single pass with Inverse Distance Cubed ("ID^3") interpolation using a minimum of three and a maximum of 12 composites within a 200 m diameter search envelope, with a maximum of three samples per octant. For each grade element an uncapped Nearest Neighbour model ("NN") was also generated using the same search parameters. An NSR block model was subsequently calculated from the estimated block grades. Bulk density was modeled using Inverse Distance Squared ("ID^2") linear weighting of between three and nine bulk density samples, with a maximum of one sample per drill hole.

Subsequent to the initial classification, blocks were re-classified using a maximum a-posteriori selection pass which corrected isolated classification artefacts and consolidated areas of similar classification into continuous areas. The Mineral Resources for the Marathon Deposit are reported against an NSR cut-off value of $13/t and constrained within an optimized pit shell (Table 1.2). The Mineral Resource model was subjected to two other sensitivity analyses. (Tables 1.3 and 1.4)

The block model was validated visually by the inspection of successive section lines in order to confirm that the block models correctly reflect the distribution of high-grade and low-grade values. An additional validation check was completed by comparing the average grade of the constrained capped composites to the model block grade estimates at zero cut-off. Capped composite grades and block grades were also compared to the average Nearest Neighbour block estimate. No significant issues were identified.

A check for local estimation bias was completed by plotting vertical swath plots of the estimated ID^3 block grade and the Nearest Neighbour grade. No significant discrepancies were identified.

As a further check of the Mineral Resource model, the total volume reported at zero cut-off was compared by domain with the calculated volume of the defining mineralization wireframe. All reported volumes fall within acceptable tolerances.

P&E considers that the information available for the Marathon Deposit is reliable, demonstrates consistent geological and grade continuity, and satisfies the requirements for a Mineral Resource.

TABLE 1.2 **PIT CONSTRAINED MINERAL RESOURCE ESTIMATE (1-5)**													
Classification	**Tonnes (k)**	**Pd (g/t)**	**Pt (g/t)**	**Cu (%)**	**Au (g/t)**	**Ag (g/t)**	**PdEq (g/t)**	**Pd (koz)**	**Pt (koz)**	**Cu (Mlb)**	**Au (koz)**	**Ag (koz)**	**PdEq (koz)**
Measured	103,337	0.64	0.21	0.20	0.07	1.5	1.34	2,123	688	463	239	4,964	4,445
Indicated	75,911	0.46	0.15	0.20	0.06	1.8	1.10	1,115	376	333	151	4,371	2,685
Meas + Ind	**179,248**	**0.56**	**0.18**	**0.20**	**0.07**	**1.6**	**1.24**	**3,238**	**1,064**	**796**	**390**	**9,335**	**7,130**
Inferred	668	0.37	0.12	0.19	0.05	1.4	0.95	8	3	3	1	31	21

Note: *Meas = Measured, Ind = Indicated.*

1) *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, marketing, or other relevant issues.*
2) *Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.*
3) *The Inferred Mineral Resource in this estimate has a lower level of confidence that 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 be upgraded to an Indicated Mineral Resource with continued exploration.*
4) *Contained metal totals may differ due to rounding.*
5) *Mineral Resources are reported within an optimized pit shell at a cut-off NSR value of C$13/t.*

TABLE 1.3 **PIT CONSTRAINED MINERAL RESOURCE ESTIMATE SENSITIVITIES AT VARIOUS NSR CUT-OFFS***													
NSR Cut-off C$/Tonne	**Tonnes (k)**	**Pd (g/t)**	**Pt (g/t)**	**Cu (%)**	**Au (g/t)**	**Ag (g/t)**	**PdEq (g/t)**	**Pd (koz)**	**Pt (koz)**	**Cu (Mlb)**	**Au (koz)**	**Ag (koz)**	**PdEq (koz)**
100	8,025	2.29	0.72	0.41	0.19	2.0	3.95	591	185	72	49	529	1,020
90	11,656	2.01	0.62	0.40	0.17	2.0	3.57	754	231	103	64	742	1,336
80	17,036	1.76	0.53	0.39	0.15	1.9	3.20	963	290	146	84	1,033	1,754
75	20,780	1.64	0.49	0.38	0.14	1.9	3.02	1,092	327	175	96	1,243	2,021
70	25,003	1.53	0.45	0.38	0.14	1.8	2.86	1,227	365	207	109	1,478	2,302
65	29,977	1.42	0.42	0.37	0.13	1.8	2.71	1,372	408	242	124	1,768	2,610
60	35,845	1.33	0.39	0.36	0.12	1.8	2.56	1,529	454	281	141	2,108	2,946

TABLE 1.4
PIT CONSTRAINED MINERAL RESOURCE ESTIMATE SENSITIVITIES AT VARIOUS NSR CUT-OFFS*

NSR Cut-off C$/Tonne	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
55	42,741	1.23	0.37	0.34	0.12	1.8	2.41	1,696	503	322	159	2,508	3,310
50	51,328	1.14	0.34	0.33	0.11	1.8	2.26	1,881	561	371	180	2,995	3,724
45	61,639	1.05	0.31	0.31	0.10	1.8	2.11	2,075	620	427	204	3,579	4,173
40	74,246	0.96	0.29	0.30	0.10	1.8	1.95	2,280	687	488	232	4,278	4,664
35	88,778	0.87	0.27	0.28	0.09	1.8	1.81	2,483	759	552	260	5,066	5,164
30	106,507	0.79	0.24	0.26	0.09	1.7	1.66	2,695	836	618	291	5,975	5,691
25	127,485	0.71	0.22	0.24	0.08	1.7	1.52	2,902	914	683	324	7,005	6,221
20	151,144	0.64	0.20	0.22	0.07	1.7	1.38	3,086	991	746	360	8,110	6,710
15	172,876	0.58	0.19	0.21	0.07	1.6	1.27	3,213	1,050	789	384	9,076	7,060
13	**179,916**	**0.56**	**0.18**	**0.20**	**0.07**	**1.6**	**1.24**	**3,238**	**1,064**	**796**	**390**	**9,335**	**7,130**
10	187,289	0.54	0.18	0.20	0.07	1.6	1.20	3,270	1,078	809	397	9,640	7,231
5	193,180	0.53	0.18	0.19	0.07	1.6	1.17	3,286	1,087	813	404	9,813	7,274
0.01	196,061	0.52	0.17	0.19	0.06	1.6	1.15	3,290	1,091	817	403	9,840	7,280

***** *Within same pit shell as in Table 1.2.*

TABLE 1.5
PIT RE-CONSTRAINED MINERAL RESOURCE ESTIMATE SENSITIVITY AT C$25/TONNE NSR CUT-OFF

Classification	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
Measured	70,792	0.82	0.25	0.25	0.09	1.5	1.67	1,864	578	387	194	3,510	3,794
Indicated	45,279	0.60	0.19	0.25	0.07	1.9	1.40	871	272	252	106	2,817	2,032
Meas & Ind	**116,071**	**0.73**	**0.23**	**0.25**	**0.08**	**1.7**	**1.56**	**2,735**	**850**	**639**	**300**	**6,326**	**5,826**
Inferred	144	0.62	0.16	0.28	0.05	0.9	1.41	3	1	1	0	4	7

Note: *Meas = Measured, Ind = Indicated.*

1.12 ENVIRONMENTAL STUDIES, PERMITS, AND SOCIAL OR COMMUNITY IMPACTS

Detailed and comprehensive biophysical and socioeconomic studies had been undertaken and essentially completed since 2005 to support robust environmental management and the acquisition of all of the necessary federal and provincial approvals and permits. A comprehensive collection of data was compiled in 2010 and at the time, combined with other Marathon Project information into a detailed Project Description to commence the Environmental Assessment ("EA") process. Subsequently, in June 2012 an Environmental Impact Statement ("EIS") was submitted to a federal and provincial Joint Review Panel ("JRP") which had been formed for expert review of the Marathon Project. The JRP found EIS and supporting information to be sufficient in 2013 and ready to proceed to the Panel Hearings. Prior to the hearings, the EA was put on-hold and remains in that status at the time of writing this Technical Report.

The JRP is expected to be reconstituted and the environmental approval process can be revived using all of the assembled baseline information, environmental management strategies, and results of consultations with local communities when the Project is reconfirmed to be economically and technically feasible. Since the Project Description is not expected to have significantly changed since 2014, limited additional baseline studies, updates and modifications to impact assessments and environmental management strategies are anticipated. The permitting process for construction and operation will commence following approval of a Project EA by the provincial and federal Environment Ministers.

The existing studies provide a basis for assessment of the nature, extent and duration of potential environmental and socioeconomic effects resulting from mine development, operation and closure. A Closure Plan that will minimize long term care and maintenance requirements had been prepared, and submitted with the EIS and is anticipated to remain valid and acceptable. Regular engagement and consultation with communities has been maintained by all operators since 2007, and continues with Gen Mining. EA level engagement and consultations would resume following a positive Feasibility Study

1.13 RECOMMENDATIONS

P&E considers that the Marathon Palladium-Copper Property contains a significant precious metal and copper Mineral Resource that is associated with a well-defined mineralized trend and model. P&E considers that Property has significant potential for a Mineral Resource increase and advancement to an economic study.

Specific opportunities for advancing the Property include:

- Passive Seismic surveys in the Marathon and Sally areas;
- Exploration drilling in the Boyer, Geordie and Sally areas;
- Confirmatory and West Feeder Zone drilling in the Marathon Deposit;
- Down hole electromagnetic surveys where off-hole massive sulphides are suspected;
- Undertake a Preliminary Economic Assessment
- Evaluate potential to optimize potential Pd recoveries by additional metallurgical test work

The Property has other numerous target areas with significant potential for discovery of additional mineralization with geophysics, trenching, geological mapping and drilling.

The proposed program for CADS3,410,000 summarized in Table 1.5.

TABLE 1.6 RECOMMENDED PROGRAM AND BUDGET			
Program	**Units**	**Unit Cost ($)**	**Budget ($)**
Exploration			450,000
Drilling – infill and Mineral Resource expansion	12,000	$170/m	2,040,000
Environmental			120,000
PEA			400,000
Management SG&A			400,000
Total			**3,410,000**

2.0 INTRODUCTION AND TERMS OF REFERENCE

2.1 TERMS OF REFERENCE

The following Technical Report has been prepared to provide a fully compliant NI 43-101 Technical Report and Mineral Resource Estimate of the existing mineralization at the Marathon Project (or the "Marathon Deposit"). This Technical Report was prepared using an updated Mineral Resource Estimate completed in order to incorporate current metal pricing. The Mineral Resource Estimate is fully conformable to the "CIM Standards on Mineral Resources and Reserves – Definitions and Guidelines" as referred to in National Instrument ("NI") 43-101 and Form 43-101F, Standards of Disclosure for Mineral Projects.

This Technical Report will be used in support of the preparation of a planned Preliminary Economic Assessment ("PEA") by P&E Mining Consultants Inc. P&E understands that this Technical Report will support the public disclosure requirements of the Company and will be filed on SEDAR as required under NI 43-101 disclosure regulations.

This Technical Report was prepared by P&E Mining Consultants Inc., ("P&E") at the request of Mr. Jamie Levy, President and CEO of Gen Mining, an Ontario registered company trading under the symbol of "CSE: GENM" on the Toronto Canadian Securities Exchange with its corporate office at:

100 King Street West, Suite 7010, Toronto, Ontario, M5X 1B1, Canada.

This Technical Report is considered current as of September 9, 2019, the effective date.

Gen Mining has accepted 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 Technical Report. The Company has also accepted that P&E's Principals are members of professional bodies that are appropriate and relevant for the preparation of this Technical Report.

2.2 SITE VISIT

Mr. Bruce Mackie, P. Geo., a Qualified Person under the terms of NI 43-101, conducted a site visit of the Property on May 04, 2019. As part of the site visit, confirmation samples from selected drill core intervals were taken by Mr. Mackie and were submitted to Activation Laboratories Ltd. in Thunder Bay. This work was aided by John McBride, P.Geo. a Senior Project Geologist employed at the time by Stillwater Canada Inc. and previously employed with Marathon PGM Corp.

2.3 SOURCES OF INFORMATION

P&E carried out a study of all relevant parts of the available literature and documented results concerning the Project and held discussions with technical personnel from the Company regarding all pertinent aspects of the Marathon Project. The reader is referred to the sources of data, which are outlined in the "Sources of Information" section of this Technical Report, for further detail on the Project.

This Technical Report is also based, in part, on internal company technical reports, press releases and maps, published government reports, company letters and memoranda, and public information as listed in the "Sources of Information" section at the conclusion of this Technical Report. Additional details of the topic can be found in the public filings of Gen Mining as available on SEDAR at www.sedar.com.

The most recent NI 43-101 compliant Technical Report and Mineral Resource Estimate on the Project was completed by Micon International Limited titled "Technical Report on The Updated Feasibility Study for The Marathon PGM-Cu Project, Marathon, Ontario, Canada" dated January 8, 2010. The Micon Technical Report has been heavily relied upon for the geological and historical sections of the current Technical Report.

Considerable previous work was carried out on the Marathon Property by Anaconda Canada Exploration Ltd. ("Anaconda") in the 1960s, Fleck Resources Ltd. ("Fleck"; a subsidiary of Polymet) in the 1980s, and Geomaque Explorations Ltd. ("Geomaque"; now Defiance Mining Corporation) from 2000-01. From 2010 to mid-2019 Stillwater Canada Inc. held the Property. The key technical document reviewed by P&E is the 2014 internal report by Nordmin for the Marathon PGM-Cu Project. (the "Marathon Project" or "Marathon Deposit").

For this Technical Report, principals of P&E or associates of P&E, reviewed technical documents and prepared an Updated Mineral Resource Estimate on the Marathon Project using data supplied by Gen Mining and past filed Technical Reports. All participants are Qualified Persons.

Table 2.1 presents the authors and co-authors of each section of the Technical Report, who acting as a Qualified Person as defined by NI 43-101, take responsibility for those sections of the Technical Report as outlined in Section 28 "Certificate of Author" attached to this Technical Report.

TABLE 2.1
REPORT AUTHORS AND CO-AUTHORS

Qualified Person	Employer	Sections of Technical Report
Ms. Jarita Barry, P.Geo.	P&E Mining Consultants Inc.	11 and Co-author 1, 12, 25, 26
Mr. Fred Brown, P.Geo.	P&E Mining Consultants Inc.	Co-author 1, 14, 25, 26
Mr. Eugene Puritch, P.Eng.	P&E Mining Consultants Inc.	2, 3 and Co-author 1, 14, 25, 26
Mr. Paul Pitman, P.Geo.	PWP Consulting	4 to 10, 23 and Co-author 1, 25, 26
Mr. Bruce Mackie, P.Geo.	Bruce Mackie Geological Consulting Services	Co-author 1, 12, 25, 26
Mr. David Burga, P.Geo.	P&E Mining Consultants Inc	Co-author 1, 12, 25, 26
Mr. D. Grant Feasby, P.Eng.	P&E Mining Consultants Inc.	13, 20 and Co-author 1, 6, 25 26

2.4 UNITS AND CURRENCY

In this Technical Report, all currency amounts are stated in Canadian dollars (“$”) unless otherwise stated. At the time of this Technical Report the 12-month trailing average exchange rate between the US$ and the CDN$ is 1 US$ = 1.327 CDN$ or 1 CDN$ = 0.754 US$.

Commodity prices are typically expressed in US dollars (“US$”) and will be so 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 gold grades (“g/t Au”). Platinum group metal (“PGM”) and gold grades may also be reported in parts per million (“ppm”) or parts per billion (“ppb”). Metal values are reported in percentage (“%”), grams per metric tonne (“g/t”) and parts per billion (“ppb”). Quantities of PGM and gold may also be reported in troy ounces (“oz”) and quantities of copper in avoirdupois pounds (“lb”). Copper metal assays are reported in percent (“%”) or parts per million (“ppm”) while gold and PGM assay values are reported in grams of metal per tonne (g/t) unless ounces per short ton (“oz/T”) are specifically stated. Abbreviations and terminology are summarized in Table 2.2.

Grid coordinates for maps are given in the UTM NAD 27 Zone 16N or as latitude/longitude.

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
“$”	dollar(s)
“°”	degree(s)
“°C”	degrees Celsius
<	less than
>	greater than
“%”	percent
“3-D”	three-dimensional
“AAS”	atomic absorption spectrometry
“Accurassay”	Accurassay Laboratories
“Ag”	silver
“asl”	above sea level
“AMEC”	AMEC Earth and Environmental
“Anaconda”	Anaconda Canada Exploration Ltd.
“Au”	gold
“BHP”	BHP Engineering Pty Ltd.
“CAC”	Proterozoic Coldwell Alkaline Complex
“CEAA”	Canadian Environmental Assessment Act (now Impact Assessment Agency 2019)
“CIM”	Canadian Institute of Mining, Metallurgy, and Petroleum
“cm”	centimetre(s)
“CN”	cyanide
“conc”	concentrate

TABLE 2.2
TERMINOLOGY AND ABBREVIATIONS

Abbreviation	Meaning
"Cu"	copper
"DDH"	diamond drill hole
"DFO"	Fisheries and Oceans Canada
"$M"	dollars, millions
"EA"	Environmental Assessment
"EcoMetrix"	EcoMetrix Incorporated
"EIS"	Environmental Impact Statement
"EMRD"	Extraction Metallurgy Research Division
"Euralba"	Euralba Mining Ltd
"Exen"	Exen Consulting Services
"Fleck"	Fleck Resources Ltd.
"ft"	foot
"FW"	Freewest Resources Inc.
"g"	gram
"GDS"	Geo Data Solutions GDS Inc.
"Geomaque"	Geomaque Explorations Ltd.
"Gen Mining"	Generation Mining Limited
"Geostat"	Geostat Systems International
"g/t"	grams per tonne
"ha"	hectare(s)
"HADD"	Harmful Alteration, Disruption or Destruction of Fish Habitat
"HGPR"	high pressure grinding rolls
"HLEM"	horizontal loop electromagnetic survey
"ID"	identification
"ID^3"	inverse distance cubed
"ID^2"	inverse distance squared
"IP"	induced polarization
"IRR"	internal rate of return
"ISO"	International Organization for Standardization
"JRP"	Joint Review Panel
"JV"	joint venture
"k"	thousand(s)
"kg"	Kilograms(s)
"KHD"	KHD Humboldt Wedag GmbH
"km"	kilometre(s)
"L"	litre(s)
"LCT"	locked cycle flotation tests
"LG"	Lerchs-Grossmann algorithm
"LIMS"	local information management system
"LMOC"	Layered Magnetite Olivine Cumulate
"L/s"	litres per second
"LUMINX"	Lakehead University's Mineralogy and Experimental Laboratory

TABLE 2.2 TERMINOLOGY AND ABBREVIATIONS	
Abbreviation	**Meaning**
“lb”	avoirdupois pound (weight)
“m”	metre(s)
“m^3”	cubic metre(s)
“Ma”	millions of years
“Mackie”	Mr. Bruce Mackie Geological Consulting Services
“Mag”	magnetic
“Marathon Deposit”	Marathon Project, Marathon Palladium-Cu Project, the Project
“max.”	maximum
“mbs”	metres below surface
“MECP”	Ministry of Environment, Conservation and Parks
“Mg”	magnesium
“Micon”	Micon International Limited
“min.”	minimum
“mm”	millimetre
“MENDM”	Ontario Ministry of Energy, Northern Development and Mines
“MOEPC”	Ontario Ministry of Environment Conservation and Parks
“Moz”	million ounces
“m RL”	metres relative level
“MRS”	Mid-continent Rift System
“Mt”	mega tonne or million tonnes
“NAD”	North American Datum
“NE”	northeast
“Ni”	nickel
“NI”	National Instrument
“NN”	nearest neighbour
“Nordmin”	Nordmin Engineering Ltd.
“NovaWest”	NovaWest Resources Inc.
“NRCan”	Natural Resources Canada
“NSR”	net smelter royalty
“NPV”	net present value
“NW”	northwest
“OEA Act”	Ontario Environmental Assessment Act
“OUI”	oxide ultramafic intrusions
“oz”	Troy ounce
“P_{80}”	80% percent passing
“P&E”	P&E Mining Consultants Inc.
“Pb”	lead
“Pd”	palladium
“PEA”	Preliminary Economic Assessment
“P.Eng.”	Professional Engineer
“PGE”	platinum group element
“P.Geo.”	Professional Geoscientist

Table 2.2 **Terminology and Abbreviations**	
Abbreviation	**Meaning**
"PGM"	Platinum Group Metal
"Polymet"	Polymet Mining Corp.
"ppb"	parts per billion
"ppm"	parts per million
"PRFN"	Pic River First Nation
"Property"	the Marathon Palladium-Copper Property that is the subject of this Technical Report
"PSMA"	process solids management areas
"PSMF"	processed solids management facility
"Pt"	platinum
"PWQO"	Provincial Water Quality Objectives
"QA/QC"	quality assurance/quality control
"QMS"	quality management system
"RDi"	Resource Development Inc.
"Rh"	rhodium
"S"	sulphur
"SE"	southeast
"SEDAR"	System for Electronic Document Analysis and Retrieval
"SGS-L"	SGS Lakefield Research
"Stillwater"	Stillwater Canada Inc.
"SW"	southwest
"t"	metric tonne(s)
"TBN"	Thunder Bay North Deposit
"TC"	Transport Canada
"TDL Gabbro"	Two Duck Lake Gabbro
"Technical Report"	this NI 43-101 Technical Report
"Teck"	Teck Corporation
"the Company"	Generation Mining Limited
"t/m^3"	tonnes per cubic metre
"tpd"	tonnes per day
"TPGM"	total PGM
"True Grit"	True Grit Consulting Ltd.
"US$"	United States dollar(s)
"UTM"	Universal Transverse Mercator grid system
"VA"	voluntary agreement
"VECs"	valued ecosystem components
"WT"	Wehrlite-Troctolite
"WRSF"	waste rock storage facility
"XPS"	Xtrata Process Research
"Zn"	zinc

3.0 RELIANCE ON OTHER EXPERTS

P&E has assumed that all the information and technical documents listed in the Sources of Information section of this Technical Report are accurate and complete in all material aspects. While P&E carefully reviewed all the available information presented, P&E cannot guarantee its accuracy and completeness. P&E reserves the right, but will not be obligated to revise our report and conclusions if additional information becomes known to P&E subsequent to the effective date of this Technical Report.

The authors have relied largely on the documents listed in the Sources of Information and the site visit for the information in this Technical Report, however, the conclusions and recommendations are exclusively the authors. The results and opinions outlined in this Technical Report are dependent on the aforementioned information being current, accurate and complete as of the effective date of this Technical Report and it has been assumed that no information has been withheld which would impact the conclusions or recommendations made herein. P&E does not assume any responsibility or liabilities that may arise as a result of this Technical Report being used contrary to its intended purpose.

A draft copy of this Technical Report has been reviewed for factual errors by Gen Mining. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statement 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 Technical Report.

The authors wish to emphasize that they are Qualified Persons only in respect of the areas in this Technical Report identified in their "Certificates of Qualified Persons" submitted with this Technical Report to the Canadian Securities Administrators.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

The Marathon Property is located approximately 10 kilometres ("km") north of the Town of Marathon, Ontario which is situated adjacent to the Trans-Canada Highway No. 17 on the northeast shore of Lake Superior. Thunder Bay is approximately 300 km westward along Highway 17 while Sault Ste. Marie is approximately 400 km to the southeast along the same Highway 17. Marathon has a population of approximately 3,200 (2016 census).

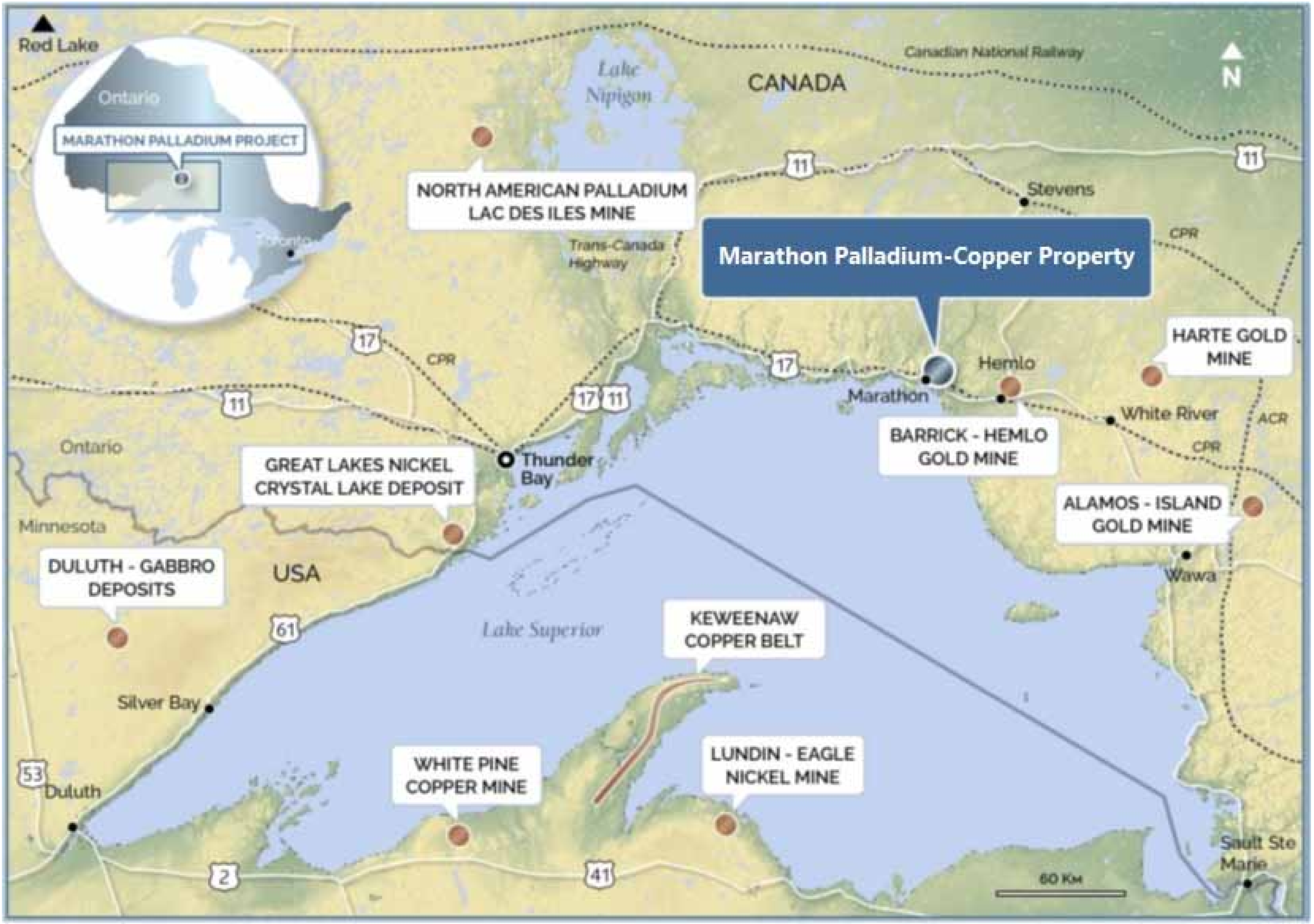
Local access to the Property is by all-weather gravel road from highway 17 (Figures 4.1 and 4.2), which lies just north of Marathon and immediately south of the Property. The centre of the proposed Project footprint sits at approximately 48° 45' N Latitude, 86° 19' W Longitude.

The primary industry supporting the Town of Marathon is mining (Figures 4.1 and 4.2).

FIGURE 4.1 REGIONAL LOCATION MAP

Source: Marathon PGM Corp. (2006)

FIGURE 4.2 REGIONAL MINING ACTIVITY MAP



Source: *Generation Mining Limited (2019)*

4.2 PROPERTY DESCRIPTION AND TENURE

The original Marathon Property held by Stillwater Canada Inc. from 2010 to 2019 has since been enlarged by Gen Mining through the periodic staking of unpatented mining claims. As summarized in Appendix K, and illustrated in Figure 4.3 below, Gen Mining during the summer of 2019 staked an additional 215 claim blocks totalling 4,558 hectares ("ha"). This increases Gen Mining's land position to include 45 leases and 1,071 claims, or 21,965 ha (219.65 square kilometres) at the effective date of this Technical Report.

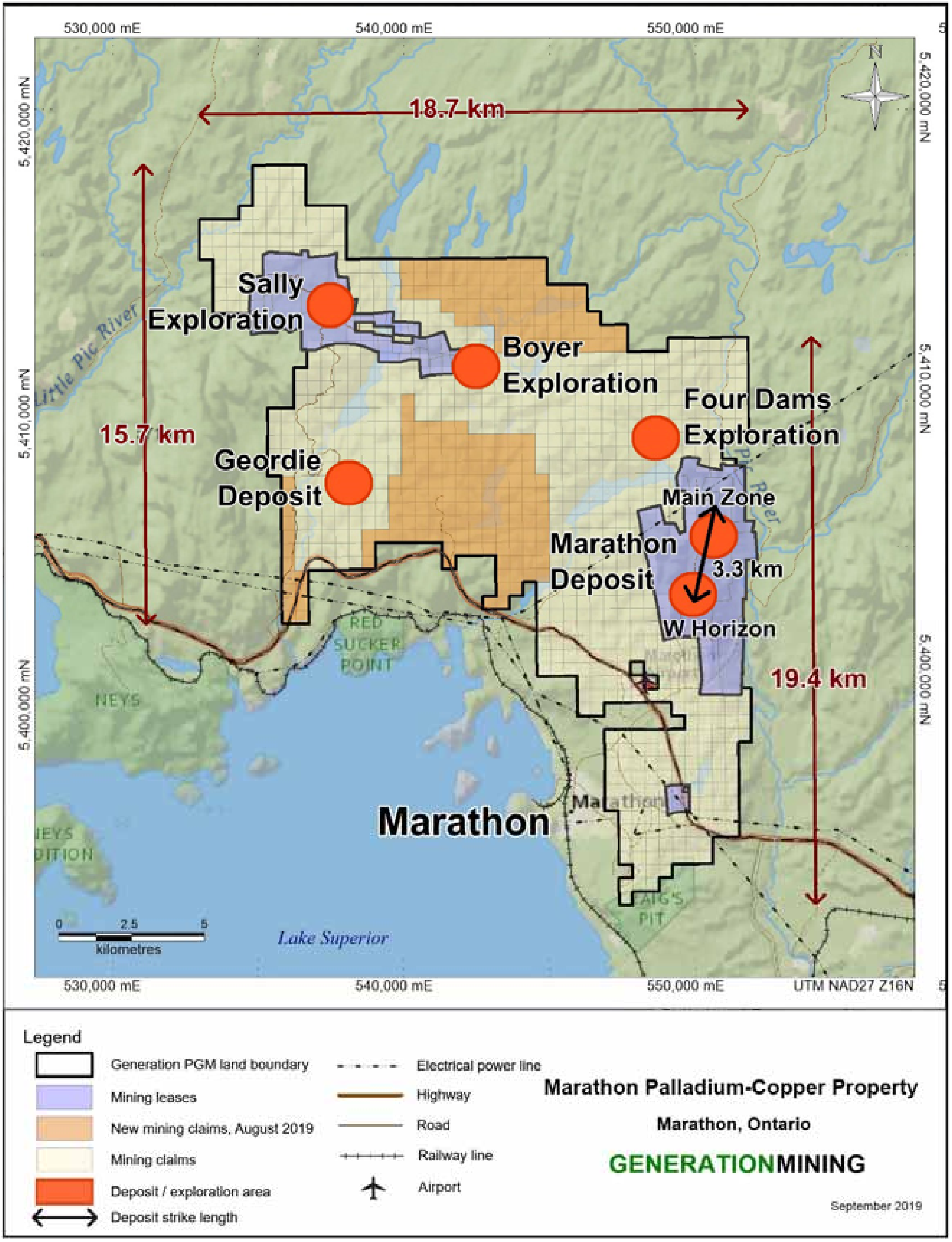
The 45 Leases are located in Seeley Lake Township and total 4,810.19 ha. The recorded dates and expiry dates are listed in Appendix K.

Claim information (Figure 4.3) an also be found in Appendix K. All claims have been renewed to their respective anniversary dates from 2020 to 2022. To retain the claims in good standing assessment work by Gen Mining will have to be applied by these dates. The claims are registered in the name of Generation PGM Inc., a subsidiary of Generation Mining Inc. There are no outstanding royalties on the Marathon Deposit, however, varying royalties exist on remaining land package (refer to Figure 4.4). A complete summary of the encumbrances can be found in Appendix K.

In 2010, the Marathon Property was acquired by Stillwater Mining Company (NYSE: SWC) from Marathon PGM Corporation (TSX: MAR) for US$118 million. At that time, Stillwater was a palladium and platinum mining company with headquarters located at Littleton, Colorado, USA. Stillwater mined PGMs from the Stillwater igneous complex in south central Montana known as the J-M Reef and recovered metals from spent catalytic converters. Stillwater later (in 2017) was acquired for $2.2 billion by Sibanye Gold Limited (NYSE: SBGL) and renamed Sibanye-Stillwater (NYSE: SBGL). On July 11, 2019 Generation Mining Limited had (through a wholly-owned subsidiary), completed the acquisition of a 51% initial interest in the Marathon Property, from Stillwater Canada Inc. ("Stillwater"), a wholly owned subsidiary of Sibanye Gold Limited, and entered into a joint venture agreement with respect to the Property. Gen Mining can increase its interest in the Property and joint venture to 80% (the "Second Interest") by spending $10 million and preparing a Preliminary Economic Assessment within four years (the "Second Earn-In Period").

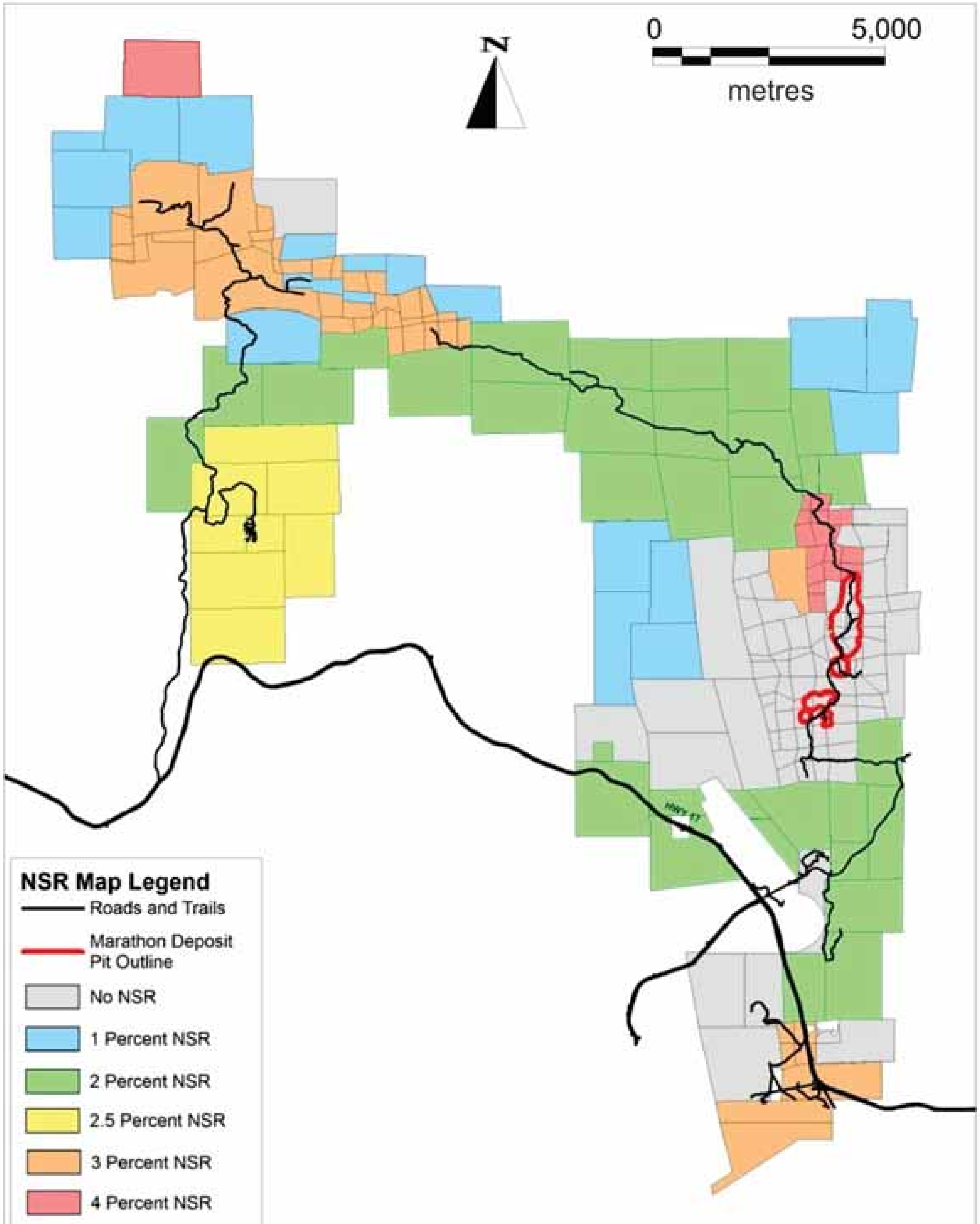
On July 9, 2019, the proceeds of the previously completed $8 million bought deal private placement financing led by Haywood Securities Inc. were released from escrow, and the 28,572,000 outstanding subscription receipts were converted into an aggregate of 28,572,000 common shares and 14,286,000 common share purchase warrants. On Closing, Gen Mining paid to Stillwater $2.9 million in cash (in addition to the $100,000 previously paid upon signing the letter of intent) and issued 11,053,795 common shares of Gen Mining at a deemed price per common share of $0.2714 (totaling $2,999,999.96), for a total consideration payment to Stillwater of $5,999,999.96 for the initial 51% interest.

FIGURE 4.3 MARATHON DEPOSIT CLAIM LOCATION MAP



Source: *Generation Mining Limited (2019)*

FIGURE 4.4 SUMMARY ROYALTY ("NSR") MAP



Source: *Stillwater Canada Inc. (2018)*

Gen Mining is now the operator of the Project (unless its interest in the joint venture reduces to a minority interest) and will assume all liabilities of the Property in such operatorship capacity, including funding all activities. During the Second Earn-In Period, Gen Mining must sole-fund all expenditures in respect of the Property and related activities. Once Gen Mining has earned the Second Interest, the parties will fund expenditures on a pro rata basis (80% funded by Gen Mining and 20% funded by Stillwater) in order to maintain their respective interests in the joint venture, subject to normal dilution provisions. If Gen Mining does not earn into the Second Interest, then for a period of 90 days after the termination of the Second Earn-In Period, Stillwater shall have a one-time option to re-acquire from Gen Mining a 31% participating interest in the joint venture (for a total 80% participating interest) for CDN$1.00 and become operator under the joint venture at such time.

Upon a Feasibility Study being prepared and the management committee of the joint venture making a positive commercial production decision, (as long as Stillwater has a minimum 20% interest in the Property), then Stillwater will have 90 days to exercise an option to increase its participating interest in the joint venture from its current percentage up to 51% (the "Percentage Differential") by agreeing to fund an amount of the total capital costs as estimated in the feasibility study, multiplied by the Percentage Differential, in addition to its pro rata proportion of costs that it would fund at its current participating interest level. Should this option be exercised, Stillwater would also take over operatorship of the Project at such time.

As a result of the Closing, Stillwater now owns 12.96% percent of Gen Mining's issued and outstanding common shares on an undiluted basis. The common shares issued to Stillwater on Closing are subject to a statutory hold period in Canada of four months and one day expiring November 11, 2019. Prior to the Closing, Stillwater did not own any common shares of Gen Mining. Following the Closing, Stillwater owns 11,053,795 common shares of Gen Mining. Stillwater stated that *"the acquisition of the common shares is for investment purposes only and Stillwater has no present intention to acquire further securities of Gen Mining although Stillwater may in the future and in accordance with applicable securities laws, increase or decrease its investment in the Company.* (Extracted from a Gen Mining press release dated July 11, 2019)

4.3 ONTARIO MINERAL TENURE

The claims information presented in this section is valid as of the effective date of this Technical Report. Currently, the Ministry of Energy, Northern Development and Mines ("MENDM") is in the process of converting from a system of ground staking to a system of online registration of mining claims. The MENDM implemented the new system on April 10, 2018.

Ontario Crown lands are available to licensed prospectors for the purposes of mineral exploration. A licensed prospector must first stake a mining claim to gain the exclusive right to explore on Crown land. Claim staking is governed by the Ontario Mining Act and is administered through the Provincial Mining Recorder and Mining Lands offices of the MENDM.

Mining claims can be staked either in a single unit or in a block consisting of several single units. In un-surveyed territory, a single unit claim is laid out to form a 16 hectare (40 acre) square with boundary lines running 400 m (1,320 ft) astronomic north, south, east and west. Multiples of single units, up to a maximum of 16 units (256 ha), may be staked with only a perimeter boundary as one block claim.

Upon completion of staking, a recording application form is filed with payment to the Provincial Recording Office. All claims are liable for inspection at any time by the Ministry. A claim remains valid as long as the claim holder properly completes and files the assessment work as required by the Mining Act and the Minister approves the assessment work. A claim holder is not required to complete any assessment work within the first year of recording a mining claim. In order to keep an unpatented mining claim current, the mining claim holder must perform $400 worth of approved assessment work per mining claim unit, per year; immediately following the initial staking date, the claim holder has two years to file one year's worth of assessment work. Claims are forfeited if the assessment work is not done.

A claimholder may prospect or carry out mineral exploration on the land under the claim. However, the land covered by these claims must be converted to leases before any development work or mining can be performed. Mining leases are issued for twenty-one-year terms and may be renewed for further twenty-one-year periods. Leases can be issued for surface and mining rights, mining rights only or surface rights only. Once issued, the lessee pays an annual rent to the province. Furthermore, prior to bringing a mine into production, the lessee must comply with all applicable federal and provincial legislation.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESS

The Marathon Property is located at latitude 48°45' N and longitude 86°19' W. Local access to the Property is by paved and gravel road, Figure 5.1, from the Town of Marathon, approximately 10 km to the north of the town. Stillwater Canada Inc carried out engineering studies and an impact assessment on upgrading the current road and proposed that a new access road is required with the preferred route following a similar corridor as the existing access route.

FIGURE 5.1 ACCESS ROAD PHOTOGRAPH

Source: *Generation Mining Limited (2019)*

5.2 CLIMATE

The Marathon Project climate is typical of northern areas within the Canadian Shield with long winters and short but warm to hot summers. The climate does not create any problem for exploration with diamond drilling and other non-geological/geochemical work is able to be carried out at any time without difficulty, except for limited access issues during the four week period of "spring break up", when most gravel roads are not suitable for driving and load weight restrictions are in place on the Highways.

Average annual precipitation in the area of Marathon was 826 mm for the period 1952-1983, of which 240 mm fell as snow. Average annual surface runoff is approximately 390 mm. The annual average temperature is 1°C with the highest average monthly temperature of 15°C in August and lowest in January of -15°C (Environment Canada).

5.3 LOCAL RESOURCES

Logistical support, in terms of power and telephone lines, is available at the Property as well as at the Town of Marathon, which is linked to the Ontario Power grid. Water is available from the Pic River as well as many lakes and creeks which drain the general area.

Infrastructure for mining equipment and personnel are available at Thunder Bay, some 300 km west of the Property. There are several active mines in the general area and thus some local mining services are available in the Town of Marathon.

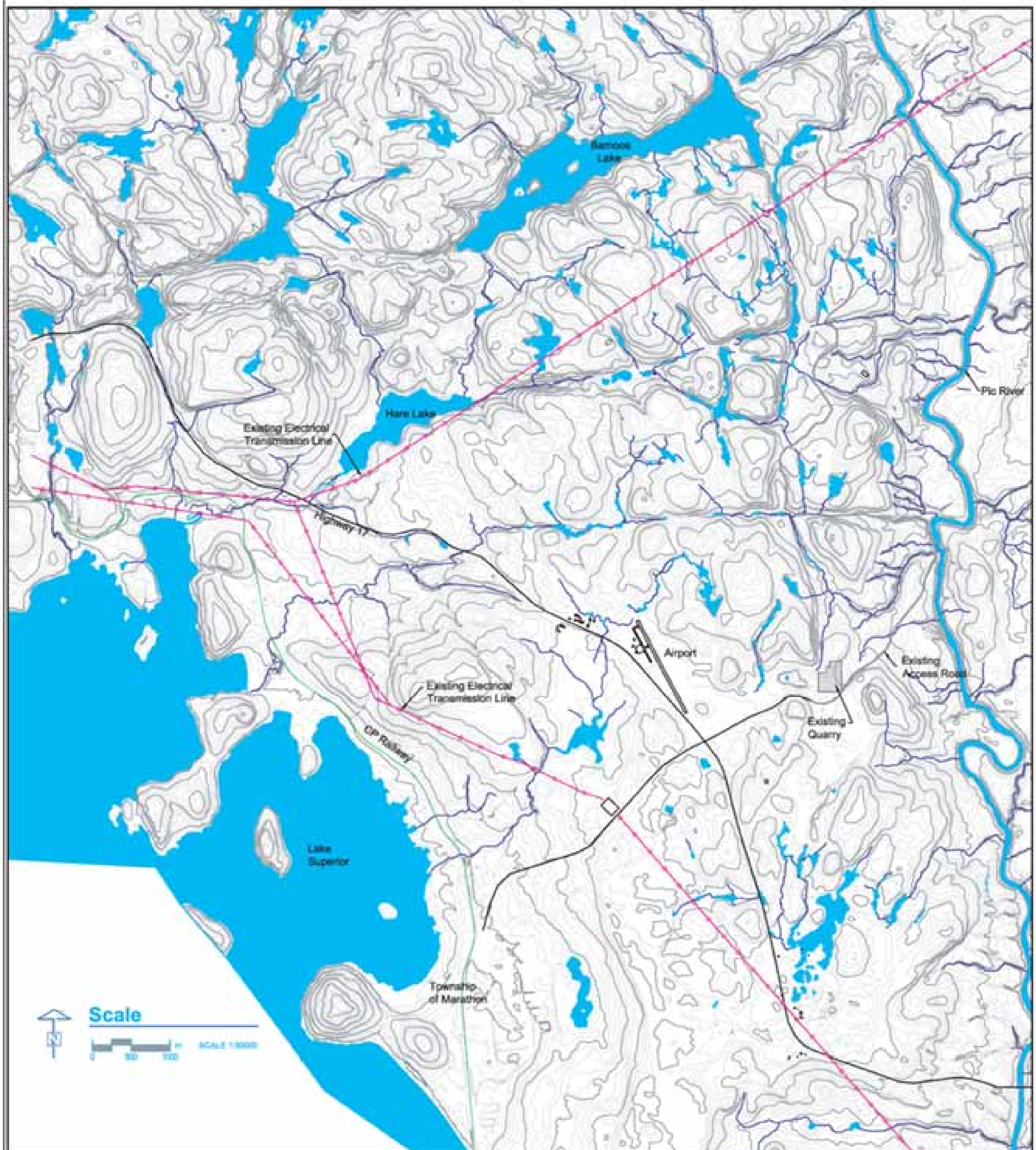
A high voltage power line transects the Property. A rail line runs close to the Marathon Property and shallow water dock facilities are available at Marathon and Heron Bay. (Figure 5.2).

March 21, 2019, the Minister of the Environment, Conservation and Parks approved the environmental assessment for the East-West Tie transmission project which is a proposed 450 km double-circuit 230 kV transmission line connecting the Lakehead Transfer Station in the Municipality of Shuniah near the city of Thunder Bay to the Wawa Transfer Station located east of the Municipality of Wawa. It will also connect to the Marathon Transformer Station.

The Marathon airport is located immediately north of the Town of Marathon, and runs adjacent to Highway 17, Figure 5.2. It is near the southwest corner of the Marathon Property. Marathon Municipal Airport (CYSP), operates as a Registered Airport (Aerodrome class) under the Canadian Aviation Regulations (CARs; Subsection 302). The airport is used by private aircraft owners and several small commercial helicopter companies. As of the effective date of this Technical Report, no commercial flight service is available.

Land-use activities in the area include hunting, fishing, trapping and snowmobiling. The existing access road is likely used by anglers to access the Pic River, Figure 5.2, and by snowmobile users in the winter. Sport fishing activity is focused on the Pic River which contains a variety of warm water fish species and in Hare and Bamoos Lakes located northwest of the Project. Pukaskwa National Park is located near the mouth of the Pic River approximately 20 km downstream of the Property.

FIGURE 5.2 ACCESS, TOPOGRAPHY, PHYSIOGRAPHY MARATHON PROJECT MAP



Source: *Marathon PGM Corp. (2010)*

5.4 PHYSIOGRAPHY

The Marathon Project is located in an area of moderate to steep, hilly terrain typical of glaciated areas of the Canadian Shield, Figure 5.3. The surrounding terrain is typical boreal forest cover, with significant topographic relief characterized by relatively flat plateaus, truncated at steep cliffs adjacent to a series of creeks and ponds. The vegetation consists of northern hardwood and conifer trees as well as muskeg areas, which are bogs or wetlands common to all boreal forest regions. The land is not used for agriculture. Wildlife includes black bear, wolves, moose, rabbits and various migratory birds.

The site is bounded to the east by the Pic River (Figures 5.2 and 5.4) and Lake Superior to the south and west. The Project site is drained by a total of six primary subwatersheds, four of which drain to the Pic River whereas the remaining two drain directly to Lake Superior. All other small creeks in the area drain into the Pic River. The interior of the Marathon Project site is isolated from both the Pic River and Lake Superior by steep relief (i.e., topography) and therefore much of this area is fishless. In the instances where fish do occur the community is limited to small-bodied (forage) fish (EcoMetrix, 2012).

The general elevation around the mine site is slightly higher than the overall regional topography. Ground surface elevations in the area of the Marathon Property range from about 260 m to over 400 m above sea level with a gradual decrease in elevation from north to south.

Occasional outcrops of gabbro are present on the Property and overburden which consists of boulder till with gabbro and mafic volcanic boulders, ranges from 3 m to 10 m in thickness.

FIGURE 5.3 TOPOGRAPHY PHOTOGRAPH

Source: Sibanye-Stillwater Website

FIGURE 5.4 PIC RIVER PHOTOGRAPH

Source: *Stillwater Canada Inc. (2012)*

6.0 HISTORY

6.1 EXPLORATION HISTORY

Marathon area exploration for copper and nickel deposits started in the 1920s and continued until the 1940s with the discovery of titaniferous magnetite and disseminated chalcopyrite occurrences.

6.1.1 Summary 1964 – 2019

During the past four decades, the Marathon Project underwent several phases of exploration and economic evaluation, including geophysical surveys, prospecting, trenching, diamond drilling programs, geological studies, Mineral Resource Estimates, metallurgical studies, mining studies, and economic analyses. These studies have successively enhanced the knowledge base on the Deposit. The following historical summary of work is taken, in part, from the internal Nordmin Marathon PGM-CU Feasibility Study dated March 14, 2014.

In 1963, Anaconda acquired the Marathon Property and carried out systematic exploration work including diamond drilling of 32,741 m in 151 drill holes from 1964-1966. This culminated in the discovery of a large copper-PGM deposit. Many of the holes were drilled in areas off the present Marathon Property. Anaconda carried out a test pitting program that recovered 350 t of mineralized material and sent it for testing to its Extraction Metallurgy Research Division ("EMRD") facilities. Anaconda conducted a number of metallurgical tests intermittently from 1965 to 1982, as described under the section on Mineral Processing and Metallurgical Testing. Anaconda's primary objective was to improve metallurgical recoveries of copper and increase the copper concentrate grade. Anaconda discontinued further work on the Project in the early 1980s due to low metal prices at the time.

In 1985, Fleck purchased a 100% interest in the Marathon Property with the objective of improving the Project economics by focusing on the platinum group element ("PGM") values of the Marathon Deposit. Fleck carried out an extensive program, which included re-assaying of the Anaconda drill core, further diamond drilling, surface trenching of the mineralized zones, bulk sampling and a pilot plant testing, at Lakefield Research Limited. The Fleck drilling totaled 3,627 m in 37 diamond drill holes. On June 10, 1998, Fleck changed its name to Polymet Mining Corp.

In 1986, H.A. Symons carried out a Feasibility Study for Fleck based on a 9,000 tonnes per day ("tpd") conventional flotation plant with marketing of copper concentrate. The study indicated a low internal rate of return. In 1987, Kilborn Limited carried out a Pre-Feasibility review for Fleck that included preliminary results from the Lakefield pilot plant tests (Kilborn Limited, 1987). The study envisaged a 13,400 tpd conventional flotation plant with marketing of copper concentrate but the study indicated a low internal rate of return, later confirmed by Teck Corporation.

In late 1987, Teck Corporation ("Teck") prepared a Preliminary Economic Feasibility Report on the Fleck's Marathon Project based on a conventional open pit operation and concluded that the Project was uneconomic due to low metal prices at that time.

In 1987, Euralba Mining Ltd. (“Euralba”); an Australian Junior mining company entered into a joint venture agreement with Fleck which is 1998 changed its name to PolyMet Mining Corp.

In 1989, BHP Engineering Pty Ltd. (“BHP”) carried out a Pre-Feasibility study for Euralba, compiled some 2,500 samples of drill core and had them assayed at Lakefield. Euralia retained Geostat Systems International (“Geostat”) to develop a Mineral Resource block model of the Marathon Deposit that was used by BHP to design an optimized open pit. BHP considered several metallurgical processes, including an on-site smelter process.

In 1998, Fleck changed its name to PolyMet Mining Corp.

In 2000, Geomaque Exploration Ltd. acquired certain rights to the Marathon Project through an option agreement with Polymet. Under the terms of the November 7, 2000 option agreement, Geomaque could earn a 50% interest in the Property by spending $2,750,000 on exploration or completing a Feasibility Study by October 31, 2004. The terms of the option agreement also allowed Geomaque to earn an additional 10% interest in the Marathon Project by making a payment of $1,000,000 within three months of the fourth anniversary of the option agreement.

Geomaque and its consultants carried out a study of the economic potential of the Marathon Project. The study included a review of the geology and drill hole database, interpretation of the mineralized zones, statistics and geostatistics, computerized block model, Mineral Resource estimation, open pit design and optimization, metallurgy, process design, environmental aspects, capital and operating cost estimates and cash flow modeling. Geomaque also completed 15 diamond drill holes totaling 3,158 m, however, results were not available for incorporation in the study. The internal Geomaque study was presented as a NI 43-101 compliant report titled “Marathon Palladium Project Preliminary Assessment and Technical Report” dated April 9, 2001.

Marathon PGM Corp. acquired the Marathon Project from PolyMet in December 2003 and carried out exploration and various studies from 2004 through 2010. On December 23, 2003, Roscoe Postle Associates Inc. was retained by Marathon PGM Corporation (“Marathon”), to prepare an independent Technical Report on the Marathon Project including an independent Mineral Resource Estimate. The purpose of the report was to provide an independent assessment of the Marathon Project in relation to an initial public offering by the company. As part of their assignment RPA prepared a Mineral Resource Estimate of the Marathon Deposit using the same drill hole database that Geomaque used for its 2001 Mineral Resource Estimates. In addition to the drill hole database, RPA used the assay database from trenches on the Marathon Deposit that were excavated by Anaconda and Fleck.

Marathon PGM Corp. funded programs of advanced exploration and diamond drilling on a continuous basis between June 2004 and 2009. Approximately 617 holes and 113,030 m were drilled from 2004 to 2009 to define to expand the resource and for condemnation holes outside of the pit area. In 2006, a Technical Report titled “Technical Report and Resource Estimate on the Marathon PGM-Cu Property, Marathon” was prepared by P&E Mining Consultants Inc. and dated March 24, 2006. In 2007, P&E authored a second Technical Report titled “Updated Technical Report and Preliminary Economic Assessment on the Marathon PGM-Cu Property, Marathon Area” for Marathon PGM Corp dated February 19, 2007. An internal study on the

Mineral Resource update of the Geordie Palladium-Copper Property was produced on June 4, 2008 and filed on SEDAR. A Feasibility Study was published in 2008 and updated in January 2010 by Micon/Metchem titled "Technical Report on the Updated Mineral Resource Estimate and Updated Feasibility Study for the Marathon PGM-Cu Project" dated January 8, 2010. P&E was one of the authors of the 2008 Technical Report.

Stillwater Mining Company and Marathon PGM Corp. entered into an agreement on September 7, 2010 pursuant to which Stillwater would acquire all of the outstanding shares of Marathon PGM Corp. The agreement closed on November 30, 2010. Stillwater formed a Canadian corporation, Stillwater Canada Inc. In March 2012, MC Mining Ltd. of South Africa (formerly called Coal of Africa Limited) purchased 25% interest in Stillwater Canada Inc. In March 2014, Nordmin Engineering Ltd. provided Stillwater Canada with an internal Feasibility Report on the Marathon Project. Stillwater drilled a total of 45 holes totaling 10,285 metres.

From 2011 to 2017 Stillwater Canada Inc. developed trail access; and conducted a systematic approach to prospecting, geological mapping, trenching, geophysics and some diamond drilling. The Company also re-logged over 150 drill holes. A total of 45 holes or 9,767 metres of core was recovered.

In 2017, Stillwater Mining Company was acquired for $2.2 billion by Sibanye Gold Limited (NYSE: SBGL) and renamed Sibanye-Stillwater (NYSE: SBGL).

On July 11, 2019 Generation Mining Limited had (through a wholly-owned subsidiary), completed the acquisition of a 51% initial interest in the Marathon Palladium-Copper Property from Stillwater Canada Inc., a wholly owned subsidiary of Sibanye Gold Limited, and entered into a joint venture agreement with respect to the Property. Gen Mining can increase its interest in the Property and joint venture to 80% by making certain exploration

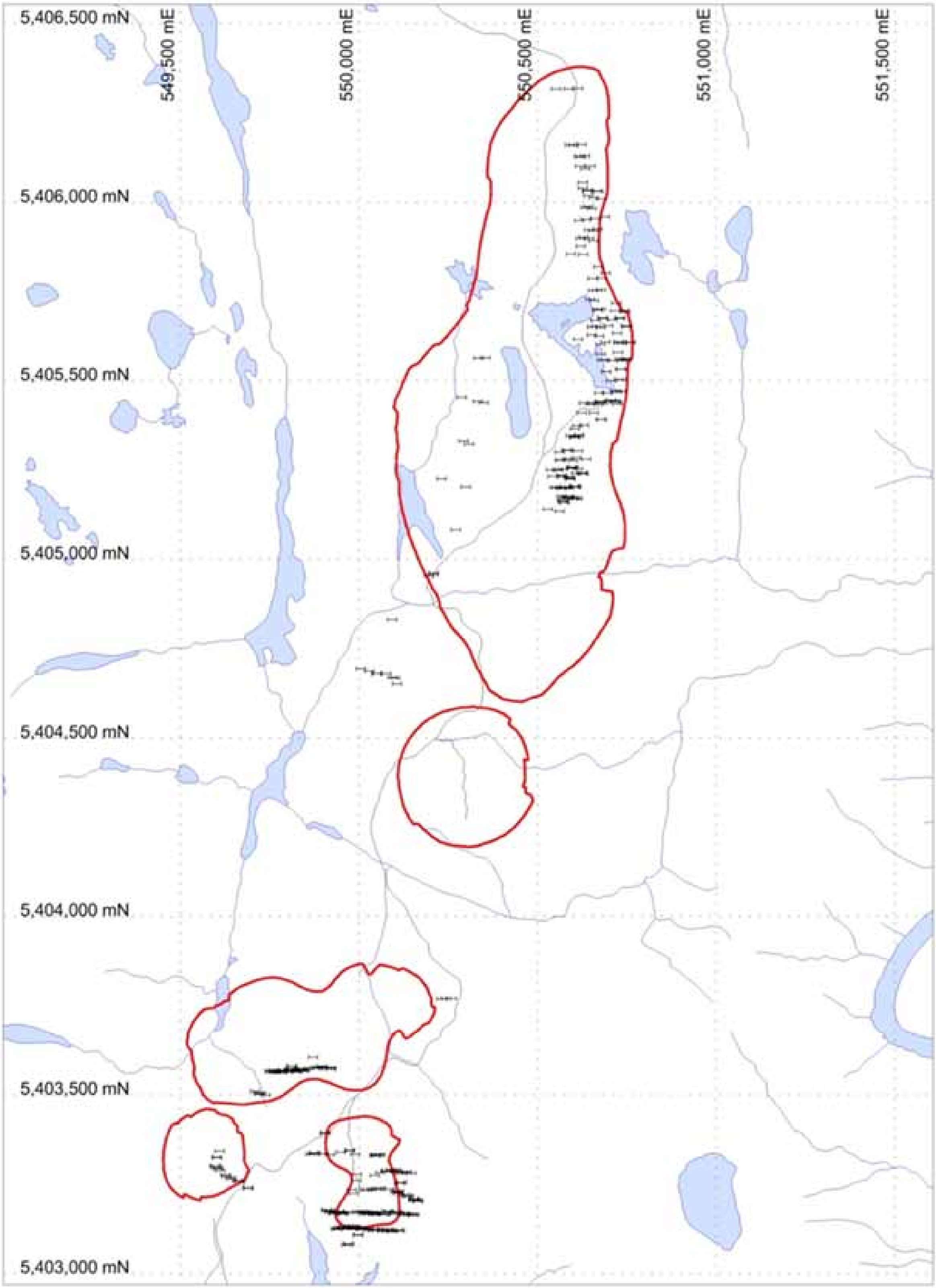
6.2 HISTORICAL TRENCHING

Trenching and the respective channel sampling at the Marathon Deposit were integral to developing an understanding of the mineralization. The location of trenches with respect to the 2009 planned pit outline is presented in Figure 6.1. Special care was taken during preparation of the channel cuts to ensure representative and continuous sampling. The entire trench related channels were used in the preparation of the historical 2012 Mineral Resource Estimate prepared by P&E.

Fleck Resources conducted a significant trenching program at approximately 50 m intervals along the length of the Main Zone. Marathon PGM Corp. applied trenching in the southern area of the deposit between 2004 and 2006 to help define and delineate the Main Zone and W Horizon at the surface. Marathon PGM Corp. continued trenching in 2008 just west of the Main Zone to delineate continuity of mineralization located higher up in the stratigraphic section.

A summary of trenching details can be found in Table 6.2 under historical drilling, which contains the drill hole summary.

FIGURE 6.1 LOCATION MAP OF TRENCH SAMPLES USED IN PREPARATION OF THE 2012 MINERAL RESOURCE ESTIMATE



Source: *Stillwater Canada Inc. (2012)*

6.2.1 Validation of Trench Assay Data in the Marathon Deposit Main Zone

The Marathon Deposit database contains 1,736 surface sample assays collected from channels that were saw cut along lines spaced 30 to 50 metres apart along approximately 2 km strike length. The channels were cut in approximately straight lines located close to and perpendicular to the base of the deposit during the years 1985 to 1986 and 2005 to 2009.

It is assumed that the operator did not add bias to the sampling. This seems reasonable given the disseminated nature of the Deposit and that the Footwall and Main Zones of the deposit are tens of metres thick.

To validate channel samples cut by Fleck Resources, a total of 17 duplicate channel samples were cut beside the historic channels. A comparison of the 1986 and 2012 field duplicate sample data is presented in Table 6.1 and Figure 6.2.

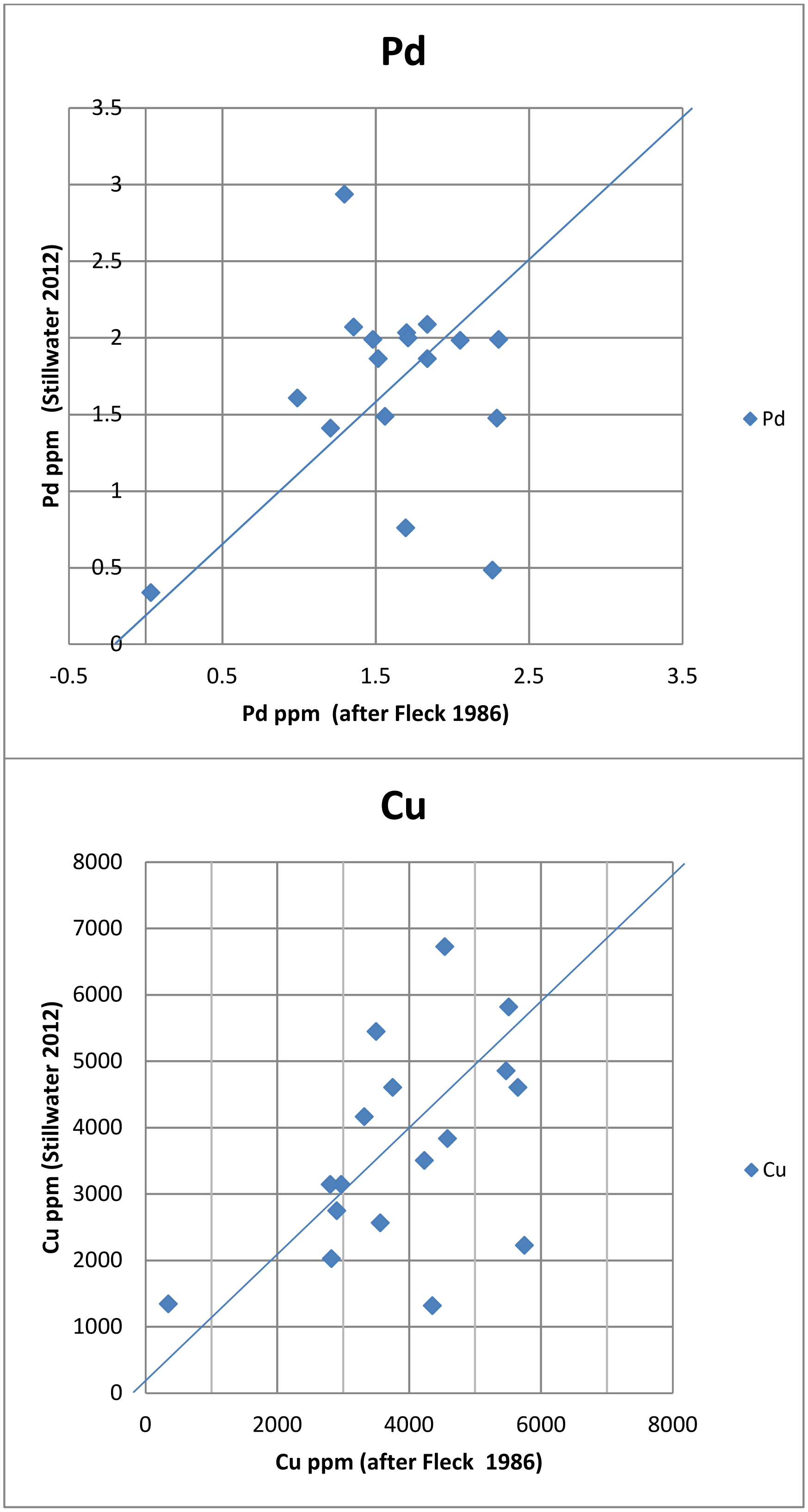
Although the Cu-Cu and Pd-Pd plots (Figure 6.2) exhibit scatter that is typical of field duplicates, the points are distributed in a cluster close to a curve for 1:1 on each plot and the averages for the two sample groups are very close (Table 6.1) and thus confirms the reliability of using the trench channel cuts in the 2012 Mineral Resource Estimate.

TABLE 6.1
COMPARISON OF FIELD DUPLICATE CHANNEL SAMPLES FROM 1986 WITH SAMPLES FROM 2012

Fleck Trench	From (m)	To (m)	1986 Sample No.	2012 Sample No.	1986 Au (g/t)	2012 Au (g/t)	1986 Pt (g/t)	2012 Pt (g/t)	1986 Pd (g/t)	2012 Pd (g/t)	1986 Cu (ppm)	2012 Cu (ppm)
272-1	0.0	1.3	F-3965	K004973	0.09	0.082	0.349	0.334	1.478	2.29	2,030	2,820
272-1	1.3	5.2	F-3966	K004974	0.13	0.116	0.64	0.31	2.938	1.295	6,730	4,540
270-0	0.0	4.1	F-3996	K004975	0.13	0.208	0.383	0.611	2.035	1.7	2,570	3,560
270-0	4.1	9.5	F-3997	K004976	0.085	0.127	0.256	0.224	1.609	0.989	2,750	2,900
270-0	9.5	11.4	F-3998	K004977	0.139	0.199	0.272	0.546	1.992	2.3	4,610	5,650
270-9	0.0	3.2	F-3998	K004978	0.139	0.159	0.272	0.368	1.992	1.48	4,610	3,750
270-9	3.2	5.7	F-3999	K004979	0.119	0.093	0.252	0.343	2.072	1.355	5,450	3,500
270-9	5.7	7.6	F-4000	K004980	0.14	0.181	0.34	0.462	2.001	1.71	5,820	5,510
270-25	0.0	1.9	F-9801	K004981	0.103	0.226	0.302	0.552	1.986	2.05	4,860	5,470
270-25	1.9	6.0	F-9802	K004982	0.31	0.095	0.31	0.464	2.089	1.835	4,170	3,320
270-25	6.0	10.5	F-9803	K004983	0.28	0.141	0.64	0.431	1.865	1.835	3,150	2,970
270-25	10.5	15.4	F-9803	K004984	0.28	0.135	0.64	0.573	1.865	1.515	3,150	2,800
270-25	15.4	20.3	F-9804	K004985	0.048	0.144	0.55	0.611	1.489	1.56	3,510	4,230
270-25	20.3	25.1	F-9805	K004986	0.068	0.092	0.216	0.23	1.413	1.205	3,840	4,580
270-9	7.6	12.1	F-9806	K004987	0.073	0.134	0.234	0.563	0.762	1.695	2,230	5,750
270-9	12.1	17.0	F-9807	K004988	0.073	0.299	0.15	0.345	0.487	2.26	1,320	4,350
270-9	17.0	19.4	F-9808	K004989	0.034	0.015	0.116	0.038	0.339	0.034	1,350	345
Average					**0.132**	**0.144**	**0.348**	**0.412**	**1.671**	**1.595**	**3,656**	**3,885**

Note: *1 g/t = 1 ppm.*

FIGURE 6.2 COMPARISON OF DUPLICATE FIELD CHANNEL SAMPLES FROM 1986 AND 2012



6.3 HISTORICAL DRILLING

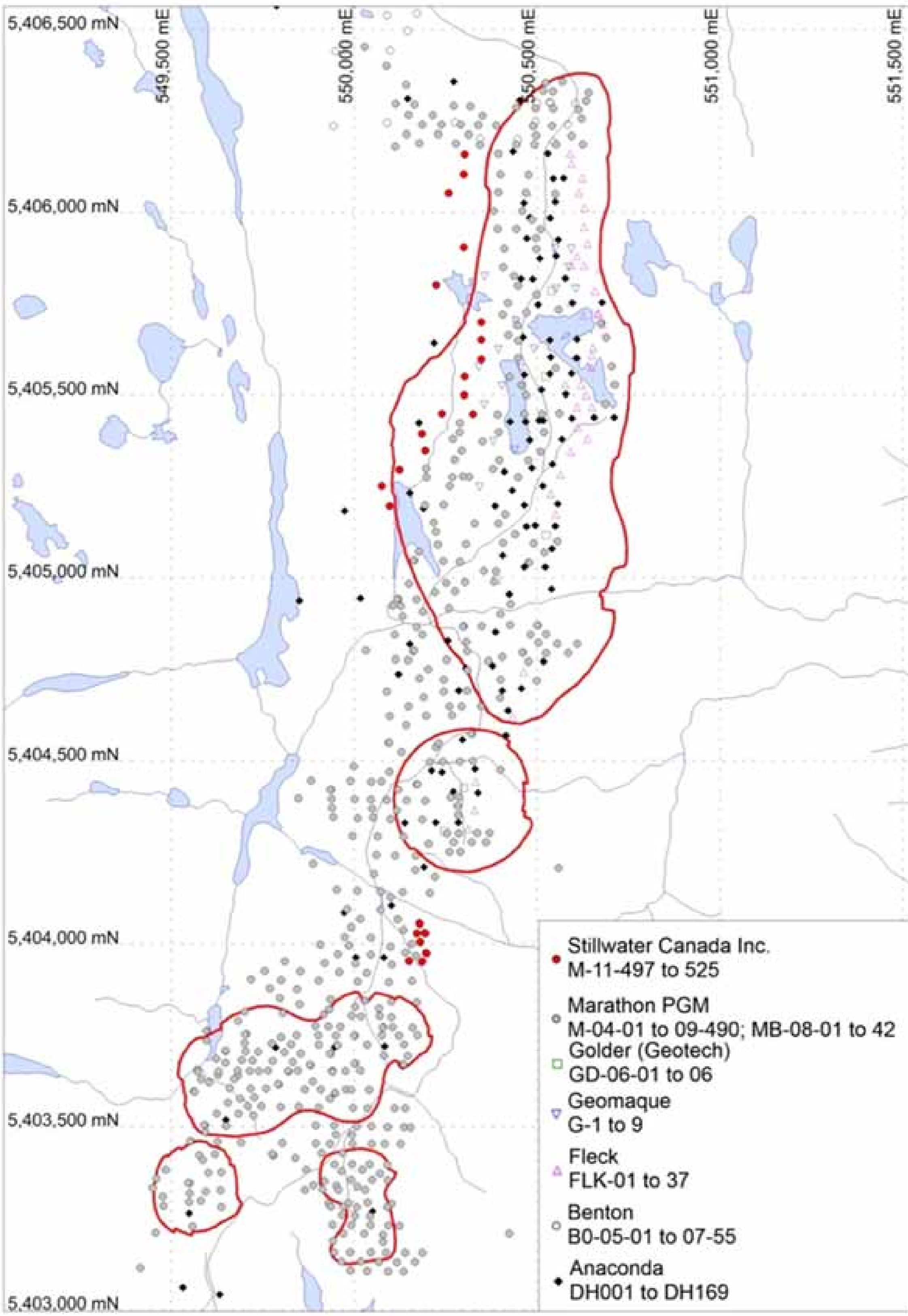
A summary of previous diamond drilling on the Marathon Project is listed below in Table 6.2. There is a current program being carried out by Gen Mining, however, no results have been publicly released as of the effective date of this Technical Report. All historical drill holes are plotted in UTM NAD 27 Zone 16N. Table 6.2 drill holes are shown in Figure 6.3.

TABLE 6.2
SUMMARY OF HISTORICAL DRILLING AND TRENCHING ON THE MARATHON PROPERTY 1964-2017

Company	Year	No. of Holes / Trenches	Total Length (m)
Drilling			
Anaconda	1964-1966	151	32,741.3
Fleck	1980s	37	3,627.2
Geomaque	2000	15	3,158.0
Marathon	2004	32	4,080.0
Marathon	2005	102	14,601.9
Marathon	2006	108	21,799.0
Marathon	2007	205	39,781.1
Benton	2005-2007	50	9,198.0
Marathon	2008	99	21,238.8
Marathon	2009	21	2,333.3
Stillwater Canada	2011	35	6,552.5
Stillwater Canada	2013	6	1,399.5
Stillwater Canada	2017	22	5925.0
Sub Total		883	166,435.6
Trenching			
Marathon Trenches	2004-2009	494	4,436.3
Sally	1991-2017	82	16,953.6
Sally Trenches	1991-2017	371	1,870.7
Geordie	1987-2010	61	9,647.2
Total		**1,891**	**199,343**

Roscoe Postle Associates Inc. (2004) stated that it was their understanding that all drill hole collars in the area of the Marathon Deposit have been surveyed, however, exploration holes outside of that area have not been surveyed. All drill hole collar co-ordinates use the Universal Transverse Mercator ("UTM") NAD 27 Zone 16 grid system in the Geomaque database. The Anaconda holes appear to have been surveyed for downhole dip only. The Fleck holes also appear to have been surveyed downhole but for dip only. The Geomaque holes were surveyed down-hole using a gyroscopic instrument and little hole-deviation was noted.

FIGURE 6.3 DIAMOND DRILL HOLE LOCATIONS, MARATHON PROJECT, ORGANIZED BY EXPLORATION COMPANIES



Source: *Stillwater Canada Inc. (2012)*

6.4 HISTORICAL GEOPHYSICAL SURVEYING

Several geophysical surveys have been conducted over the Marathon Project. These are summarized in Table 6.3.

TABLE 6.3
SUMMARY OF GEOPHYSICAL SURVEYS

Year	Survey Type
2005	IP/Resistivity & Magnetics by JVX
2007	Geophysical Survey Report: Insight Section Array Induced Polarization and Resistivity Surveys. February 2007 Insight Geophysics Inc.
2007	Geophysical Survey Report: Insight Section Array Induced Polarization and Resistivity Surveys May 2007 Insight Geophysics Inc.
2008	Heliborne AeroTEM System EM and Magnetic Survey Superior Block March 2008 by Aeroquest International
2011	Heliborne High Resolution Aeromagnetic and Spectrometric Survey June 2011 Geo Data Solutions GDS Inc.
2012	Gravity Survey of the Marathon PGM August 2012
2018	Seismic Survey

In 2005, induced polarization ("IP")/resistivity and magnetometer surveys were carried out over portions of the Marathon Property by JVX Limited. The survey results are presented in a report by JVX titled "IP/Resistivity and Magnetic Surveys Marathon PGM-Cu Project Marathon Area, Ontario". The Project involved approximately 14.7 km of IP/resistivity survey on a grid of east/west lines spaced on either 50 or 100 m centers. In addition, three more widely spaced lines were surveyed. The purpose of the survey was to delineate disseminated sulphide zones believed to contain copper and platinum group mineralization. A magnetometer survey was also carried out on the same lines that were surveyed by IP/Resistivity.

Observations concluded:

1. The Marathon Property, from an IP perspective, is divided along a north-south axis near the grid centre. East of this line the resistivity is generally higher than to the west probably reflecting a more felsic lithology. The resistivity on the west side of the Property is quite variable with north-south trending zones of low resistivity especially apparent in the southern part of the survey where these zones can be traced across adjacent lines.

2. The total magnetic intensity map is similar to the resistivity map with generally higher magnetic intensities recorded to the east and variable results with north-south trending magnetic lineations to the west. Magnetic dipole pairs are oriented east-west, consistent with near surface, linear north-south trending sources. The margins of the magnetic highs tend to be spatially associated with the resistivity lows.

3. The chargeability map reveals a clear zoning similar to that shown in the magnetic and resistivity maps. Chargeability is localized into a broad north-south band. Based on the survey results exploration targets were selected and recommendations made for drill testing.

Three-dimensional ("3-D") magnetic inversion modeling was performed on the Marathon Property by JVX Ltd., during the early part of 2005. The modeling was performed on merged aeromagnetic data covering the Project area. The underlying aeromagnetic data was derived from the data produced during "Operation Treasure Hunt" (Ontario Geological Survey, 2002) and from the Master Aeromagnetic Dataset for Ontario (Ontario Geological Survey, 1999). Small cell sizes (25 m cells) were used in an effort to provide better resolution of target geometry.

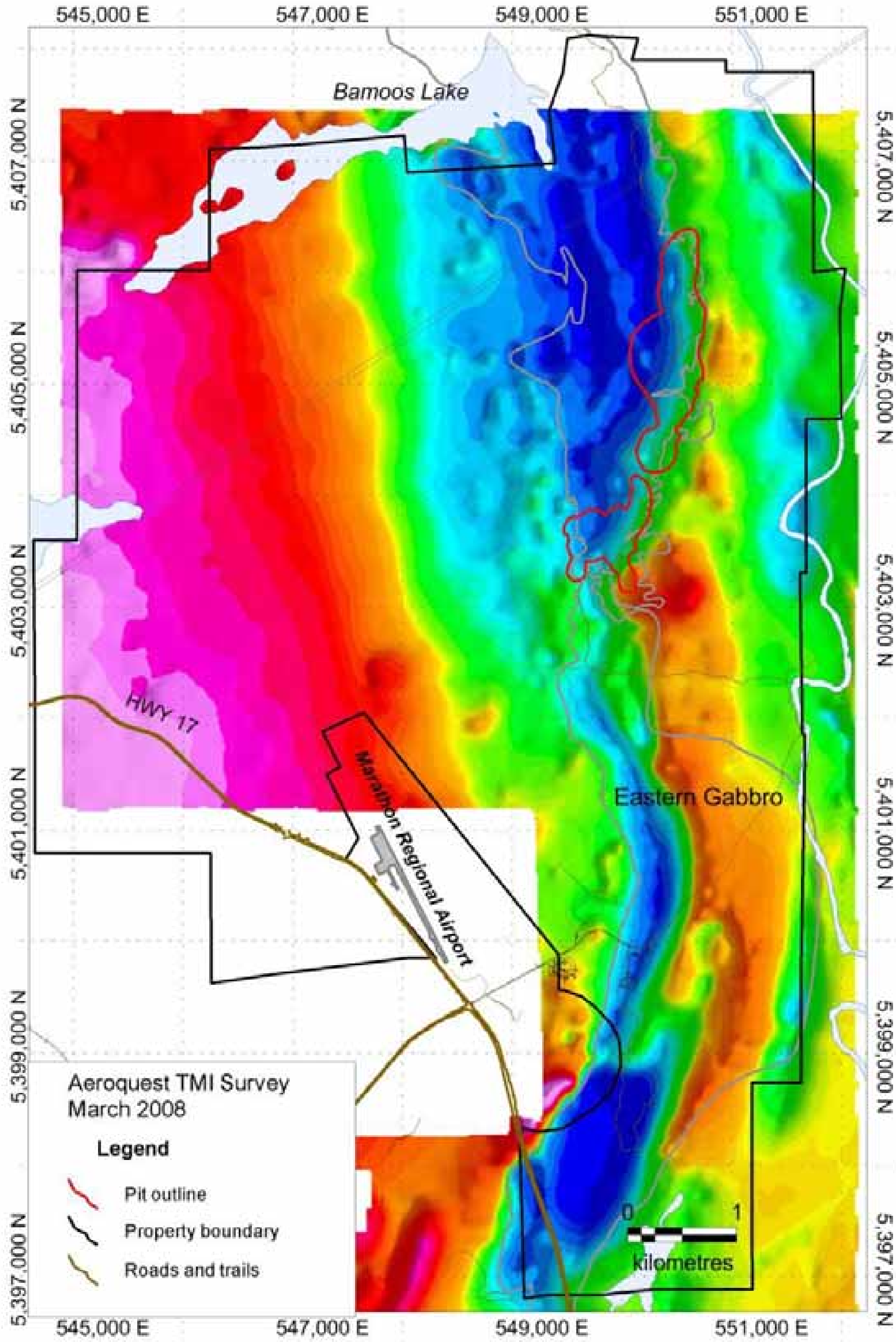
The PGM mineralization appears to be associated with a strong north - south positive magnetic high trend. This is in contrast to the majority of the Coldwell Complex units that produce a prominent magnetic low (as this intrusion occurs at a time of pole reversal). The main objective of the modeling was to determine the geometry of the source producing the magnetic high trend with the possibility of outlining any embayment that could be favorable to hosting wider zones of the targeted mineralization.

A time domain induced polarization/resistivity survey was conducted by Insight Geophysics Inc. on the Marathon Project (Figure 6.4). The purpose of the survey was to acquire high density apparent resistivity and chargeability measurements from near surface to depths up to 500 m. The survey was conducted from January 21, 2007 through to February 21, 2007 and consisted of seven lines orientated east-west and covered a total of 6,725 m.

A second survey was conducted by Insight between May 4th and May 20th to extend the previous survey to the north with an additional east-west line (5405450 N) and to join all the surveys with a north-south line. Two lines totaling 4,000 m were surveyed.

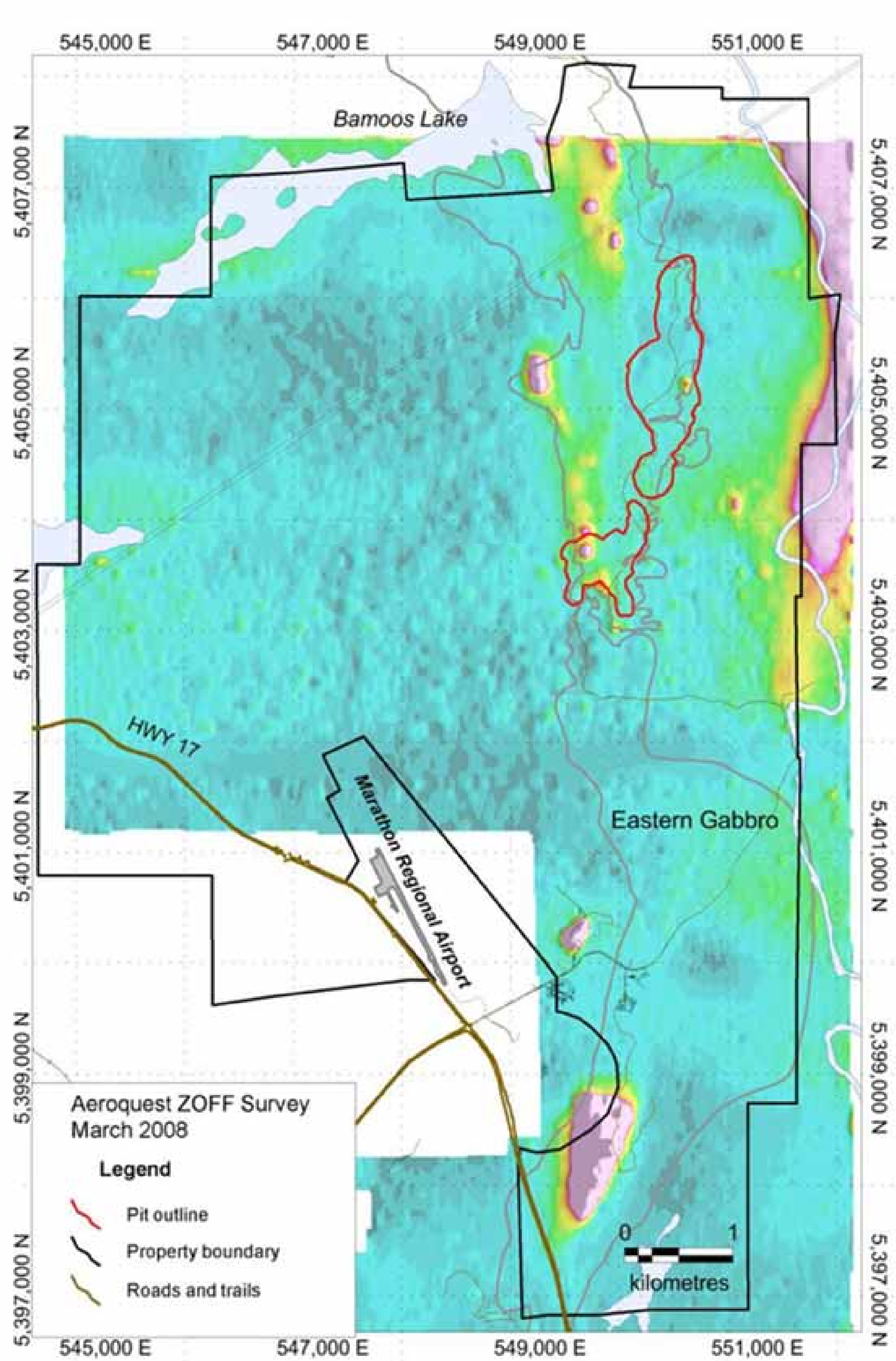
A high resolution, helicopter-borne aeromagnetic (total magnetic field) and AeroTEM electromagnetic survey was conducted by Aeroquest International Inc. between December 20, 2007 and January 12, 2008 (Figure 6.5). Traverses were spaced 100 metres with an orientation of 090° and control lines were flown perpendicular to the survey lines with a spacing of 850 m. A total of 844 line-km was flown for the survey.

FIGURE 6.4 MAGNETOMETER SURVEY RESULTS OVER THE MARATHON PROJECT



Source: *Stillwater Canada Inc. (2014)*

FIGURE 6.5 AEROTEM SURVEY RESULTS OVER THE MARATHON PROJECT



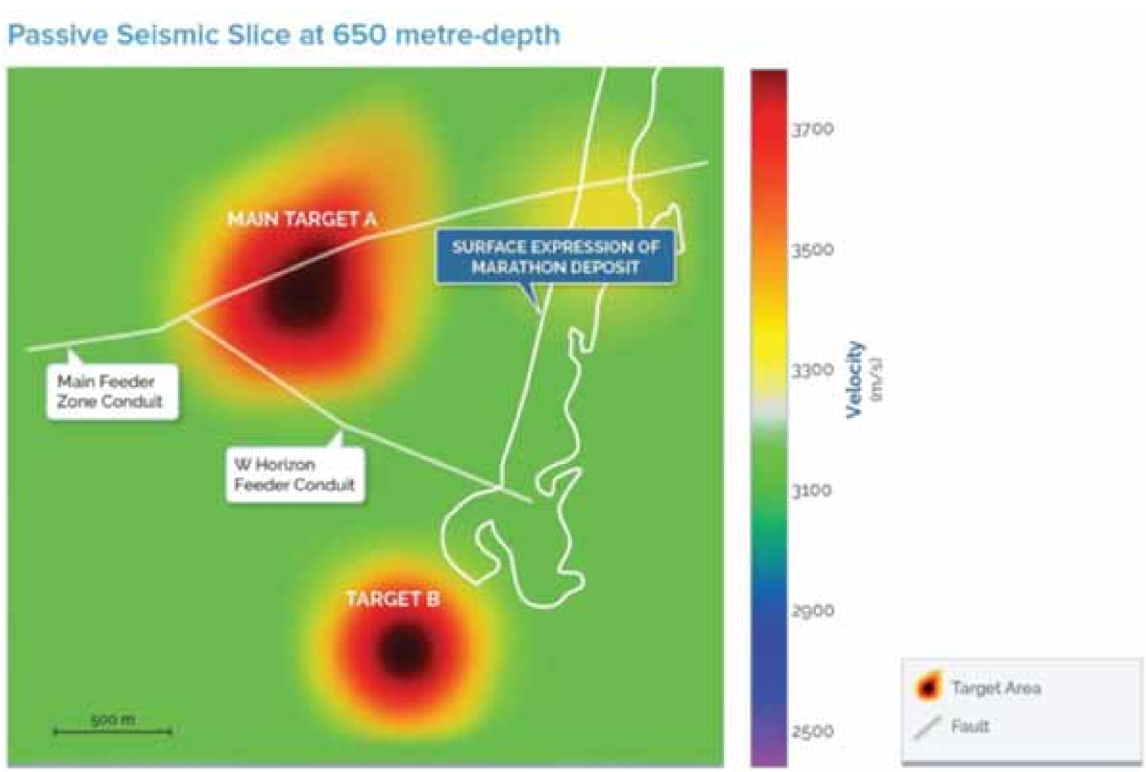
Source: *Stillwater Canada Inc. (2017)*

A high resolution, helicopter-borne aeromagnetic (total magnetic field) and spectrometric (gamma-ray spectrometric) survey was conducted by Geo Data Solutions GDS Inc. ("GDS"). The survey was conducted between June 3rd and June 9th, 2011. Traverses were spaced 100 m with an orientation of N0°E and control-lines were spaced 1,000 m with an orientation of N90°E. In total 2,505 km were flown for the survey. The survey was conducted in collaboration with Rare Earth Metals Inc. and covers the Coldwell Alkaline Complex. Data is useful in exploration over the Bermuda Property, however, over the Marathon Project, the total magnetic data duplicated data collected previously by Aeroquest.

In 2018, a seismic survey was conducted over a portion of the Marathon Property covering known feeder zones. Past drilling had identified two of the likely conduits for the magma that originally formed the Main Zone and W Horizon Deposits which contain the majority of the historic Mineral Resources on the Marathon Property.

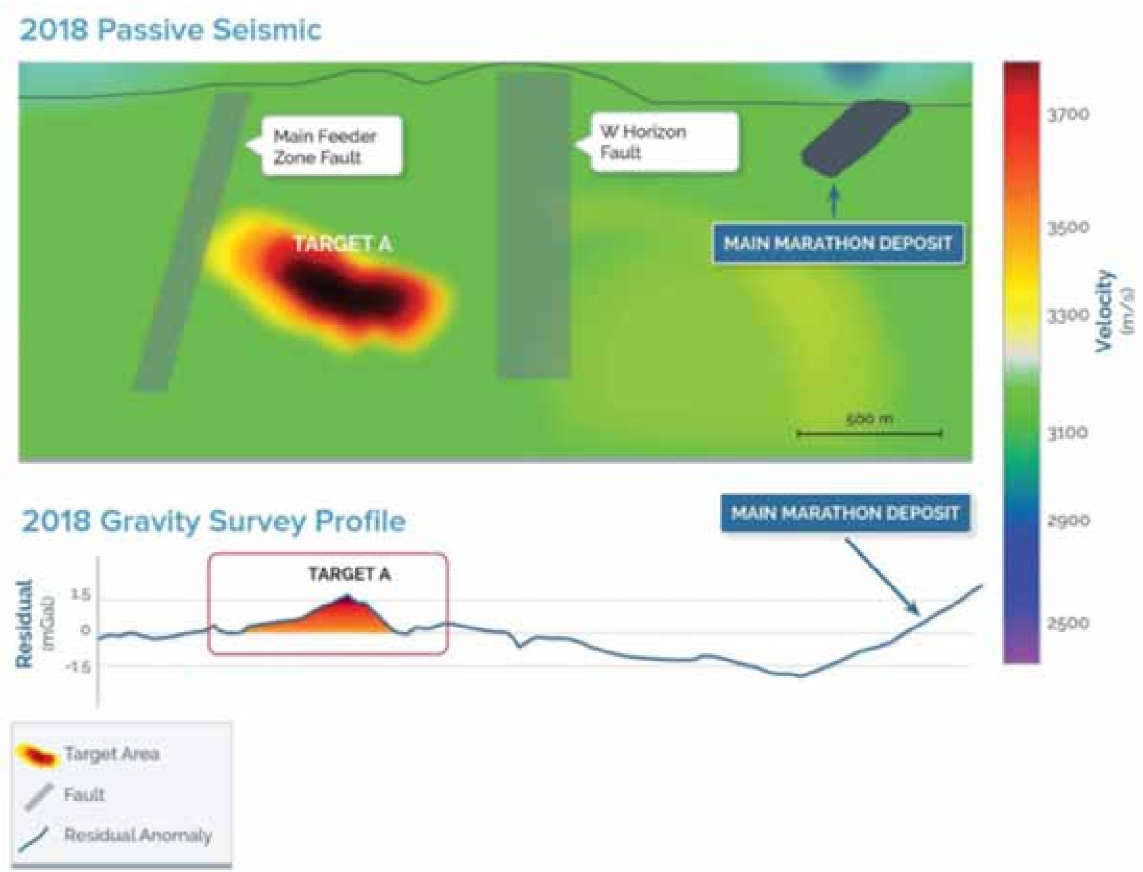
The survey outlined two potential targets at depth along the feeder zones. The largest of these –- is located about one km west of the Main Zone proximal to the Main Feeder Zone Fault, and measures approximately 800 m by 400 m horizontally, and is shown at about 650 m in depth with the top of the target at approximately 500 m below surface The accompanying idealized section view is presented in Figures 6.6 and 6.7. Of particular interest is the positive residual gravity feature coincident with this target which will be drill tested as part of the 2019 drill program.

FIGURE 6.6 SEISMIC DATA REVEALING POTENTIAL FEEDER ZONES



Source: Generation Mining Limited Press Release (2019)

FIGURE 6.7 SEISMIC DATA PROFILE ON POTENTIAL FEEDER ZONES



Source: Generation Mining Limited Press Release (2019)

6.5 GEOLOGICAL MAPPING

As part of the 2005 summer exploration program, a detailed geological survey was carried out over the same grid that was established for the geophysical surveying. Approximately 15.0 line-km of mapping and prospecting was conducted. The results of the geological mapping program were incorporated into the existing geological database.

6.6 HISTORICAL MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

Historical mineral resource estimates as summarized below in Table 6.4. The estimates are difficult to compare because some are with, and some are without cut-off grades and they are at different metal price and recovery assumptions. They are not necessarily NI 43-101 compliant.

TABLE 6.4 HISTORICAL MINERAL RESOURCE ESTIMATES - MARATHON PROJECT					
Estimator / Date	**Tonnes (M)**	**Pd (g/t)**	**Pt (g/t)**	**Cu (%)**	**Cut-off Value**
Anaconda, 1984	31.3	1.34 combined		0.47	N/A
Kilborn, 1986	42.6	1.51	0.41	0.46	N/A
Kilborn, 1987	36.9	1.10	0.27	0.38	$12/t NSR
Geostat, 1988	29.4	1.02	0.26	0.36	$16/t NSR
RPA, 2004	62.5**	0.79	0.20	0.30	0.15% Cu
Micon 2009	114.8**	0.78	0.23	0.24	$10.50/t NSR

** *Measured + Indicated.*

6.6.1 Geomaque 2001 Mineral Resource Estimate

Walford and Hendry (2001) estimated Mineral Resources for the Marathon Pd Project at a series of Cu cut-off grades, most of which are listed in Table 6.5.

Subsequent to the April 2001 Mineral Resource Estimate, Geomaque added its drill holes to the database and modified the geological interpretation by defining a high-grade zone (>0.7 Pd+Pt+Au) within the previously defined broader mineralized zone. Instead of kriging, Geomaque used inverse distance cubed to interpolate block grades within each zone using only drill hole composites within the respective zones. Geomaque used the same search strategy and resource classification parameters as for the April 2001 estimate. The September 2001 Mineral Resource Estimate, as shown in Table 6.6 was reported in a Geomaque press release dated October 16, 2001 at a cut-off grade of 0.8 g/t Pd.

Table 6.5 **Marathon Project, Geomaque April 2001 Mineral Resource Estimate by Cu Cut-off**												
Cut-off	**Measured**				**Indicated**				**Inferred**			
Cu (%)	**Tonnes (M)**	**Cu (%)**	**Pt (g/t)**	**Pd (g/t)**	**Tonnes (M)**	**Cu (%)**	**Pt (g/t)**	**Pd (g/t)**	**Tonnes (M)**	**Cu (%)**	**Pt (g/t)**	**Pd (g/t)**
0.10%	22.2	0.29	0.20	0.76	40.3	0.27	0.19	0.697	43.8	0.25	0.15	0.52
0.20%	17.1	0.33	0.22	0.88	9.1	0.32	0.21	0.831	25.6	0.32	0.17	0.68
0.30%	9.5	0.38	0.25	1.03	15.2	0.38	0.239	0.97	12.7	0.38	0.21	0.85

Source: *Geomaque 2001*

Table 6.6 **Marathon Project Mineral Resource Estimate,** **Geomaque September 2001**					
Classification	**Tonnes (M)**	**Pd (g/t)**	**Pt (g/t)**	**Au (g/t)**	**Cu (%)**
Measured	8.1	1.40	0.37	0.12	0.41%
Indicated	13.1	1.28	0.33	0.11	0.39%
Measured + Indicated	21.3	1.32	0.34	0.12	0.40%
Inferred	8.2	1.24	0.32	0.12	0.39%
Mineral Resource Estimate reported at 0.8 g/t Pd Cut-off grade					

Source: *Geomaque 2001*

6.6.2 RPA 2004 Mineral Resource Estimate

RPA prepared a Mineral Resource Estimate of the Marathon Deposit using the same drill hole database that Geomaque used for its 2001 Mineral Resource Estimates.

RPA's Mineral Resource Estimate used a geostatistical approach, whereby grades were interpolated into a block model by ordinary kriging. Variography was used to develop the kriging parameters.

The RPA Mineral Resource Estimate was classified into Measured, Indicated and Inferred classifications based on drill hole spacing relative to the variogram ranges, and apparent continuity of the mineralized lenses. In general, Measured Mineral Resources were near surface where drill hole and trench spacing is in the order of 25 m. The RPA Mineral Resource Estimate is presented in Table 6.7.

TABLE 6.7
MARATHON PROJECT, RPA 2004 MINERAL RESOURCE ESTIMATE

Category	Tonnes (M)	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)
Measured	11.1	0.91	0.22	0.08	0.29%
Indicated	51.4	0.76	0.20	0.07	0.31%
Measured + Indicated	62.5	0.79	0.20	0.07	0.30%
Inferred	10.3	0.53	0.19	0.06	0.22%

Mineral Resource Estimate reported at 0.15% Cu cut-off grade

6.6.3 Micon 2010 Updated Mineral Resource Estimate

The revised Micon 2009 Mineral Resource Estimate for the Marathon Property was undertaken by Sam Shoemaker, MAusIMM, and Charley Murahwi, P.Geo., of Micon with the assistance of David Good, Ph.D., P.Geo., V.P. Exploration of Marathon PGM Corp.

A review of the basis for the previous Mineral Resource Estimate (geologic cross-sections) was completed by Micon using both the previously used drill holes along with the additional 21 new drill holes (effective date December 16, 2009). The new in-fill drilling required that an updated cross-sectional interpretation be completed before an updated Mineral Resource Estimate could be established. In order to better represent the geology of the Marathon Deposit, a new block model was constructed which used an unfolding technique on the sample search ellipsoid. This approach allowed a search ellipsoid to better reflect the actual trend of the mineralization. In addition, smaller block sizes were used in the mineralized zones to further help delineate the overall potential Mineral Resource.

The diluted block model was exported to Whittle where the model was prepared for optimization. A number of pit optimization runs were completed along with extensive sensitivity analysis. Table 6.8 shows the estimated pit shell Mineral Resource contained within the selected optimized pit shell.

TABLE 6.8
MICON 2009 PIT SHELL MINERAL RESOURCE ESTIMATE (DILUTED BLOCK MODEL)

Total Resource (Lower and Higher Grade) above $10.50/t NSR Cut-off

Category	**Pit Shell 46 Mineral Resource**						**Contained Metal**				
	Tonnes millions	**Pd (g/t)**	**Pt (g/t)**	**Au (g/t)**	**Cu (%)**	**Ag (g/t)**	**Pd (oz 000)**	**Pt (oz 000)**	**Au (oz 000)**	**Cu (lb million)**	**Ag (oz 000)**
Measured	94.3	0.846	0.243	0.088	0.262	1.599	2,564	736	266	545	4,847
Indicated	20.5	0.451	0.160	0.062	0.140	1.421	386	133	50	73	976
Measured + Indicated	**114.8**	**0.775**	**0.228**	**0.083**	**0.241**	**1.567**	**2,950**	**869**	**316**	**618**	**5,823**
Inferred	6.2	0.306	0.104	0.047	0.151	1.459	61	21	9	21	290

The Mineral Resource Estimate presented above is the subject of the Micon Feasibility Study discussed in this Technical Report.

6.6.4 Micon 2010 Mineral Reserve Estimate

The Mineral Resource model used for the pit optimization, pit design, and production scheduling is the diluted block model developed and updated by Micon in 2009 and used to estimate the Mineral Resource. Only material in the block model with the Mineral Resource classification of 'Measured' or 'Indicated' were considered as potential process plant feed. In addition to the estimated grade values for Cu, Pd, Pt, Au, Ag, and Rh contained within the diluted block model, other variables were calculated or input into the diluted block model. These included the Net Smelter Return ("NSR"), geotechnical parameters, block economic net value, haulage simulation results, block material type, and Whittle rock types.

Pit optimization was completed using a Lerchs-Grossmann algorithm ("LG") on the block model. Gemcom's LG software, the Whittle optimizer was selected. Once a pit optimization was completed, the selected pit shell was used as a design basis for the open pit. For the Marathon Deposit, three major mining pit areas were designed; the North pit, South pit, and Malachite pit. For each pit a production schedule was prepared, followed by equipment selection and estimation of operating costs, capital costs and personnel requirements.

A Mineral Reserves was estimated for the North, South and Malachite pits from the diluted block model, pit optimization and pit design. The Mineral Reserve is summarized in Table 6.9.

TABLE 6.9
MICON 2010 MINERAL RESERVE FOR THE MARATHON DEPOSIT

Classification	Tonnes	Pd (g/t)	Pt (g/t)	Au (g/t)	Cu (%)	Ag (g/t)	Cu (Mlb)	Pd (oz 000)	Pt (oz 000)	Au (oz 000)	Ag (oz 000)
Proven	76,461,000	0.910	0.254	0.090	0.268	1.464	452	2,237	625	222	3,600
Probable	14,986,000	0.435	0.147	0.060	0.138	1.318	46	209	71	29	635
Total	91,447,000	0.832	0.237	0.085	0.247	1.440	497	2,447	696	251	4,235

6.7 MINERAL PROCESSING AND METALLURGICAL TESTWORK

Metallurgical testwork results and flowsheet design for the Marathon project originate from a series of bench scale metallurgical at several testing laboratories over several years. Tests included crushing, grinding, batch, cycle and mini pilot scale froth flotation testing.

6.7.1 Mineralogy and Influence on Metallurgy

A limited number of general and PGM-specific mineralogical investigations were performed on representative samples of the Marathon PGM-Cu mineralization.

In 2004, SGS-Lakefield conducted petrographic and image analyses that targeted the Marathon PGM and copper mineralization. Xstrata Process Research ("XPS") conducted QEMSCAN modal analyses of a composite sample in 2008. Lakehead University's Mineralogy and Experimental Laboratory ("LUMINX") studied the distribution of the PGM's in 2006 and 2007.

6.7.2 SGS Lakefield Mineralogical Studies 2004

SGS Lakefield identified that the copper mineralization was bimodal with most of the copper as coarse chalcopyrite with the balance as fine chalcopyrite locked other sulphides and some silicates. Because chalcopyrite is a relatively soft mineral, early recovery of coarse, liberated copper in the flotation circuit is suggested.

6.7.3 Xstrata Process Development (XPS) 2008

The 2008 XPS mineralogical study realized the following:

- The chalcopyrite is 77% fully liberated at a P_{80} size of 110 µm;
- The balance of the chalcopyrite is locked within particles of size range of 11–47 µm;
- The principal sulphide, pyrrhotite is about 90% liberated at 110 µm;
- Several fine-grained PGM minerals were identified, including froodite ($PdBi_2$) and sperrylite ($PtAs_2$); and
- The MgO-containing minerals are principally clinopyroxene and actinolite.

The XPS study suggested that flotation of copper (chalcopyrite) occurs at a coarse size followed by regrinding of copper flotation tails for the flotation recovery of the balance of the copper and the PGM's. The MgO minerals should be susceptible to chemical depression in the flotation stages.

6.7.4 LUMINX PGM Study - Lakehead University Mineralogical and Experimental Laboratory 2008

The LUMINX mineralogical study results indicated that the Marathon PGM minerals are <30 µm in size, with 80% < 10 µm. Also, up to half of these minerals occur at the sulphide-silicate mineral boundary. Between 12 to 20% of the PGM's were found to be locked in sulphides or hematite. Less than 10% occur as liberated PGM particles or PGM aggregates. Up to half of the PGMs were found to be associated with silicates, mainly chlorite and serpentine.

These general findings support an early flotation separation of most of the copper at a relatively coarse particle size followed by precise fine grinding and a select flotation regime for PGM's. The association of up to half of the PGM's with MgO-rich silicates could represent a concentrate grade challenge.

6.7.5 Resource Development Inc. ("RDi")

Bulk mineralogical studies were performed for RDi in Colorado on a composite representing the majority of the Marathon mineralized deposit. It was determined that:

- The major host rock minerals are plagioclase (60%), olivine (24%), clinopyroxene (8%) and magnetite/ilmenite (4%);
- The dominant sulfide minerals in the sample were identified as pyrrhotite and chalcopyrite;
- Pentlandite and mackinawite are present in trace amounts; and
- Platinum group minerals are too rare and small to be identified by light microscopy techniques.

These simple observations suggest that magnetic separation and select separation of pyrrhotite could improve the Cu-PGM concentrate grade.

6.8 METALLURGICAL TESTWORK

Metallurgical testwork had been conducted for many years on the Marathon Deposit from the early 1960s up to 2013. The focus of the testwork has consistently been the development of a robust process to economically produce Cu and Cu-PGM concentrates. A principal result of various bench and pilot scale testwork campaigns was the selection of a "split flowsheet" for the development of the Marathon Cu/PGM mineralized material.

6.8.1 Early Metallurgical Test Results

Between 1965 and 1967, Anaconda conducted several pilot scale beneficiation tests on high-grade Cu (0.6 to 0.8%) composites. The reported Cu recoveries were high at 91 to 94% at a concentrate grade ranging from 10% (low) to 27% (normal); Pd recoveries ranged from 72% to 86%.

In 1985, Fleck Resources commissioned Lakefield Research to conduct bench and pilot scale tests. The key findings of these tests on high-grade Cu composites indicated that:

- Regrinding the rougher concentrates increases concentrate grade;
- High copper recovery can be realized - 89%, 80%, and 71% respectively for Cu, Pd and Pt at a smelter acceptable Cu grade; and
- Addition of cellulose improves the concentrate grades.

6.8.2 2004-2010 Metallurgical Tests

6.8.2.1 SGS – Lakefield 2004 -2005

Locked cycle tests ("LCT") were performed, and the concept of a split flowsheet was introduced. The rationale for the split was the observation that a bi-modal distribution of at least one valuable mineral existed. Most of the chalcopyrite (the main copper mineral) was found to be relatively coarse which, being softer than the silicates, tends to grind finer than the average size distribution. The secondary occurrence of chalcopyrite is as very fine "blebs", locked with other sulphides and silicates. Liberation of this fine mineralization would require fine regrinding. Lakefield also observed that the coarse chalcopyrite responds rapidly to flotation, while fine minerals are slow in responding to flotation.

6.8.2.2 SGS – Lakefield 2007-2008

An extensive series of batch and locked cycle flotation tests were performed at Lakefield on six composite samples. The main focus of the test program was the optimization of the flotation process using batch rougher and cleaner flotation tests and to simulate this process, followed by a series of "locked cycle" flotation tests. Batch variability flotation tests related to mineralization type and grade were included to examine the sensitivity of the flowsheet to these particular variabilities. Other variabilities that were investigated involved:

- The effects of the primary grind size;
- Collector selection, dosage and addition points. Earlier tests had shown the presence of unstable and collapsing froth, unsuitable conditions for an operating plant. Reagent additions need to be sparingly added at critical locations; and
- Regrinding of 1st rougher tails and both Cu and Cu-PGM rougher concentrates.

Based on the LCT results, SGS-Lakefield estimated the metal recoveries for Marathon PGM-Cu mineralization, assuming metal grades approximating the mineral resource estimate at that time of testing and these are listed in Table 6.10.

TABLE 6.10
ESTIMATED RECOVERIES BASED ON LAKEFIELD 2008 LCT'S

Metal	Unit	Feed Grade	Concentrate Grade	Recovery (%)
Copper	%	0.28	22.0	91.0
Gold	g/t	0.11	6.53	73.0
Platinum	g/t	0.23	13.0	63.0
Palladium	g/t	0.87	57.0	77.0
Rhodium*	g/t	0.02		46.0
Silver*	g/t	1.60		77.0
*estimated from main composite sample grade				

Note: *all recovery values are in %.*

6.9 FOLLOW-UP METALLURGICAL TESTING

The follow-up metallurgical testwork targeted refinements to a split circuit flowsheet, i.e., the production of Cu and Cu-PGM concentrates in the same facility. The importance and scale of regrinding of concentrates in advance of repeated cleaner flotation stages as well as the effects reagent recirculation in closed circuit cleaner flotation were important emphases.

6.9.1 XPS 2008- 2009 Bench LCT's and Mini Pilot Plant Tests

A three-tonne sample assaying averaging 0.031% Ni, 0.322% Cu, 1.07% S, 1.149 g/t PGM (total Pt, Pd, Au, Rh), 1 g/t Ag, and 6.73% MgO was subject to a series of bench scale LCT's and a 100-hour mini pilot plant test. The LCT results are summarized in Table 6.11, the pilot plant results are shown in Table 6.12. The results are similar and represent good recoveries of Cu and PGM's. XPS reported froth and circuit instability that could be reduced by operating cleaners in open circuit. However, this circuit configuration could be expected to result in lower recoveries.

TABLE 6.11
XPS 2009 LCT TEST RESULTS

Metal	Unit	Feed Grade	Concentrate Grade	Recovery (%)
Copper	%	0.322	21.65	90.49
Gold	g/t	1.149 PGM	6.00	83.07
Platinum	g/t		15.46	77.33
Palladium	g/t		56.76	80.99
Rhodium	g/t			
Silver	g/t	1.0		

Note: *all recovery values are in %.*

TABLE 6.12
XPS 2009 MINI PILOT PLANT TEST RESULTS

Metal	Unit	Feed Grade	Cu Conc Grade	PGM Concentrate Grade	Combined Grade	Total Recovery (%)
Copper	%	0.32	22.94	15.57	18.75	92.5
Gold	g/t	0.07	3.51	3.43	3.47	77.3
Platinum	g/t	0.19	8.3	9.0	8.7	71.0
Palladium	g/t	0.84	42.6	41.9	42.2	80.4
Rhodium	g/t	0.02	0.5	0.69	0.61	50.3
Silver	g/t	1.33	65.9	64.6	65.1	77.9
MgO	%	6.4	3.2	4.8	4.1	1.0
Mass Pull	**%**	**100**	**0.69**	**0.91**	**1.59**	

Note: *all recovery values are in %.*

XPS conducted supplementary tests confirming the marginally beneficial effects of cleaner concentrate regrinding to 30 µm. Additional grinding to 15 µm was not shown to be beneficial.

6.9.2 XPS 2010 Bench LCT's

Another set of LCT's was performed at XPS in 2010, using the same split flotation flowsheet previously used by XPS. An increase in the number of cycles from six to eight appeared to result in better froth stability.

As shown in Table 6.13 the concentrate grades ranged from 14.5% Cu to 21.9% Cu at 84.5% to 92.9% Cu recovery (**average 89.71%**). Pd recoveries ranged from 79.9% to 84.0% (**average 82.93%). Average Pt and Au recoveries were 74.53% and 73.16% respectively**. Silver ranged from 60.8% to 73% recovery with an average of 71.5%.

TABLE 6.13
LCT COPPER AND PGM RECOVERIES VS. FEED GRADE

Composite No.	Cu (%)	Au (g/t) (%)*	Pt (g/t) (%)*	Pd (g/t) (%)*	Ag (g/t) (%)*	Rh (g/t) (%)*
Composite 1						
Feed Grade (% or g/t)	0.11	0.04	0.13	0.41	0.54	0.008
Concentrate Grade (% or g/t)	15.24	5.19	13.22	44.01	58.18	0.74
Recovery Mean* (%)	84.51	59.30	68.18	83.52	65.21	70.59
Composite 2						
Feed Grade (% or g/t)	0.17	0.05	0.11	0.46	0.87	0.010
Concentrate Grade (% or g/t)	14.51	4.09	9.28	32.70	48.25	0.48
Recovery Mean* (%)	91.15	73.15	78.81	84.00	60.77	70.04
Composite 3						
Feed Grade (% or g/t)	0.25	0.08	0.29	0.86	1.20	0.020
Concentrate Grade (% or g/t)	18.62	5.46	12.12	49.80	57.83	0.60
Recovery Mean* (%)	90.69	81.54	75.29	79.95	77.47	62.40
Composite 4						
Feed Grade (% or g/t)	0.30	0.10	0.23	0.84	1.47	0.027
Concentrate Grade (% or g/t)	19.10	5.38	12.30	50.59	63.46	0.88
Recovery Mean* (%)	89.29	78.33	75.09	82.71	71.04	69.83
Composite 5						
Feed Grade (% or g/t)	0.39	0.11	0.25	0.95	1.80	0.024
Concentrate Grade (% or g/t)	21.94	5.80	13.04	55.16	68.94	0.66
Recovery Mean* (%)	92.91	73.46	75.28	84.47	83.37	61.60
Blend 1/5						
Feed Grade (% or g/t)	0.25	0.08	0.19	0.68	1.17	0.016
Concentrate Grade (% or g/t)	17.89	4.98	11.83	46.37	60.43	0.64
Mathematical Grade (% or g/t)	18.59	5.49	13.13	49.58	63.56	0.70
Recovery Mean* (%)	91.24	71.33	74.66	81.59	72.63	56.16

Table 6.13 LCT Copper and PGM Recoveries Vs. Feed Grade						
Composite No.	**Cu (%)**	**Au (g/t) (%)***	**Pt (g/t) (%)***	**Pd (g/t) (%)***	**Ag (g/t) (%)***	**Rh (g/t) (%)***
Mathematical Mean Recovery* (%)	88.71	66.38	71.73	84.00	74.29	66.10
Blend 2/4						
Feed Grade (% or g/t)	0.24	0.08	0.17	0.65	1.17	0.019
Concentrate Grade (% or g/t)	18.39	5.52	11.64	45.14	62.38	0.66
Mathematical Grade (% or g/t)	16.81	4.74	10.79	41.64	55.86	0.68
Recovery Mean* (%)	88.63	83.61	78.59	82.01	69.11	72.15
Mathematical Mean Recovery* (%)	90.22	75.74	76.95	83.36	65.91	69.94

***** *all recovery mean values are in %.*
***Note**: all Cu values are in %.*
***Source:** NORDMIN Marathon PGM-Cu internal Feasibility Study (2014)*

Two additional LCT's were performed on composite blends as shown in Table 6.14.

Table 6.14 XPS 2010 LCT's on Blends							
Composite Blend	**Item**	**Cu (%)**	**Au (g/t) (%)***	**Pt (g/t) (%)***	**Pd (g/t) (%)***	**Ag (g/t) (%)***	**Rh (g/t) (%)***
1/5	Feed (% or g/t)	0.24	0.08	0.19	0.68	1.17	0.016
	Conc (% or g/t)	17.9	4.98	11.8	46.4	60.4	0.64
	Recovery (%)	91.2	71.3	74.7	81.6	72.6	56.2
2/4	Feed (% or g/t)	0.24	0.08	0.17	0.65	1.17	0.019
	Conc (% or g/t)	18.4	5.52	11.6	45.1	62.4	0.66
	Recovery (%)	88.6	83.6	78.6	82.0	69.1	72.1
Average	**Recovery** (%)	**89.9**	**77.5**	**76.7**	**81.8**	**70.9**	**64.1**

***** *all recovery mean values are in %.*
***Note**: all Cu values are in %.*

6.10 RECENT METALLURGICAL TESTWORK RESULTS

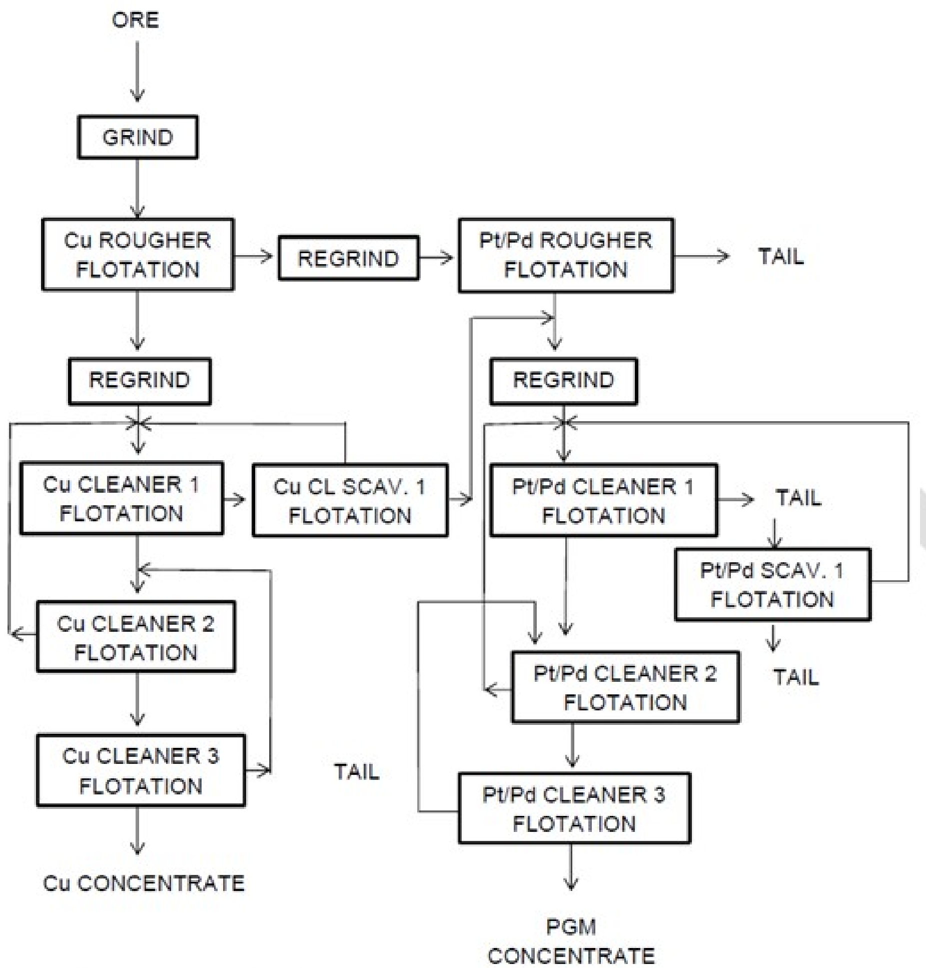
6.10.1 Resource Development Inc. (RDi) Testwork – 2012

Five composite mineralized samples were provided to RDi by Stillwater Canada in 2012 for a variety of metallurgical studies to refine the split flowsheet design, including: sample characterization; Bond ball mill and abrasion indices; grinding studies; and open-circuit and locked-cycle flotation tests to set target retention times, reagent types and reagent dosage rates.

RDI concluded a range of LCT testwork on the one composite representing 80% of the mineralized resource. The LCT's were patterned after the modified split flowsheet shown in Figure 6.8.

The results of the RDi's LCT's are summarized in Table 6.15. A higher proportion of metals reported to the copper concentrate and grade was lower than previously reported by XPS in LCT and mini pilot scale tests. The combined concentrate was relatively low in copper content.

FIGURE 6.8 RDI MODIFIED SPLIT FLOWSHEET



Source: NORDMIN Marathon PGM-Cu Internal Feasibility Study, Draft Report (2014)

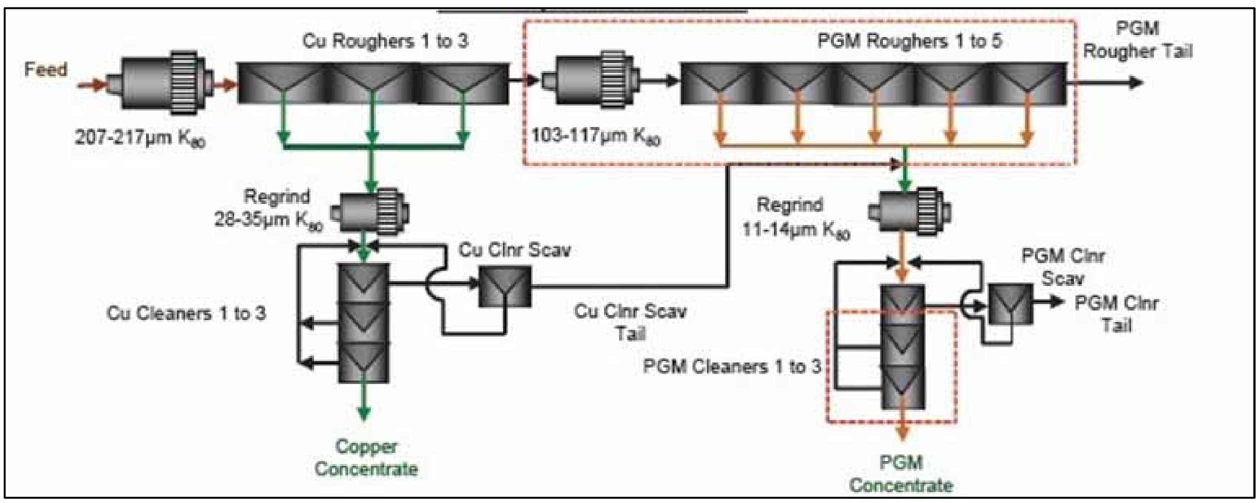
TABLE 6.15 RDi LOCKED CYCLE TEST ON MAIN COMPOSITE						
Metal	**Unit**	**Feed Grade**	**Cu Conc Grade**	**PGM Concentrate Grade**	**Combined Grade**	**Total Recovery (%)**
Copper	%	0.31	19.1	4.93	15.8	92.5
Gold	g/t	0.16	4.67	2.87	4.25	77.3
Platinum	g/t	0.25	12.1	6.28	10.7	71.0
Palladium	g/t	0.81	42.6	22.2	36.5	80.4
Mass Pull	**%**	**100**	**1.3**	**0.4**	**1.7**	

Note: *all recovery values are in %.*

6.10.2 ALS LCT and Mini Pilot Scale Tests 2013-2014

Testwork was continued at ALS Metallurgical Laboratories in Kamloops, BC on the same composite samples that were tested at RDi. The flowsheet simulated in LCT and pilot scale tests is similar to that used at RDi and is illustrated in Figure 6.9.

FIGURE 6.9 ALS KAMLOOPS TEST CIRCUIT



Source: *NORDMIN Marathon PGM-Cu Internal Feasibility Study, Draft Report (2014)*

In addition to confirming the flowsheet, a sufficient quality of concentrate was needed for smelter feed evaluation. A summary of the ALS tests is shown in Table 6.16. The four-day pilot test produced significantly poorly quality concentrate and generally lower recovery than the bench scale LCT.

TABLE 6.16 ALS LOCKED CYCLE AND PILOT PLANT TEST RESULTS						
Metal	**Unit**	**Feed Grade**	**LCT Combined Conc. Grade**	**LCT Recovery (%)**	**Average Pilot Test Conc. Grade**	**Pilot Plant Recovery (%)**
Copper	%	0.195	19.6	93.5	12.4	91.3
Gold	g/t	0.076	4.67	79.7	3.1	78.2
Platinum	g/t	0.171	12.1	51.4	6.4	67.9
Palladium	g/t	0.555	42.6	80.7	26.1	75.2
Mass Pull	**%**	**100**		**0.9**		**1.51**

Note: *all recovery values are in %.*

6.11 ADDITIONAL METALLURGICAL TESTS

6.11.1 Grinding Testwork

SGS-Lakefield conducted Bond work index, drop weight and abrasion tests. The selected rock core represented seven Marathon Cu-PGM lithologies. The rock was assessed as slightly tougher and more abrasive than average rock. From the test data and using relevant CEET2 and JKSimMet software SABC (semi-autogenous mill/ball mill/crusher) equipment size and power requirements were determined for a 22,000 tpd plant. Regrind mill sizing (3 units, Figure 6.9) was apparently not addressed.

6.11.2 High Pressure Grinding Roll ("HPGR")

HPGR pilot scale programs were completed by KHD Humboldt Wedag GmbH at its testing facilities located near Cologne, Germany. This work was undertaken to test the suitability for this technology to replace a conventional SABC grinding circuit. Tests were completed in 2007 and 2008 on 3.5 and 1.3 t samples.

The installation of a HPGR requires a second crushing stage after a primary stage to size HPGR feed to about 40 mm. The HPGR discharge may or may not be screened for recycling coarse material. The next processing unit in the circuit would be a ball mill to prepare flotation feed. In other words, an HPGR installation removes a SAG mill and replaces it with a second stage crusher, a fine mineralized material storage system with bottom material recovery capability and a HPGR crushed product handling arrangement. Dust collection would be needed for all of the "dry" process equipment.

In 2008, Met-Chem completed a comparison between the use of a SABC circuit and a HPGR installation for the Marathon PGM-Cu project. The HPGR option included a primary crusher, secondary crusher, HPGR and a ball mill. Met-Chem suggested that the HPGR capital and operating costs were lower than the SABC option – $128/143M capital and $4.10/6.22 per tonne respectively. Both estimates can be assumed to be approximate, given that the total metallurgical facility capital cost estimate present by Micon 2010[1] was $158M and the total operating cost was $6.79/t.

P&E Mining Consultants suggests that the concept of an HPGR crushing installation for the development of the Marathon Project warrants further investigation. Aspects that could be considered are the potential interruptions of plant operation by frozen mineralization in the secondary crusher stockpile and packing on rollers, cost and delays caused by roller surface rebuilding and the need for standby HPGR units. HPGR installations are limited in wet, cold mining locations.

6.11.3 Miscellaneous Metallurgical Investigations

Rougher tailings were subjected to a simple magnetic separation test. The target was the production of a by-product magnetite concentrate. The test produced a low purity product. Magnetite typically partially reports to sulphide flotation concentrates. An opportunity may exist to upgrade rougher concentrates by removing coarse magnetite before regrinding.

A "PLATSOL" test was conducted at SGS Lakefield on a flotation concentrate. The PLASTOL process is a high-pressure leach process developed to recover the platinum group metals ("PGMs") from mineralized materials and concentrates. In the test, Cu and Pt were fully dissolved. About 80% of the Pd and a 50% of the Au and Ag were leached. These low extractions eliminate further consideration of the PLATSOL process for the Marathon Project.

Samples of flotation concentrate were shipped from the ALS pilot plant results to Outotec for the determination of thickening and filtration characteristics. The thickening rate was reasonable with 56-60% solids (low) achievable in thickener underflow. The filtration rate ranged from 200 to 390 kg/m^2h (reasonable) with a residual moisture content ranging from 11.4 to 14.6%. The slightly higher than desirable moisture content is related to the fineness of the concentrate mineralization.

6.12 METALLURGICAL RECOVERIES

The extensive metallurgical testwork appears to have overcome several challenges presented in concentrating the valuable minerals present in the Marathon resource, including the following:

- The copper and PGM mineralization are present in small proportions;
- A small amount of concentrate would be produced from each tonne of mineralized material fed to a process plant – the concentration ratio exceeds 65:1. This is a particular problem for both bench and small-scale pilot testing – a final concentrate from a 1 kg test would be only 15 grams;
- The soft copper mineral needs to be removed at a relatively coarse grind. The rougher concentrate containing copper and PGM mineralization both need to be reground and

[1] Micon, 2010, Technical Report on the Updated Feasibility Study for the Marathon PGM-Cu Project.

in the laboratory the quantities are less than suitable for laboratory scale equipment; and

- The kinetics of copper flotation are fast and that of the PGM flotation are slow. Long flotation times can lead to froth collapse.

The XPS LCT test results of 2010 (Figure 6.8 and Table 6.13) appear to represent stable test conditions for a split flowsheet as well as representing a range of mineralization grades expected in process plant feed.

Five tests representing mineralized material composites assaying between 0.11% and 0.39% Cu (Figure 6.8) produced the following average recoveries:

Copper – 89.7%
Silver – 71.5%
Gold – 73.2%
Palladium – 82.9%
Platinum – 74.5%.

Two blends assaying 0.24% Cu (Table 6.13) produced the following recoveries:

Copper – 89.9%
Silver – 70.9%
Gold – 77.5%
Palladium – 81.8%
Platinum – 76.7%.

The recoveries determined in these XPS tests are marginally lower, particularly for copper and gold, than used by Micon (2010) and Nordmin (2014) in technical reports, e.g. Cu 90.8 and 92.96% respectively; gold 79.9 and 82.4%. Palladium recoveries reported in XPS tests are slightly higher than assigned by Micon and Nordmin.

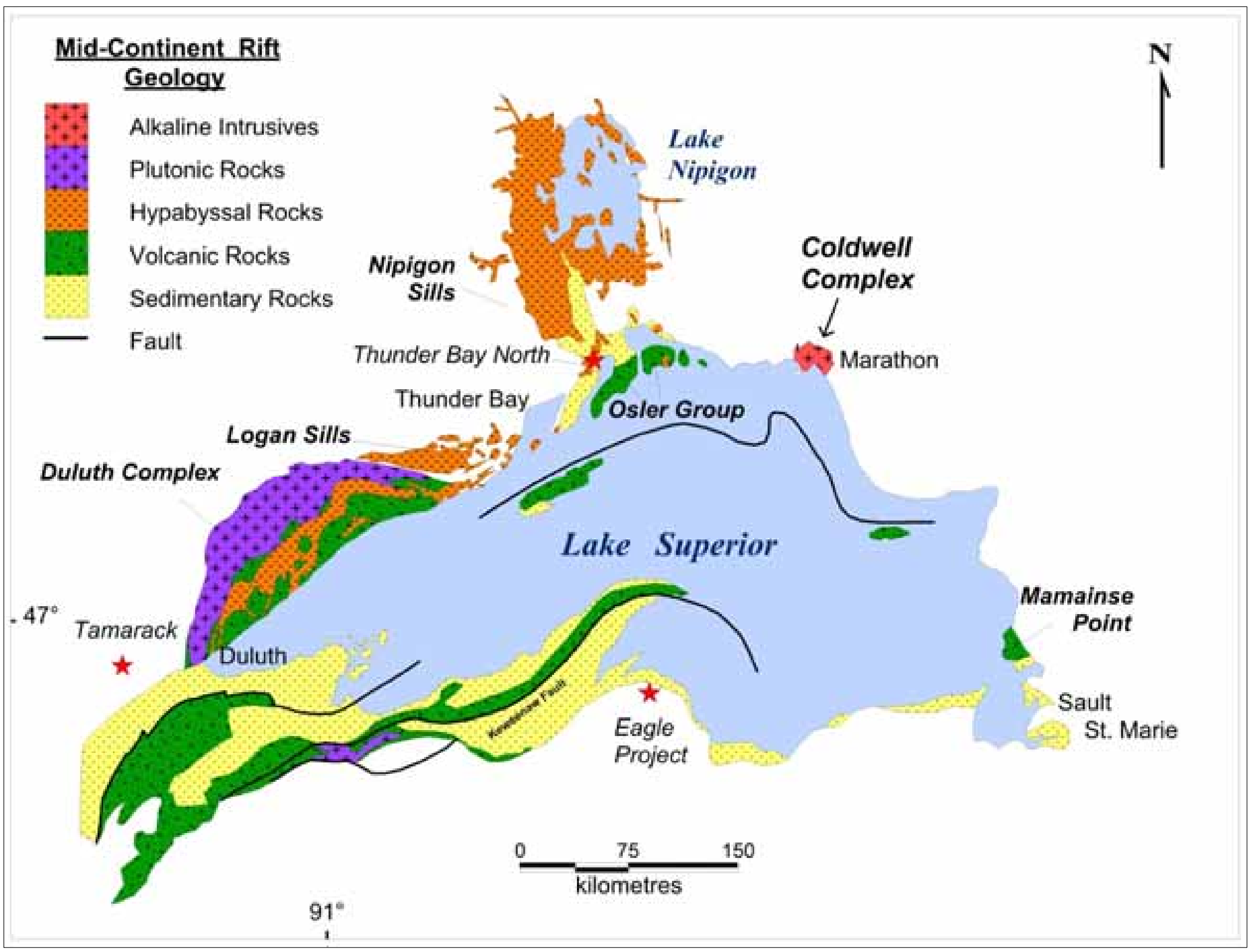
7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The Marathon Deposit is hosted by the Two Duck Lake Gabbro, a late intrusive phase of the Eastern Gabbro. The Eastern Gabbro has recently been described as a composite intrusion by Good et al. (2012) and occurs along the northern and eastern margin of the Proterozoic Coldwell Alkaline Complex ("CAC") which intrudes the much older Archean Schreiber-Hemlo greenstone belt (Figure 7.1). The sub-circular CAC has a diameter of 25 km and a surface area of 580 km^2 and is the largest alkaline intrusive complex in North America (Walker et al. 1993).

The Coldwell Alkaline Complex is believed to have intruded over a relatively short period of time near the beginning of the main stage of the Mid-continent Rift magmatism that occurred between 1108 and 1094 Ma (Heaman and Machado, 1992 and Heaman et al., 2007).

FIGURE 7.1 REGIONAL GEOLOGY OF THE MID-CONTINENT RIFT IN THE LAKE SUPERIOR AREA



Source: Marathon PGM Corp. (2010)

7.1.1 Geology of the Coldwell Alkaline Complex

The CAC was first described as a lopolith by Puskas (1967) and as three intrusive centers by Mitchell and Platt (1977). The intrusive centers were later described as three superimposed rings by Currie (1980). Detailed mapping across the CAC by Walker et al. (1993) supported the multiple intrusive centre model of previous workers. Walker et al. also proposed that the CAC has a sub-horizontal structure or stratigraphy.

The major rock units of each magmatic centre of the CAC, as summarized by Shaw (1994) after Walker (1993) and as shown in Figure 7.2, include the following:

- Centre I: Eastern and Western Gabbros, Amphibole Quartz Syenite, Iron-rich Augite Syenite, Monzodiorite and mafic volcanic and subvolcanic rocks.
- Centre II: Amphibole Nepheline Syenite and Alkaline Gabbro.
- Centre III: Quartz Syenite and Amphibole Quartz Syenite.

Recent work by Kern et al. (2012) and Kulakov et al. (2012) suggests Centres I and III were intruded prior to Centre II. These two studies presented comprehensive paleomagnetic data from the CAC and included measurements from intrusive syenitic to gabbroic rocks of Centres I, II and III. The results of Kern et al. indicate that paleomagnetic signatures for Centres I and III are statistically indistinguishable, and that rocks of Centre II were emplaced after the magnetic reversal that occurred about 1103-1104 Ma. The study by Kulakov et al. examined the package of volcanic rocks located in the centre of the CAC, and determined that the paleomagnetic signature for the basalts is very similar to that for intrusive rocks of Centres I and III as determined by Kern et al. and is consistent with an age for deposition of 1107 Ma.

FIGURE 7.2 GEOLOGY OF THE COLDWELL COMPLEX

Note: *Shows the locations of the Marathon Deposit and the Geordie Deposit.*
Geology after Walker et al. (1993)
Source: *Marathon PGM Corp. (2010)*

7.1.2 Geology of the Eastern Gabbro

The Eastern Gabbro forms part of a very large magmatic system and contains numerous Cu-PGM occurrences along its entire length. It is up to 1,500 m thick and strikes for 33 km around the eastern margin of the Coldwell Complex (Figure 7.3). It is considered the oldest intrusive phase of the Complex and was interpreted to have formed by multiple intrusions of magma into restricted dilatant zones within a ring dyke possibly associated with ongoing caldera collapse (Walker et al, 1993; and Shaw, 1997 after work by Puskas (1967 and 1970) and Currie (1980)). Shaw (1997) concluded the Eastern gabbro consists of evolved basaltic magma with a sub alkaline parentage.

The magnetic signature of the Eastern Gabbro in the area of the Marathon Deposit is shown in Figure 7.3, which highlights the segmented or discontinuous character of various phases of the Eastern Gabbro.

The Eastern Gabbro is overlain by massive to layered augite syenite (Puskas, 1970; and Walker et al., 1993). Layering in the gabbro and augite syenite dips moderately towards the centre of the complex.

Historic Classification of the Eastern Gabbro

Puskas (1970) subdivided the Eastern Gabbro into three groups: the Outer Border Zone of chilled gabbro; the Inner Border Zone A of massive gabbro; and the Inner Border Zone B of layered gabbro. Based on detailed regional mapping, Walker et al. (1993) subdivided the Eastern Gabbro into three dominant intrusive bodies: the Eastern Layered Gabbro Series; the Two Duck Lake Gabbro; and the Malpa Lake Gabbro. Further detailed study of two stratigraphic sections through the Layered Gabbro Series by Shaw (1997) resulted in the definition of at least three intrusive phases separated by thick zones of xenolith-laden massive gabbroic bodies. The lower zone consists of a fine-grained chill (Sequence I) that grades upward into modally layered gabbro at the meter scale (Sequence II) to the centimeter scale (Sequence III) (Table 7.1).

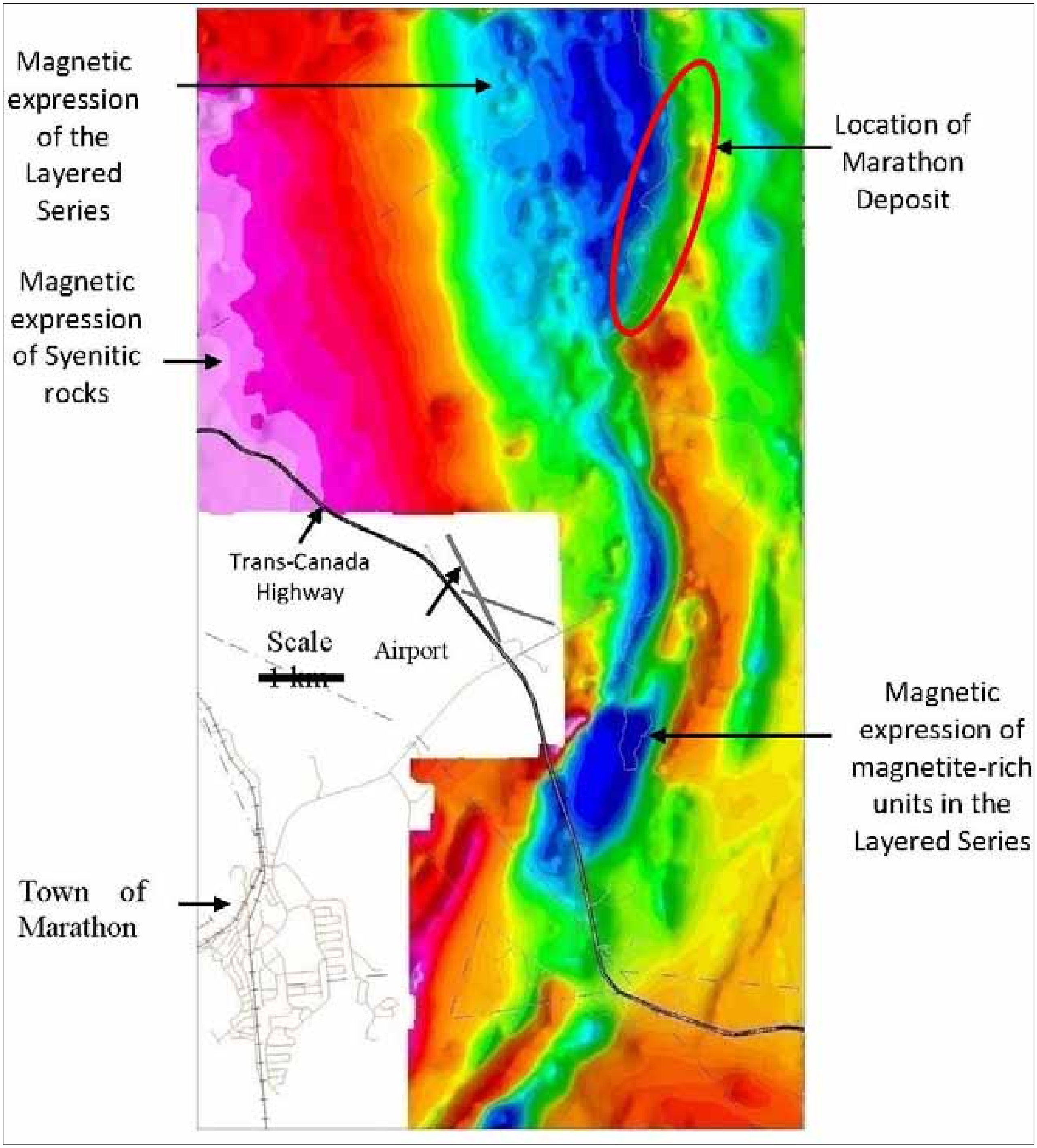
New Classification of the Eastern Gabbro

A new classification of the Eastern Gabbro as proposed by Good et al. (Economic Geology 2012) includes the Fine Grained Series, Layered Series and Marathon Series. The new classification is based on distinctive petrographic features, geochemical characteristics and cross cutting relationships. The three series largely maintain the subunits of the Eastern Gabbro as presented by Puskas (1970) and Shaw (1997) but with the main differences that the units are not necessarily co-genetic. The Marathon Series is the youngest intrusive phase and is defined here to include all mafic and ultramafic intrusive rocks that host copper and platinum group element (PGE) mineralization in the vicinity of the Marathon deposit. The Fine Grained Series is the oldest intrusive phase and is equivalent to the outer boundary chill gabbro of Puskas or Sequence I rocks of Shaw. The Layered Gabbro Series matches the Inner Zones A and B of Puskas or Sequences II and III of Shaw (Table 7.1).

TABLE 7.1
NEW CLASSIFICATION SCHEME FOR THE EASTERN GABBRO

SCI Classification for Eastern Gabbro				Previous classification strategies		
Series	**Unit**	**No. of Sub-units**	**Relative Age**	**Puskas, 1970**	**Wilkinson, 1983**	**Shaw, 1997**
Fine Grained Series	Gabbro	4	oldest	Outer border zone of chilled gabbros	Fine Grained Gabbro	Layered Gabbro Series I
Layered Series	Gabbroic anorthosite	1		Inner Border Zone B of Layered gabbro	Banded Gabbro	Layered Gabbro Series II and III
	Olivine gabbro	2				
	Oxide augite melatroctolite	1				
Marathon Series	Wehrlite	4		Inner Border Zone A of massive gabbro	Mottled Gabbro	
	Augite troctolite	7				
	Oxide melatroctolite	1			Magnetite olivinite	
	Two Duck Lake Gabbro	5			Heterogen-eous gabbro	Two Duck Lake Gabbro
	Apatitic clinopyroxenite	2	youngest			

FIGURE 7.3 TOTAL MAGNETIC IMAGE OVER EASTERN BOUNDARY OF THE COLDWELL COMPLEX



Source: Marathon PGM Corp. (2010)

7.1.3 Detailed Geology of the Marathon Property

The geology of the Marathon Project is defined to a large extent by the intrusive cross cutting relationships between the Marathon Series and the earlier Fine Grained Series, and by the complicated nature of the basal contact with the partially melted Archean rocks. The geology of the Property is shown on a plan map (Figure 7.4) and a north-south longitudinal section (Figure 7.4) that is located along the western edge of the Deposit.

The Two Duck Lake Gabbro is the dominant host rock for Cu-PGM mineralization and is the focus of exploration. Additional accumulations of Cu-PGM mineralization are associated with oxide ultramafic intrusions of the Marathon Series that consist of clinopyroxene +/- olivine +/- magnetite +/- apatite cumulate rocks. These ultramafic bodies occur predominantly in These ultramafic bodies occur predominantly in the hanging wall of the Deposit and were formerly referred to as Layered Magnetite Olivine Cumulates.

7.1.4 Archean Country Rock and Rheomorphic Intrusive Breccia

The footwall of the Marathon Deposit is comprised of Archean intermediate pyroclastic rocks that have undergone partial melting as a result of the heat of intrusion of the Eastern Gabbro. At the contact with the Eastern Gabbro, the footwall is referred to as Rheomorphic Intrusive Breccia ("RIB"). The RIB/gabbro contact is not a simple contact as blocks of RIB material occur within the gabbroic series and intrusions of gabbro extend deep below the footwall contact. Also, a few thin near vertical promontories of RIB extend into the gabbroic series (Figure 7.4).

In a detailed study of the RIB, Uldis Abolins (1967) described the breccia as a matrix supported heterogeneous mixture of angular and sub rounded fragments composed of fine to coarse grained gabbroic material, quartzite, pyroxenite and layered quartz pyroxenite. A distinguishing feature of the RIB is the common occurrence of elongate curved pyroxenite fragments. Abolins estimated the composition of the breccia matrix to be close to that of a quartz norite.

Locally, the footwall forms basins and ridges under the TDL Gabbro. This paleo surface played an important role in the formation of the Marathon Deposit by encouraging accumulation of sulphides through physical processes such as settling out of sulphide droplets in the magma conduit (see Section 8.0 for a detailed discussion).

7.1.5 Fine Grained Gabbro (Fine Grained Series)

The most abundant rock type in the hanging wall overlying the Marathon Deposit is fine grained gabbro. Layering can be detected at the meter scale by gradational change in grain size. Contacts with other gabbro units are sharp.

The fine grained gabbro consists of equigranular clinopyroxene, olivine, plagioclase and minor magnetite. Intergranular angles are near 120 degrees (Figure 7.4) indicating the fine grained gabbro is re-crystallized. Recrystallization would require very high temperature metamorphism perhaps of pyroxene hornfels grade. Metamorphism occurred during intrusion of Layered Series and Two Duck Lake Gabbro.

An important and remarkable feature of fine grained gabbro is the extremely low level of secondary alteration (Figure 7.4). In a survey of 50 thin sections only a few sections contained serpentine alteration of olivine and one section contained amphibole alteration of olivine. Tremolite was not observed. Trace to less than trace amounts of secondary minerals such as chlorite and muscovite occur in the vicinity of olivine or cross cutting fractures.

Locally, the occurrences of flattened pipe shaped features that resemble amygdules imply that some of the fine grained gabbro may have originated as basaltic flows that were recrystallized during pyroxene hornfels grade metamorphism.

A common feature within fine grained gabbro particularly close to intrusions of TDL Gabbro is the formation of 1-2 cm sized zoned amoeboid shaped blebs with either a clinopyroxene or olivine core or a thin plagioclase rich rim. This texture is interpreted to have formed either by migration of material from the TDL magma along a very fine 3-D network or by pyroxene hornfels metamorphism related to intrusion of the TDL magma.

7.1.6 Layered Olivine Gabbro and Oxide Augite Melatroctolite (Layered Series)

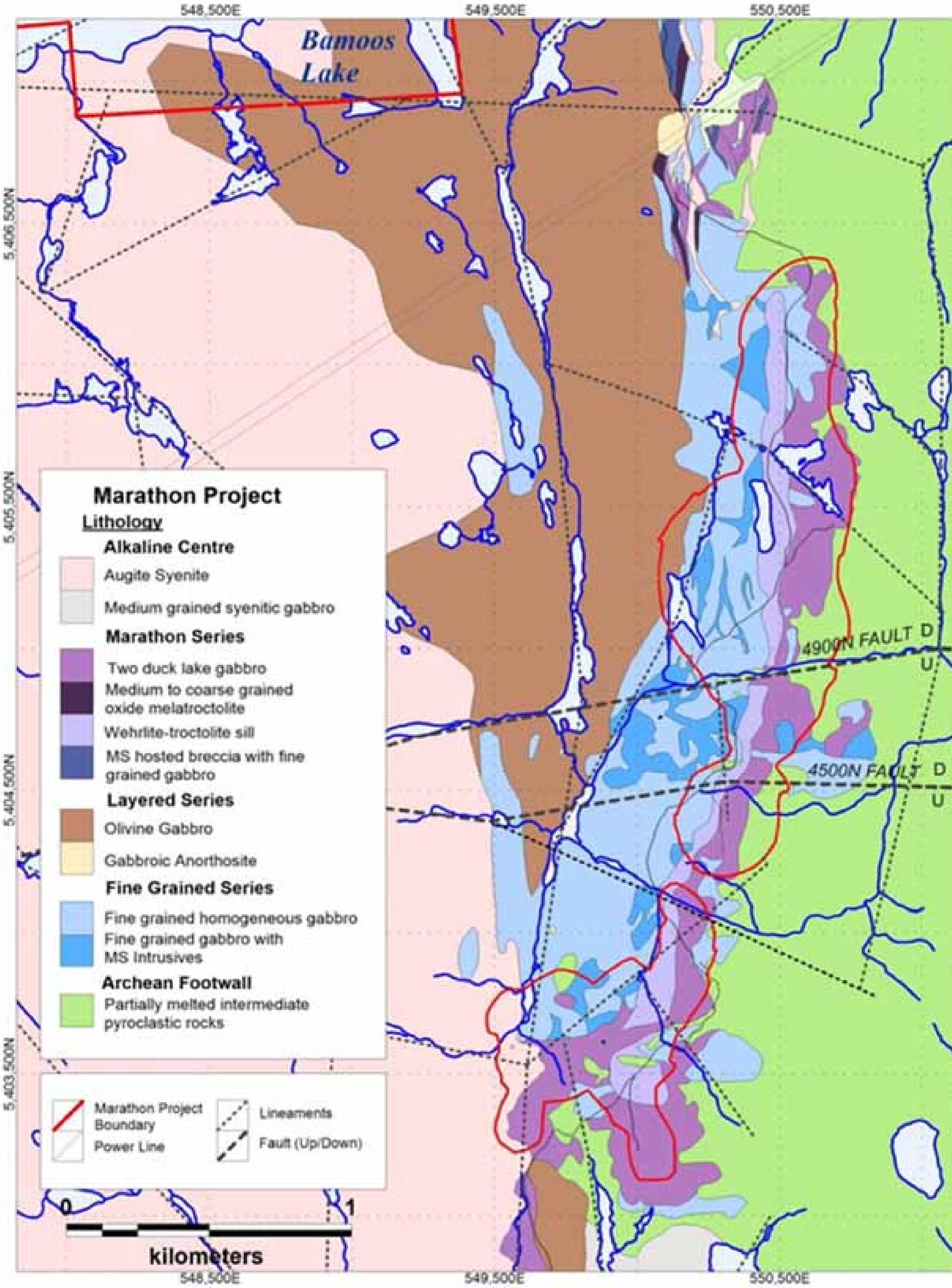
The Layered Series makes up the majority of the Eastern Gabbro but only occurs along the western edge of the Marathon Property. It is compositionally, geochemically and texturally similar along the entire strike length of the Complex. The Layered Series is dominated by massive to modally layered olivine gabbro with lesser amounts of inter-layered thick units of oxide augite melatroctolite. Contacts between these units are typically gradational.

The olivine gabbro is medium to coarse grained and is characterized by intergranular texture, plagioclase alignment, and modal layering. The modal layering is defined by a gradational increase in the abundance of plagioclase, and ranges in composition from olivine melagabbro to olivine gabbroic anorthosite. The lower contact of modal layers is not sharp but shows strong contrast. The modal layers are variable on a decimetre to metre scale and may show continuous to lenticular rhythmic layering. Cross-bedded, wavy or convoluted layering may also be present.

The olivine gabbro has an intergranular texture and is composed of, in decreasing order of abundance, plagioclase, clinopyroxene, olivine, magnetite and apatite. Medium-to-coarse grained plagioclase is euhedral to subhedral, whereas olivine and clinopyroxene crystals are medium grained and subhedral. The gabbro includes up to 10%, fine grained, euhedral and interstitial apatite and up to 10% interstitial magnetite. Alteration of plagioclase and mafic minerals to sericite and chlorite or actinolite, respectively, is weak to moderate.

The oxide augite melatroctolite is texturally similar and gradational to the layered olivine gabbro and is distinguished by abundant magnetite (15 to 25 modal %). The oxide augite melatroctolite occurs as discontinuous and irregular pods and lenses within the layered olivine gabbro. The unit is typically medium-to-coarse grained and may exhibit plagioclase alignment.

FIGURE 7.4 GEOLOGICAL MAP OF THE MARATHON DEPOSIT



Note: *Mapping by geologists of Marathon PGM Corp and Stillwater Canada Inc, 2012*
Source: Stillwater Canada Inc. (2012)

7.1.7 Wehrlite-Troctolite Sill (Marathon Series)

A newly recognized Wehrlite-Troctolite ("WT") sill located immediately above the main mineralization bearing Two Duck Lake Gabbro (Figure 7.5 and Figure 7.6) is an important marker horizon and is thought to have important implications with regard to the origin of the Marathon mineralization. Further, of equal or greater significance, the excellent continuity of the unit across a total of 128 carefully logged drill holes negates the possibility of numerous post mineralization faults as proposed by Dahl et al. (2001). The sill is 30 to 50 m thick, is composed of an upper wehrlite and lower augite troctolite unit, and does not contain any significant sulphides.

The WT sill is an excellent marker horizon and provides the only evidence for normal faulting along the surface lineaments located near 5,404,900 N and 5,404,500 N as illustrated in Figure 7.5.

The WT sill occurs along the entire strike length of the Marathon Deposit and forms an important marker horizon above the Main Zone of mineralization. This relationship changes at the south end of the deposit (near 5,403,800 N), where the dip of the sill is sub-horizontal, and the TDL Gabbro cuts through the sill to form the southwest limb of the Deposit.

The wehrlite typically occurs immediately above the augite troctolite unit. The wehrlite consists of, in decreasing order of abundance, olivine, clinopyroxene, plagioclase, and magnetite. Olivine and clinopyroxene are medium to very coarse grained but olivine is generally subhedral and clinopyroxene is anhedral. Plagioclase is interstitial and medium-to-coarse grained, and magnetite is anhedral to subhedral. Plagioclase comprises 5–25% of the rock. Thin layers of coarse grained oxide wehrlite commonly occur within the wehrlite.

The augite troctolite is distinguished by the presence of coarse grained olivine, clinopyroxene and magnetite oikocrysts. The nature of plagioclase varies from euhedral laths to anhedral, interstitial networks; the latter feature giving the augite troctolite a mottled appearance.

7.1.8 Two Duck Lake Gabbro (Marathon Series)

The Two Duck Lake Gabbro ("TDL Gabbro") is the host rock for the Marathon Deposit. It occurs as a massive and poorly layered unit approximately 50 to 250 m thick that strikes near north for greater than 6 km (Figure 7.5, Figure 7.6 and Figure 7.7) and in general dips west at angles from 5 to 45 degrees. The TDL Gabbro intruded the Fine Grained Series beneath the Wehrlite-Troctolite sill and near the basal contact with Archean Footwall. The TDL Gabbro is intruded by very thin dykelets of RIB that are partial melt derivatives of the Archean basement and also by late north-northwest trending quartz syenite dykes.

The modal mineralogy of a composite sample that is representative of the Marathon Deposit mineralization (and Two Duck Lake Gabbro) was determined in a QEMSCAN survey by Xstrata Process Support (Kormos, 2008). A total of 9 aliquots of material were analyzed. In decreasing order of abundance, the composite sample was comprised of 42.0% plagioclase, 25.7% clinopyroxene, 7.8% amphibole, 5.5% Fe oxides, 4.6% olivine, 2.6% other silicates (quartz, epidote, talc, and serpentine), 2.2% orthoclase, 0.7% biotite, and the remainder of various sulphides (pyrrhotite, chalcopyrite and pentlandite). Orthopyroxene is rare and where present occurs as late reaction rims on olivine (Good, 1993).

The Two Duck Lake Gabbro is distinguished from other gabbro types by cross cutting relationships and mineral textures resulting from the respective crystallization histories. In TDL Gabbro, plagioclase crystallized first and forms elongate laths that are surrounded by ophitic textured clinopyroxene or olivine. Pegmatitic textured TDL Gabbro occurs locally as pods within coarse grained gabbro or as rims on Fine Grained Gabbro xenoliths. Mineralized pegmatite makes up less than about 5% of all mineralized zones. The composition of pegmatitic TDL Gabbro was compared to that of coarse grained, TDL Gabbro by Good (1992), and found to be similar.

An important aspect of TDL Gabbro relative to other Cu-PGM deposits such as at the Lac des Iles Mine is the fresh unaltered nature of primary minerals and textures. There is some local development of secondary minerals such as chlorite, amphibole, serpentine and calcite but the abundance of these minerals is not greater than about 10% for the deposit (Kormos, 2008).

There is only a minor fluctuation in mineral compositions across the TDL Gabbro (Good and Crocket, 1994a; Ruthart, 2013). Plagioclase crystals are normally zoned with compositions between 65% and 52% anorthite but in the Main mineralized zone typically exhibit replacement at grain margins by a more calcic plagioclase (69-79% anorthite). The average olivine composition is 56.9% forsterite and 540 ppm Ni. Clinopyroxene and orthopyroxene lie respectively within the fields of augite and hypersthene with Mg numbers between 0.6 and 0.7.

7.1.9 Oxide Ultramafic and Apatitic Clinopyroxenite Intrusions (Marathon Series)

The thickest accumulations of magnetite rich oxide melatroctolite are located between approximately 5,404,900N and 5,405,200N.

Oxide ultramafic intrusions frequently contain disseminated chalcopyrite and pyrrhotite and make up an important but very irregular component of the Marathon Series. The intrusions typically occur as discontinuous sills and irregular pods that crosscut Fine Grained Series, the Wehrlite-troctolite sill, and the Two Duck Lake Gabbro. The intrusions are less than 200 m in strike length and up to 100 m thick, but are commonly a few to tens of metres thick and less than about 50 m along strike. The size, irregular shape and mineralogy of these intrusions resemble the oxide ultramafic intrusions (“OUI”) that occur in the Duluth Complex (Ripley et al., 1998) and Sept Isles Intrusive Suite (Tollari et al., 2008).

The numerous cumulate phases and combinations thereof in oxide ultramafic intrusions are best described using the cumulate terminology of Miller et al. (2002). For example, the intrusive units vary in composition from oxide melatroctolite (FOCpA to FCOpA) to apatitic clinopyroxenite (CCoFAp to CCFoAp) to apatitic olivine clinopyroxenite (COFAp to OCFAp). Magnetite content varies from 5% in the clinopyroxenite to 25% in the oxide melatroctolite. Semi-massive or massive bands of magnetite are common and vary from 2 to 50 cm in thickness. Apatite is ubiquitous and varies in abundance from 5% to 30%. Massive apatite cumulate bands up to 30 cm thick are rare but found in apatitic clinopyroxenite.

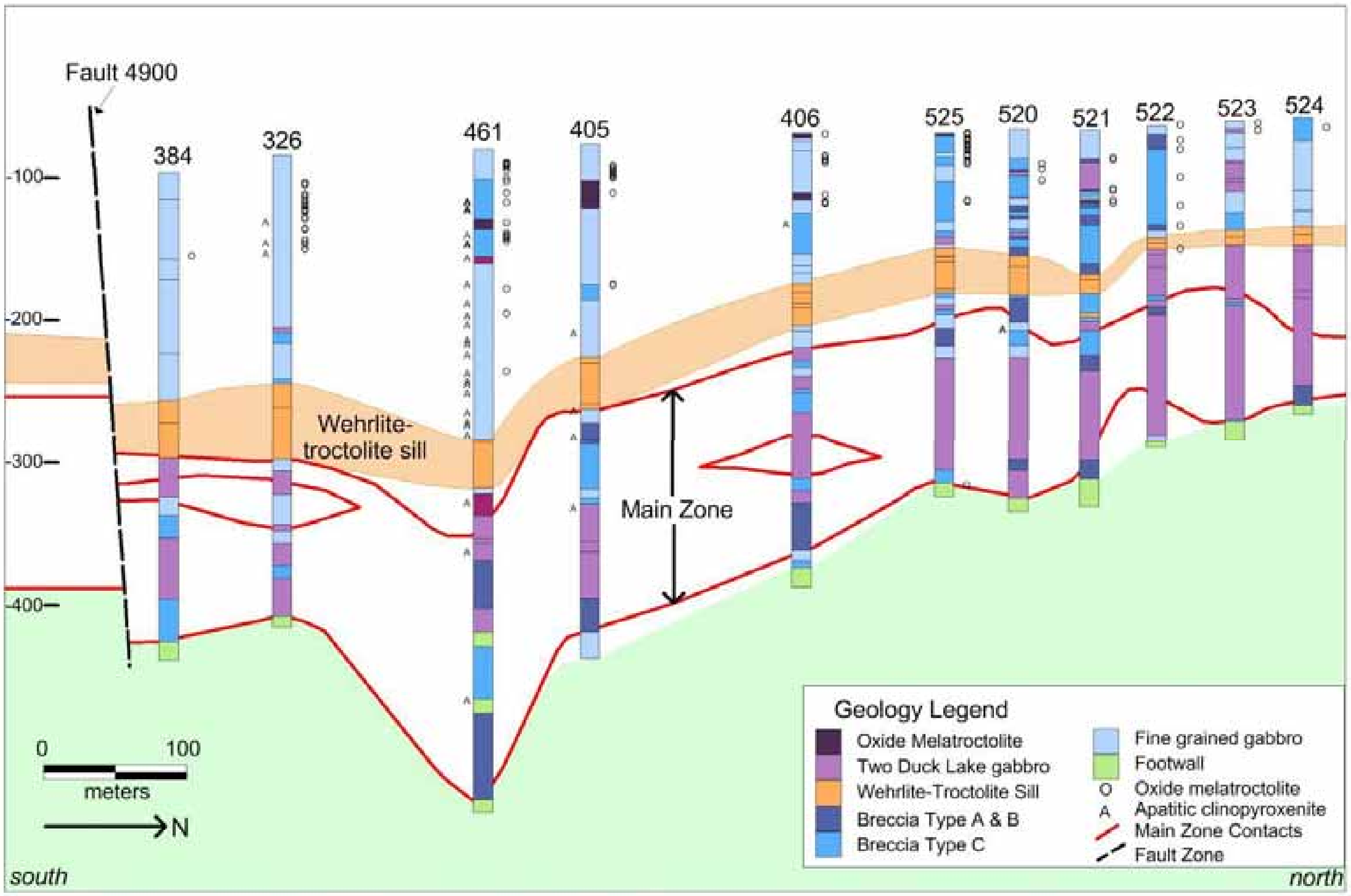
In general, these intrusions occur throughout the stratigraphy at the Marathon Deposit, however, units located high up in the stratigraphy are predominantly oxide melatroctolite and have higher overall magnetite content. These oxide melatroctolite intrusions are typically intermixed with plagioclase-rich gabbro bands (PcOf to PFoc) which display ophitic and/or flow aligned textures. Units lower down in the stratigraphy are composed primarily of apatitic clinopyroxenite and apatitic olivine clinopyroxenite. Compositional zonation is not evident within the lower intrusions.

7.1.10 Breccia Units (Marathon Series)

The Two Duck Lake Gabbro intruded along planes of weakness in earlier Fine Grained Gabbro and the Archean pyroclastic or rheomorphic footwall breccia to form numerous sills and intrusive breccias. Three types of intrusive breccias are recognized at the Marathon Deposit: type A consists of Two Duck Lake Gabbro matrix and angular xenoliths of fine grained gabbro; type B is similar to type A but also includes xenoliths of footwall material; and type C consists of Fine Grained Gabbro that is cut by multiple thin dykelets of TDL Gabbro, or higher up in the stratigraphic section, typically oxide melatroctolite. In general, the main body of TDL Gabbro progresses outward from a central uniform gabbro without xenoliths to breccia type A and lastly to breccia type C near the upper contact with fine grained gabbro. Breccia type B typically occurs along the basal contact, but is not always present. However, it should be noted that the distribution of breccia units is not regular and reversals are common, as illustrated for example, by the distribution of breccia units down holes 461 and 514 in Figure 7.5.

Breccia types A, B and C typically contain sulphide bearing Two Duck Lake Gabbro, or higher up in the stratigraphy, sulphide-bearing oxide melatroctolite. Hence breccia units are an important host rock for Cu- PGM mineralization.

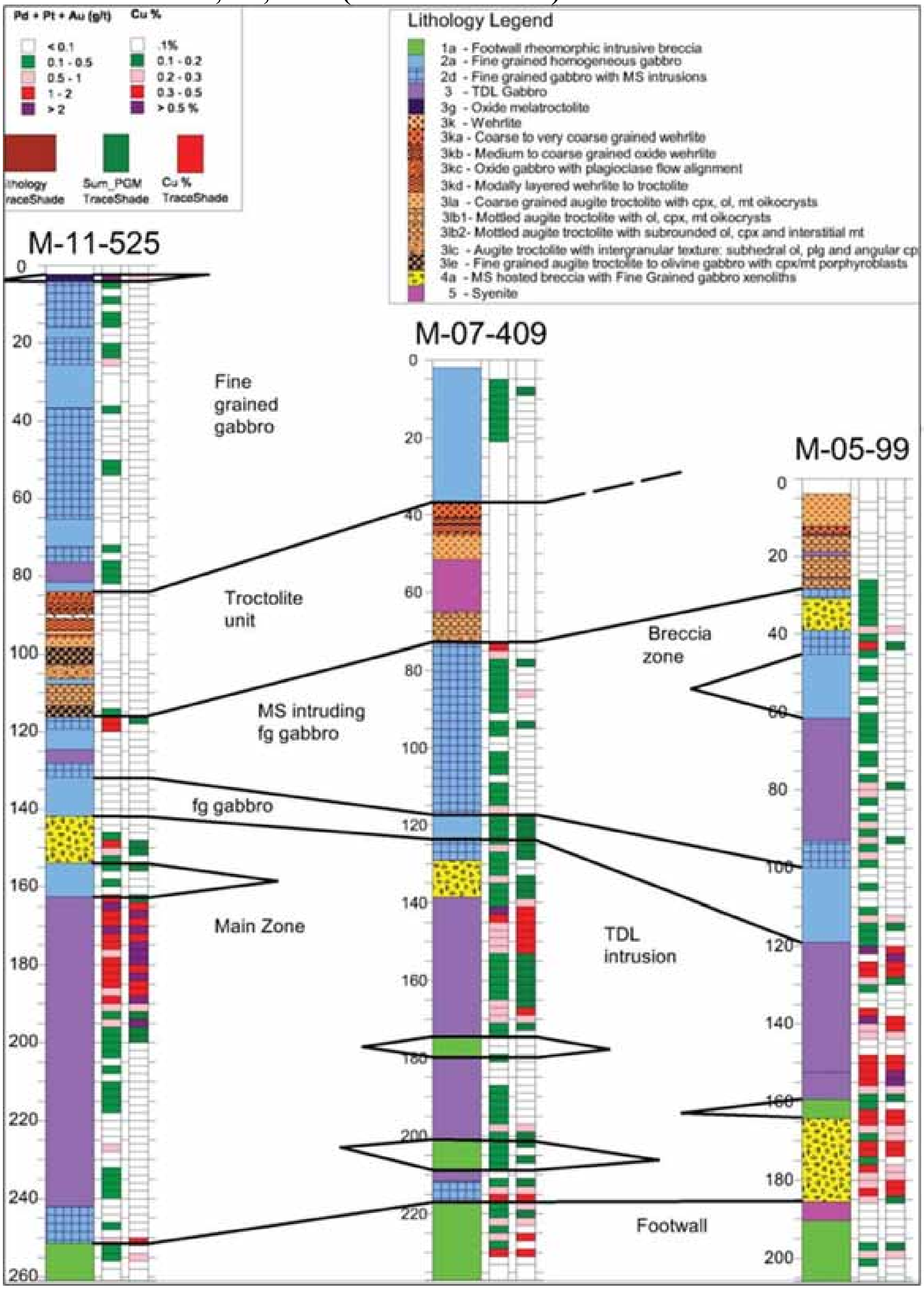
FIGURE 7.5 LONGITUDINAL PROJECTION THROUGH THE CENTRAL PORTION OF THE MARATHON DEPOSIT (LOOKING WEST)



Note: *Figure highlights the complicated sequence of rock units within the Marathon Series and the relative location of the Wehrlite-Troctolite sill above the Main Zone of Two Duck Lake Gabbro. Note the offset along the normal fault close to 5,404,900N. Note the distribution of apatitic clinopyroxenite immediately above the central portion of the Main Magma conduit as indicated by the position of hole M08-461. Hole numbers indicated without prefix example 525 is M-11-525. Note that for Figure 7.5, breccia types A and B are described as Breccia with Marathon Series matrix, and breccia type C is described as Fine grained gabbro with Marathon Series intrusions.*

Source: Stillwater Canada Inc. (2014)

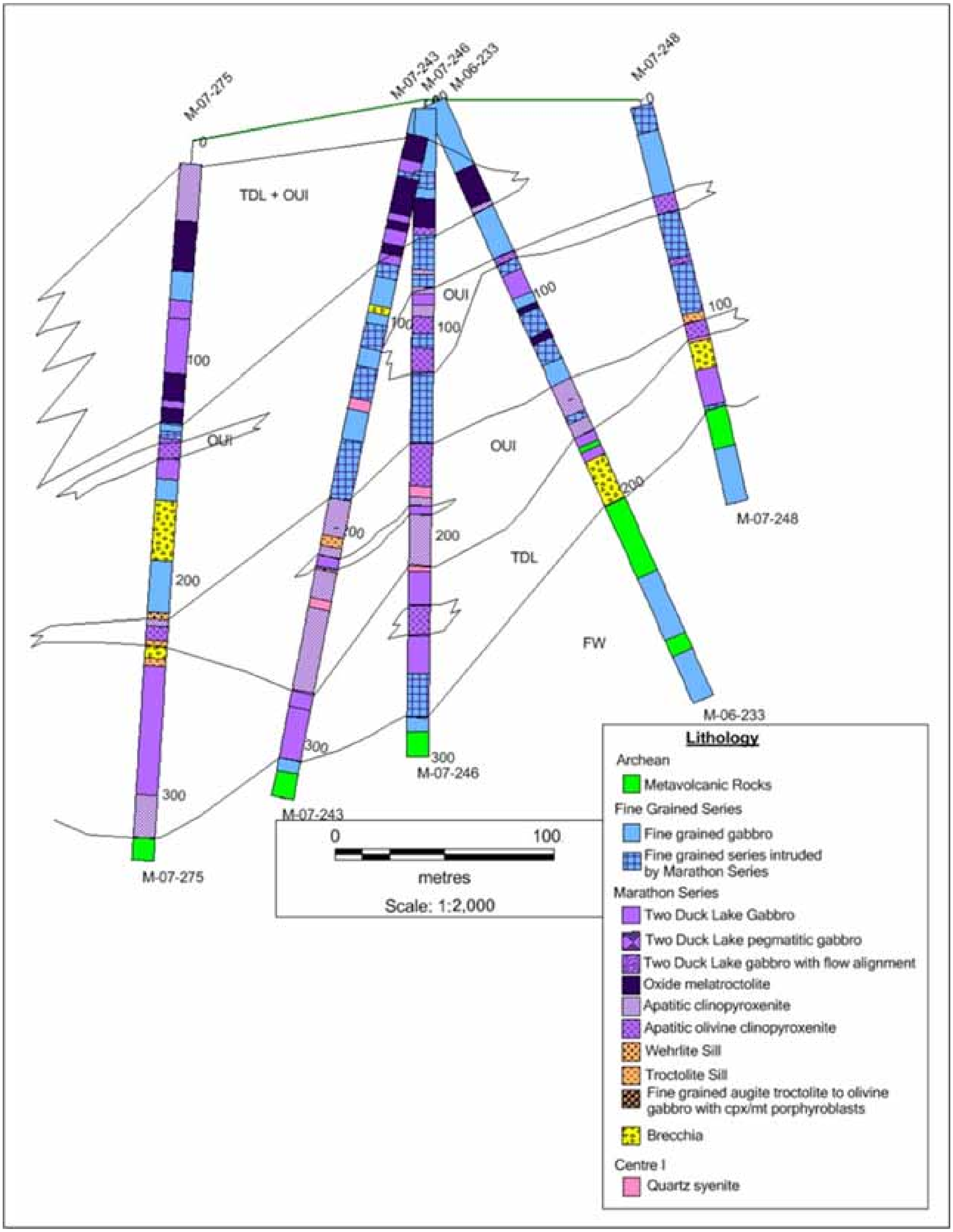
FIGURE 7.6 VERTICAL CROSS SECTION THROUGH THE MAIN ZONE AT SECTION 5,405,450 N (LOOKING NORTH)



Note: Figure highlights the complicated sequence of rock units within the Marathon Series and the relative location of the Wehrlite-Troctolite sill above the Main Zone mineralization. Note that hole M-11-525 is also located in the longitudinal projection in Figure 7.5.

Source: Stillwater Canada Inc. (2012)

FIGURE 7.7 VERTICAL CROSS SECTION AT 5,403,750 N (LOOKING NORTH)



Note: *Figure shows the irregular but complicated nature of the oxide +/- apatite bearing ultramafic intrusions (OUI) of the Marathon Series.*

Source: Stillwater Canada Inc. (2012)

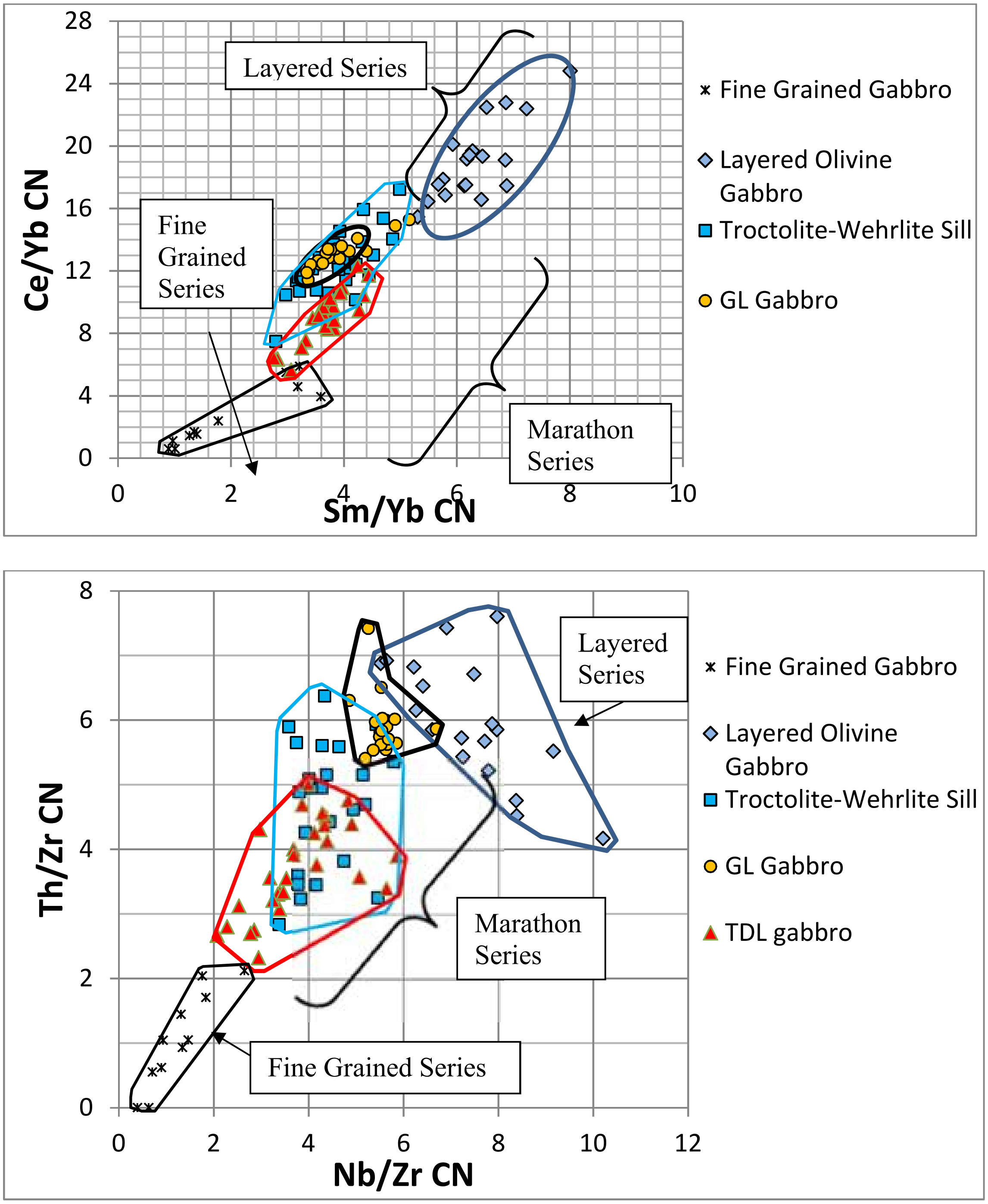
7.2 GEOCHEMICAL DISCRIMINATION DIAGRAMS FOR THE EASTERN GABBRO

Trace element data together with cross cutting relationships provides clear evidence that the Eastern Gabbro is a composite intrusion. Each of the three magmatic series (Fine Grained, Layered and Marathon Series) previously characterized by textural, petrographic and cross cutting relationships have recently been shown to have distinctive trace element signatures that can only be explained by intrusion of distinct magma types.

Pearce element diagrams (Figure 7.8) are very useful as discrimination diagrams because they neatly characterize the three intrusive series of the Eastern Gabbro into separate fields. In each figure, rock units of the Marathon Series plot in a field that lies between those for Fine Grained and Layered Series with the Fine Grained Series having lower Ce/Yb, Sm/Yb, Th/Zr and Nb/Zr and conversely, the Layered Series having higher Ce/Yb, Sm/Yb, Th/Zr and Nb/Zr.

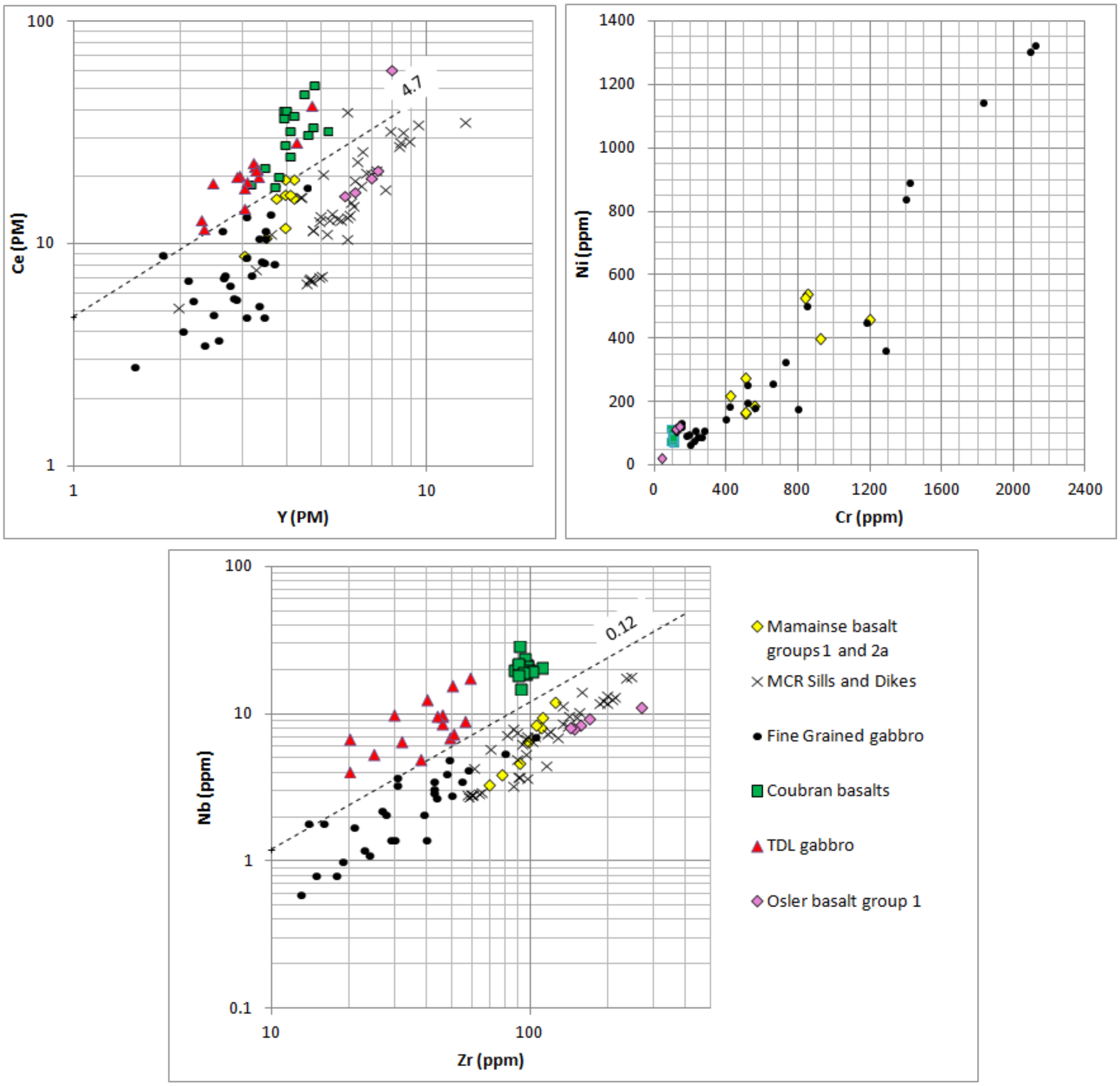
In Figure 7.9 three prominent units from the Coldwell are compared to other Mid-continent Rift related intrusive and extrusive rock units located along the north shore of Lake Superior (Figure 7.1 and 7.2. In Figure 7.9 the representative samples of Two Duck Lake Gabbro are compared to Fine Grained Series, Coubran basalt and Mid-continent Rift related intrusive sills and dykes of the Logan and Nipigon Sills located near Thunder Bay, Ontario (after Hollings et al. 2011). It is interesting that the data for the Fine Grained Series overlie the fields for the Nipigon and Logan sills, whereas the rocks of the Marathon Series have somewhat higher Ce/Yb, Sm/Yb, Th/Zr and Nb/Zr. Since the Fine Grained series is the earliest intrusive phase in the Coldwell, then the similarity of the Fine Grained Series to the Logan and Nipigon sills suggests that timing of the two events were simultaneous.

FIGURE 7.8 **PEARCE ELEMENT RATIO DIAGRAMS FOR THE THREE MAJOR INTRUSIVE SUITES IN THE EASTERN GABBRO SUITE**



Note: *These diagrams very nicely characterize the units into three groups that could be considered as least evolved (Fine Grained Series) to most evolved (Layered Series). Note the element in the denominator for axes on both figures is considered to be the least incompatible, respectively. Some data for TDL Gabbro after Ruthart (2013) Ratios are chondrite normalized after Sun and McDonough (1989).*
Source: *Source: Stillwater Canada Inc. (2012)*

Figure 7.9 Comparison of TDL Gabbro and Courbran Basalt to Intrusive and Extrusive Rocks of Mid-continent Rift



Note: *Comparison of Coldwell Units (Two Duck Lake Gabbro and basaltic flows north of Coubran Lake) to Mid-continent Rift related intrusive Sills (Nipigon sills) in the vicinity of Thunder Bay and basalt flows from Mamainse Point located along the eastern shoreline of Lake Superior and Osler basalt. Data for Nipigon Sills after Hollings et al. (2011), and Mamainse Point after Lightfoot et al. (1999). Some data for TDL Gabbro after Ruthart (2013). Ratios are chondrite normalized after Sun and McDonough (1989).*

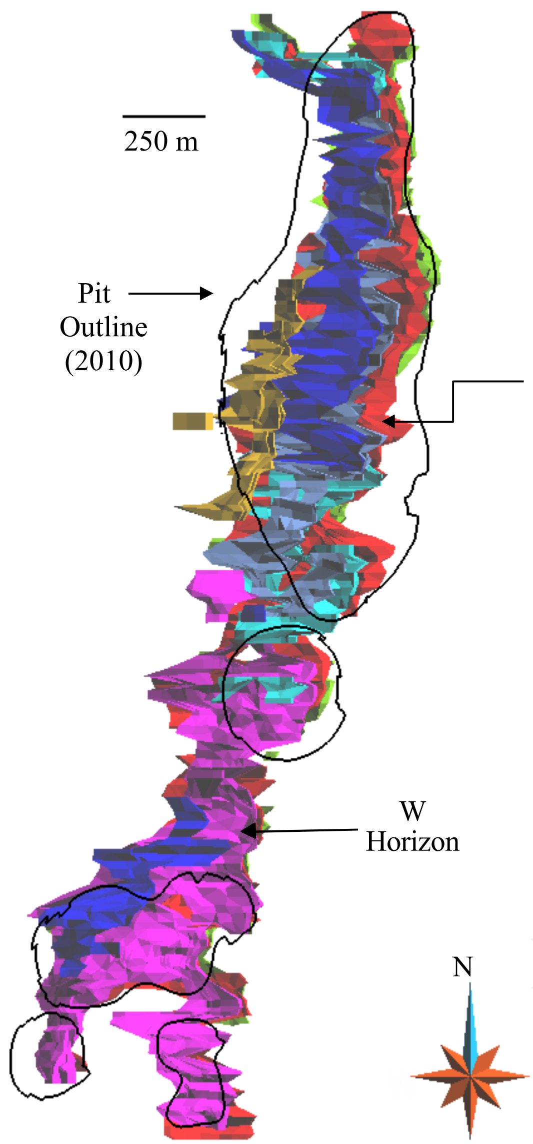
Source: Stillwater Canada Inc. (2014)

7.3 MINERALIZED SHOWINGS AND OCCURRENCES

7.3.1 Mineralized Zones

The Marathon Deposit consists of several large, thick and continuous zones of disseminated sulphide mineralization hosted within the Two Duck Lake Gabbro (Figure 7.10). The mineralized zones occur as shallow dipping sub parallel lenses that follow the basal gabbro contact and are labeled as footwall, main, hanging wall zones and the W Horizon. The Main Zone is the thickest and most continuous zone. For 516 intersections greater than 4 m thick the average thickness is 35 m +/- 28 m and the maximum thickness is 183 m.

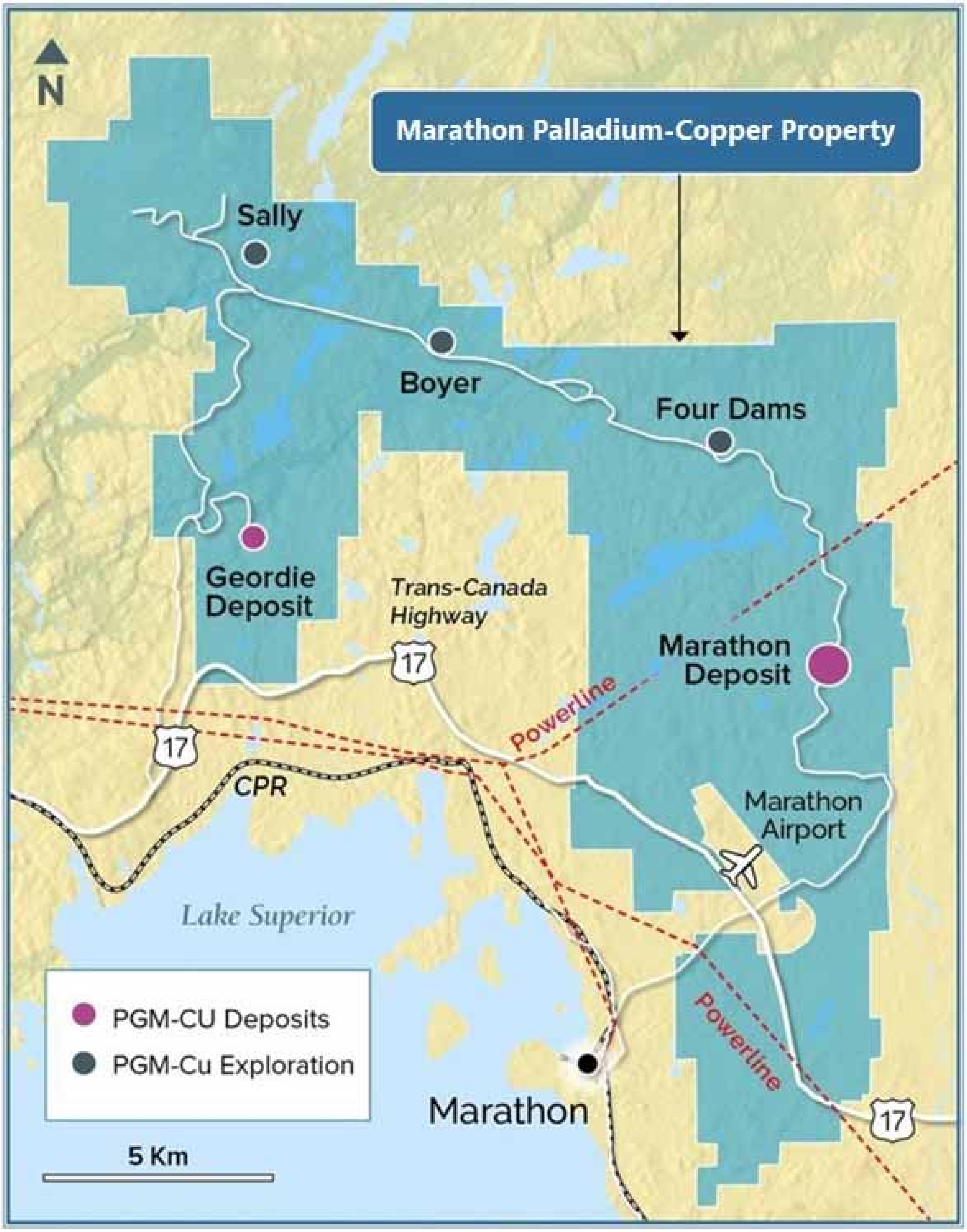
FIGURE 7.10 PLAN VIEW OF THE MARATHON DEPOSIT MINERALIZED ZONES



Source: *Stillwater Canada Inc. (2012)*

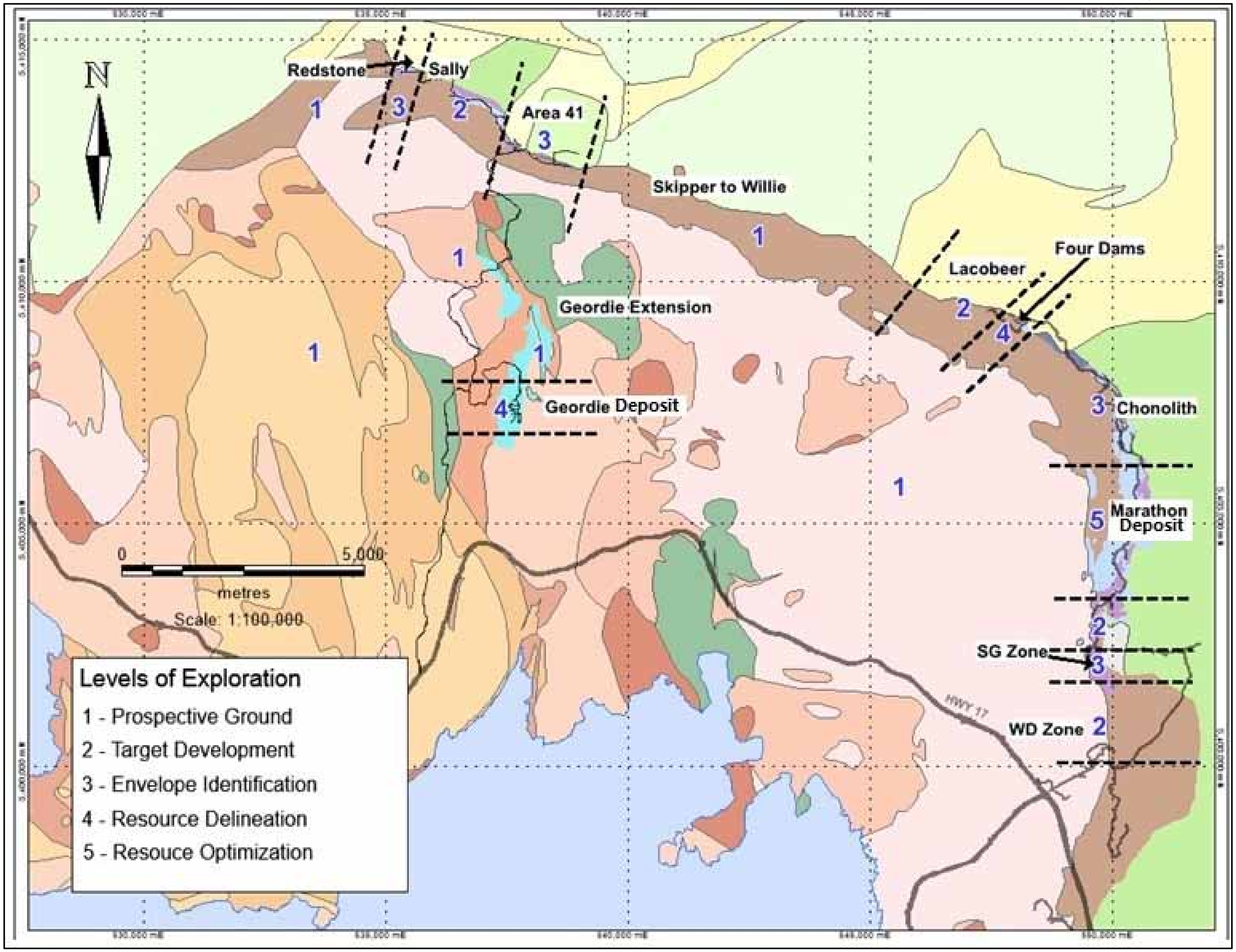
The following Figures 7.11 and 7.12 illustrate the location of the main mineralized areas located on the Marathon Property.

FIGURE 7.11 LOCATIONS OF MINERALIZED DEPOSITS AND THOSE AREAS IDENTIFIED FOR EXPLORATION



Source: *Generation Mining Limited (2019)*

FIGURE 7.12 GEOLOGY MAP OF THE COLDWELL COMPLEX AND LOCATION OF ALL KNOWN CU-PGM OCCURRENCES SHOWING EXPLORATION STATUS OR DEGREE OF DEVELOPMENT AS OF SEPTEMBER 9, 2019



Source: *Generation Mining Limited (2019)*

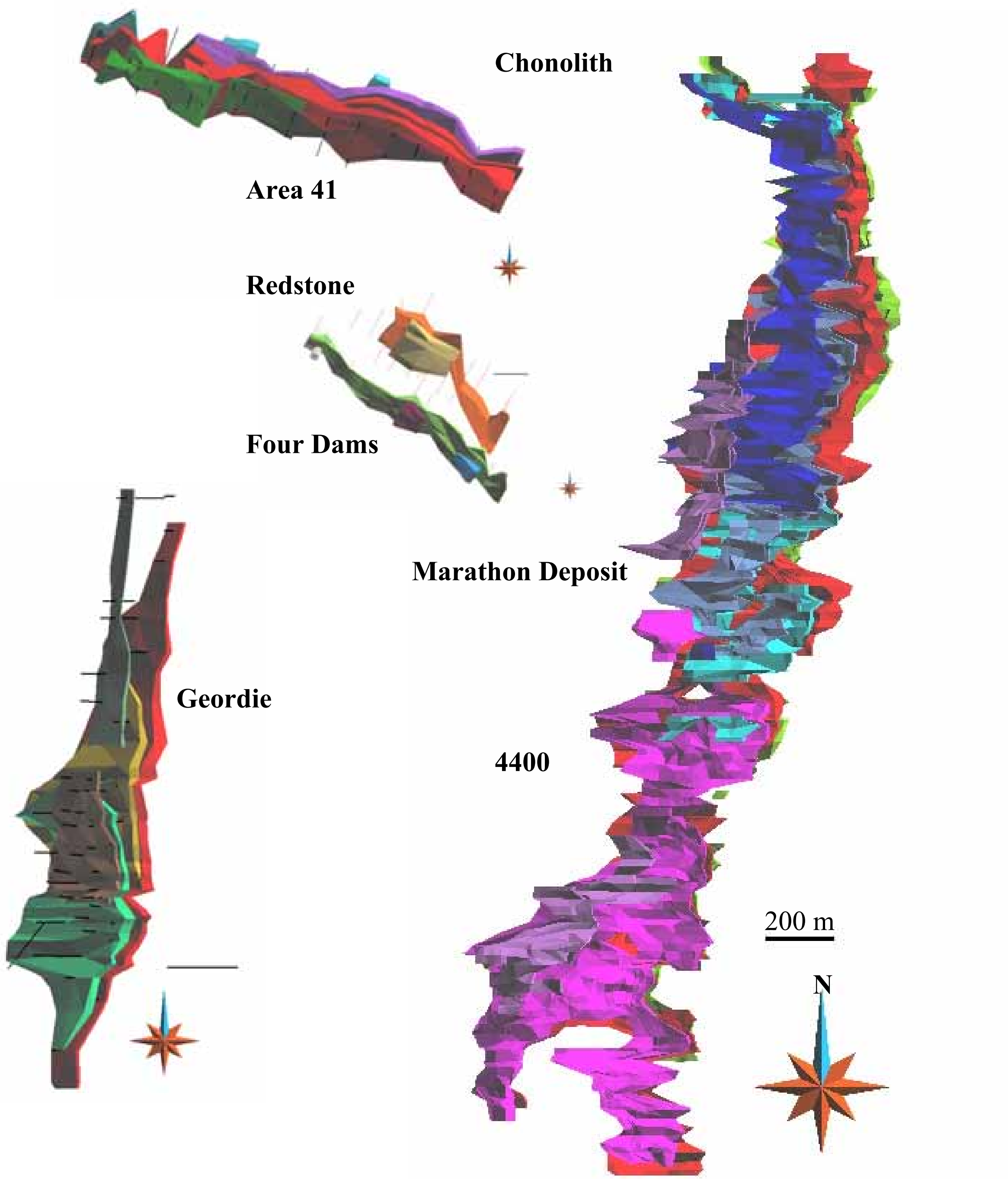
This section will describe Cu and PGM occurrences located in the vicinity of the Marathon Deposit; for instance, the Geordie and Sally Deposits, and other occurrences located along the outer margin of the Coldwell Complex.

Each of these occurrences displays at least some of the many characteristics described at the Marathon Deposit. Given that these prospects share a common origin, then similarities between them are expected. However, in detail, there is much dissimilarity in the respective petrography or metal compositions that imply for instance, that a dominant intrusive or mineralization forming process at one location might have played a minimal role at another. These factors are assessed at every locale and used to determine deposit significance and relevant exploration criteria.

Mineralized domains have been defined by drilling and 3-D modeling at several, but not all, locations. These mineralized domains are displayed with the Marathon Deposit in Figure 7.13. The figures are reproduced to the same scale in order to illustrate their relative size, and each body is oriented in their true position with north pointing toward the top of the page.

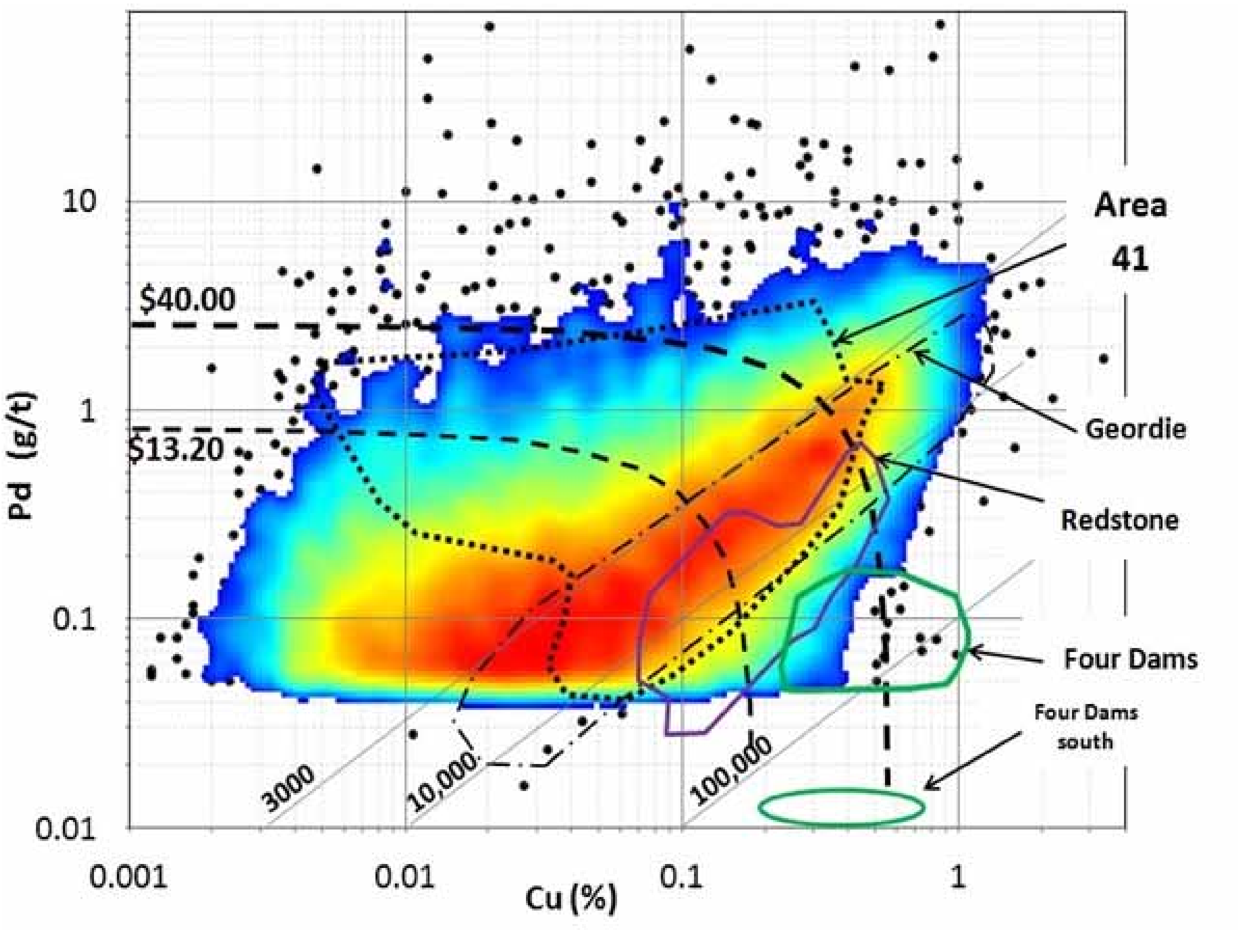
There are significant differences in the Cu and PGM abundances between the various Coldwell Deposits. These differences are best illustrated in the plot of Cu vs. Pd (Figure 7.14). For instance, the distribution of Cu and Pd at Area 41 closely matches the distribution observed at the Marathon Deposit. The abundance of Cu relative to Pd is much higher at Four Dams compared to other deposits. Samples such as those at Four Dams (north) have Cu/Pd of 20,000 to 200,000, but Cu/Pd at Four Dams South is greater than 200,000. The distribution of Cu and Pd at Geordie shows a strong positive correlation and the average Cu/Pd is slightly higher than the average Cu/Pd at Marathon. Similarly, at Redstone, there is a strong positive correlation, but the average Cu/Pd is greater than at either Geordie or Marathon.

FIGURE 7.13 SCALED 3-D MODELS OF THE COLDWELL MINERALIZED DOMAINS COMPARED TO THE MARATHON DEPOSIT



Note: *The scaled 3-D models are oriented correctly with north pointing up as shown by individual north arrows. Trace of drill holes at each location except Marathon are indicated by faint grey lines.*
Source: Micon. (2010)

FIGURE 7.14 COMPARISON OF CU VS. PD FOR COLDWELL COMPLEX DEPOSITS



Notes: *The coloured contours represent the point density map for Marathon Deposit assays (black dots). Fields for assays from other occurrences are represented by individual curves. Dashed curves labelled as $13.20 and $40.00 represent calculated NSR $/t values using the 2010 Mineral Resource Estimate metal prices and process recoveries. Diagonal blue lines represent constant Cu/Pd values, for example 3,000.*

Source: Micon (2010)

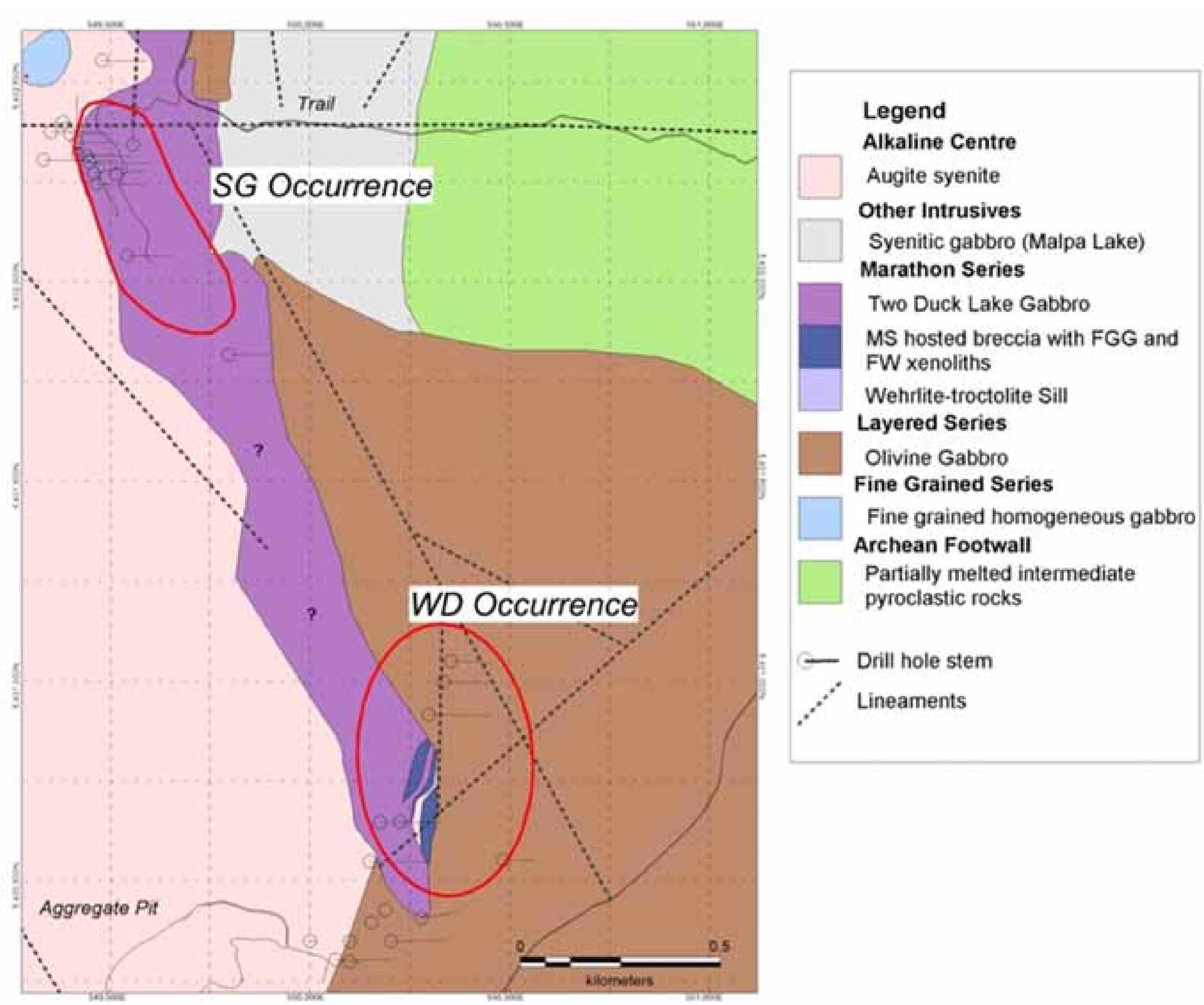
7.3.2 SG and WD Occurrences

The SG and WD occurrences are located south of the Marathon Deposit as shown in Figures 7.12 and 7.15. These zones are hosted by Two Duck Lake Gabbro, but unlike at the Marathon Deposit where mineralization occurs directly above the footwall, mineralized TDL Gabbro at the SG and WD zones occur along the west margin of the Eastern Gabbro close to the contact with the overlying Augite Syenite. The depth to footwall and nature of the contact in this area are unknown.

The change in stratigraphy south of the Marathon Deposit is interpreted to be related to faulting at 5,402,350 N resulting in the footwall offset to the east by 2 km. A southeast trending fault connects the SG and WD zones; both zones also encompass additional converging faults (Figure

7.15). The area between these two zones lacks exploration due to thick overburden which makes prospecting, trenching and drilling difficult.

FIGURE 7.15 LITHOLOGY MAP SHOWING THE SG AND WD OCCURRENCES



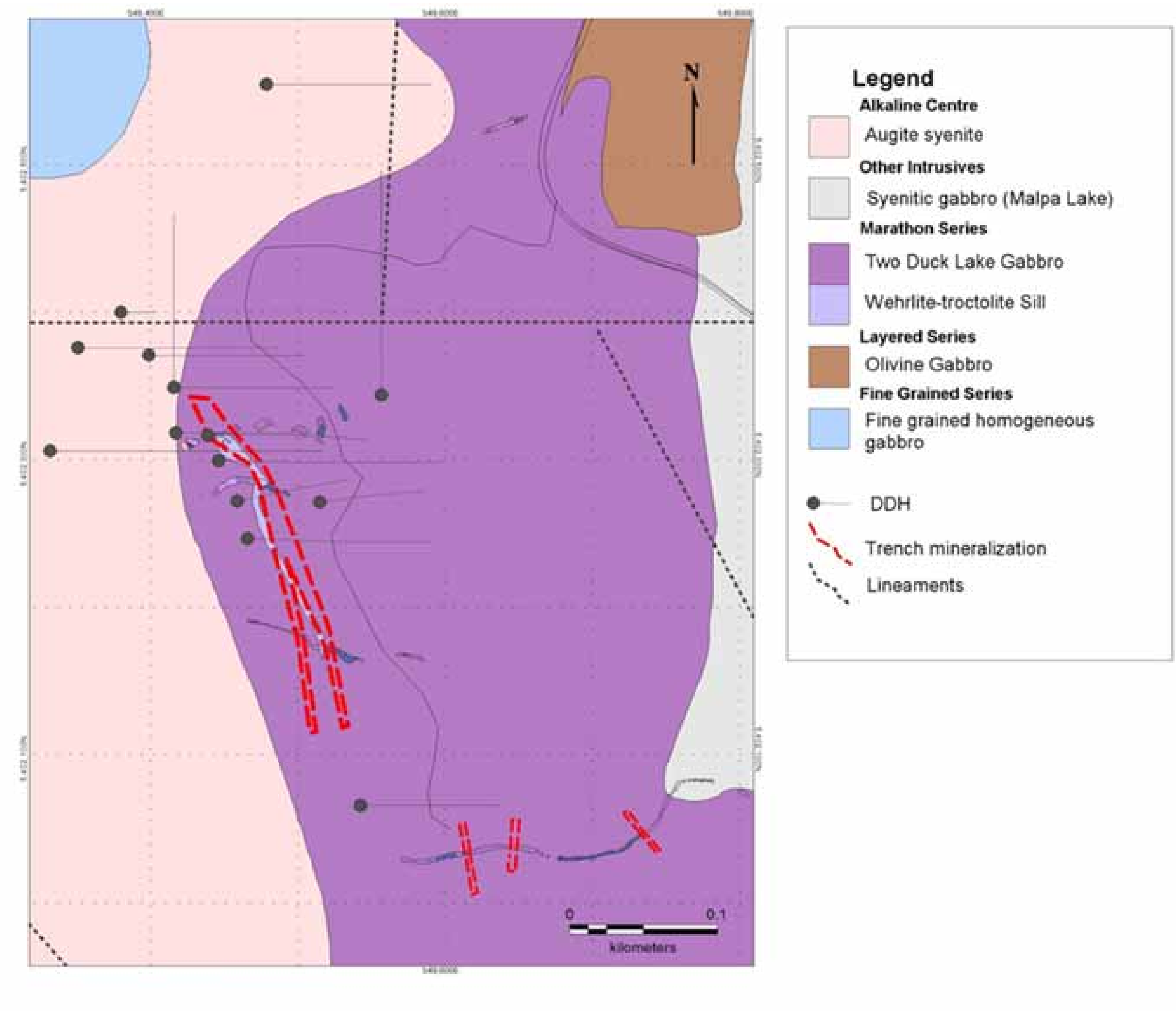
Source: Stillwater Canada Inc. (2014)

7.3.2.1 SG Zone

The SG Zone is characterized by near surface mineralization in Two Duck Lake Gabbro (Figure 7.16), similar to that at the Marathon Deposit. Previous work includes 16 drill holes, 56 grab samples and 600 m of outcrop stripping. The mineralized zone has a strike of 160 to 170 degrees, dips at 30-45 degrees west and extends for 120 m along strike.

The SG Zone includes a thick sequence of Two Duck Lake Gabbro. Mineralization typically occurs in zones where Two Duck Lake Gabbro is intermixed with lenses of oxide ultramafic rocks. The best drill hole intersection to date is shallow with an average grade of 1.33 g/t PGM and 0.27% Cu over 18 m.

FIGURE 7.16 SG OCCURRENCE SHOWING LINEAMENTS, TRENCHES, DRILL HOLES AND SURFACE MINERALIZATION



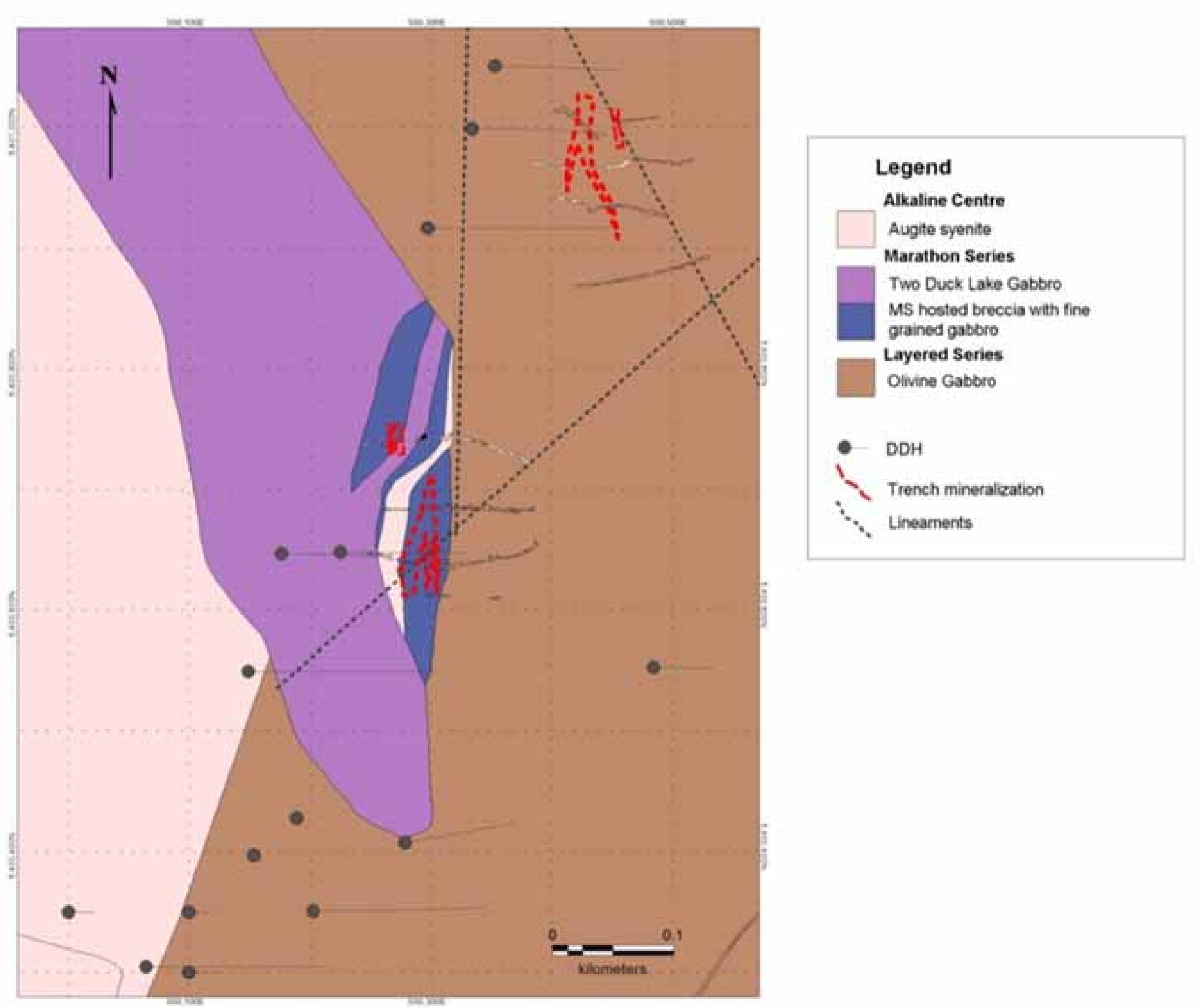
Source: Stillwater Canada Inc. (2014)

7.3.2.2 WD Zone

The WD Zone is located southeast of the SG Zone (Figure 7.17). Previous work includes 15 drill holes; 1,000 m of outcrop stripping and channel sampling; and 48 grab samples. Mineralization in this area occurs at two stratigraphic positions: Two Duck Lake Gabbro and Layered Series Gabbro. These two mineralized zones are easily classified using Cu/Pd ratios. The Cu/Pd for mineralization in the Layered Series is much higher than for mineralization in the TDL Gabbro owing to the negligible Pd values and higher average copper content in the Layered Series rocks.

Strike length for the mineralized zones is 100 m in the Layered series and 150 m in the TDL Gabbro. Both zones are open to the north. All mineralization strikes north-south. Marathon Series mineralization dips steeply west at 70 degrees. Dip for Layered Series mineralization is shallow, at 45 degrees west.

FIGURE 7.17 WD OCCURRENCE SHOWING LINEAMENTS, TRENCHES, DRILL HOLES AND SURFACE MINERALIZATION



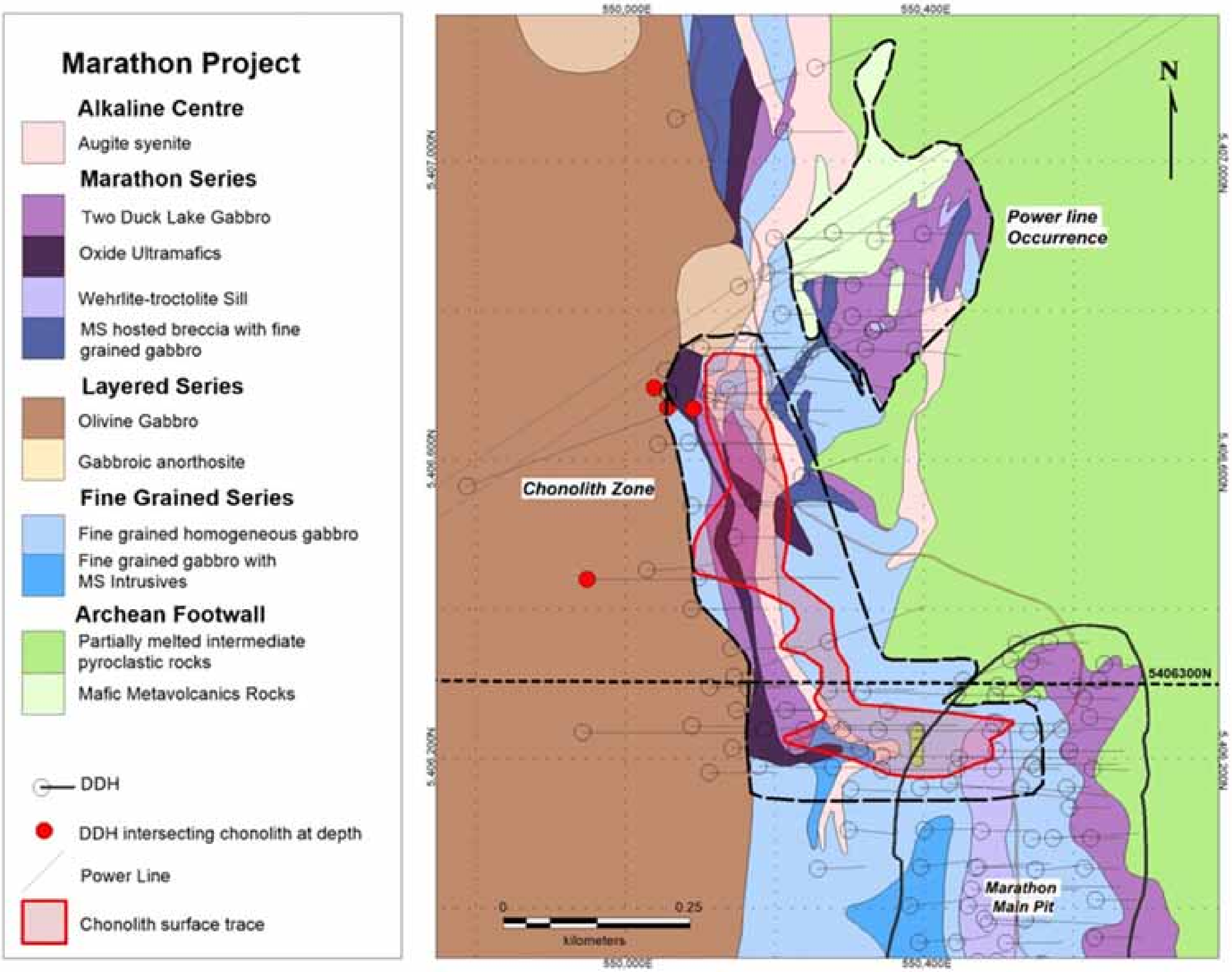
Source: Stillwater Canada Inc. (2014)

7.3.3 The Chonolith Zone

The Chonolith Zone is presumed to be continuous with the north end of the Main Zone, but this relationship will need to be confirmed by drilling. In general, the Main Zone follows the footwall contact north along the edge of the Main pit, but at 5,406,300 N changes direction and continues down dip to the west. The mineralization continues for 350 m west before turning north where it is interpreted to connect to a 200 m deep channel of mineralization referred to as the Chonolith (Figure 7.18).

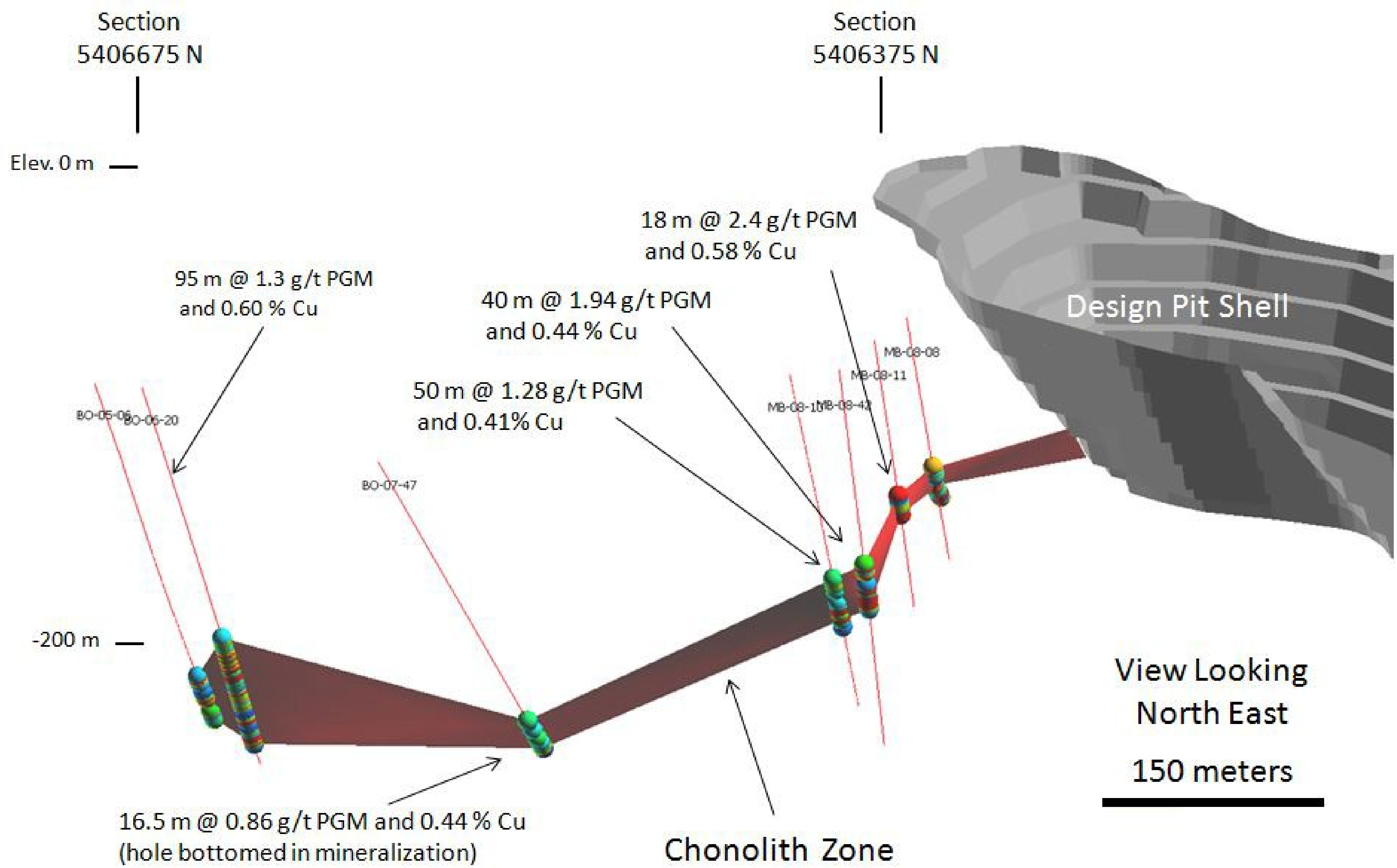
The Chonolith Zone is up to 120 m thick and begins in the north at a depth of 200 m. The north-south trending section of the Chonolith is 500 m long and cut by only four drill holes. The best intersection in the north south section is 1.3 g/t PGM and 0.6% Cu over 95 m (Figure 7.19). The section of the Chonolith that strikes west and connects with the Main Zone inside the Marathon Pit is intersected by a total of 10 drill holes. The best intersection in this area is 1.28 g/t PGM and 0.41% Cu over 50 m.

FIGURE 7.18 NORTH END OF THE MARATHON DEPOSIT SHOWING THE CHONOLITH AND POWER LINE ZONES



Source: Stillwater Canada Inc. (2014)

FIGURE 7.19 3-D VIEW LOOKING EAST WITH DRILL HOLE INTERSECTS OF THE CHONOLITH AND THE MARATHON PIT SHELL

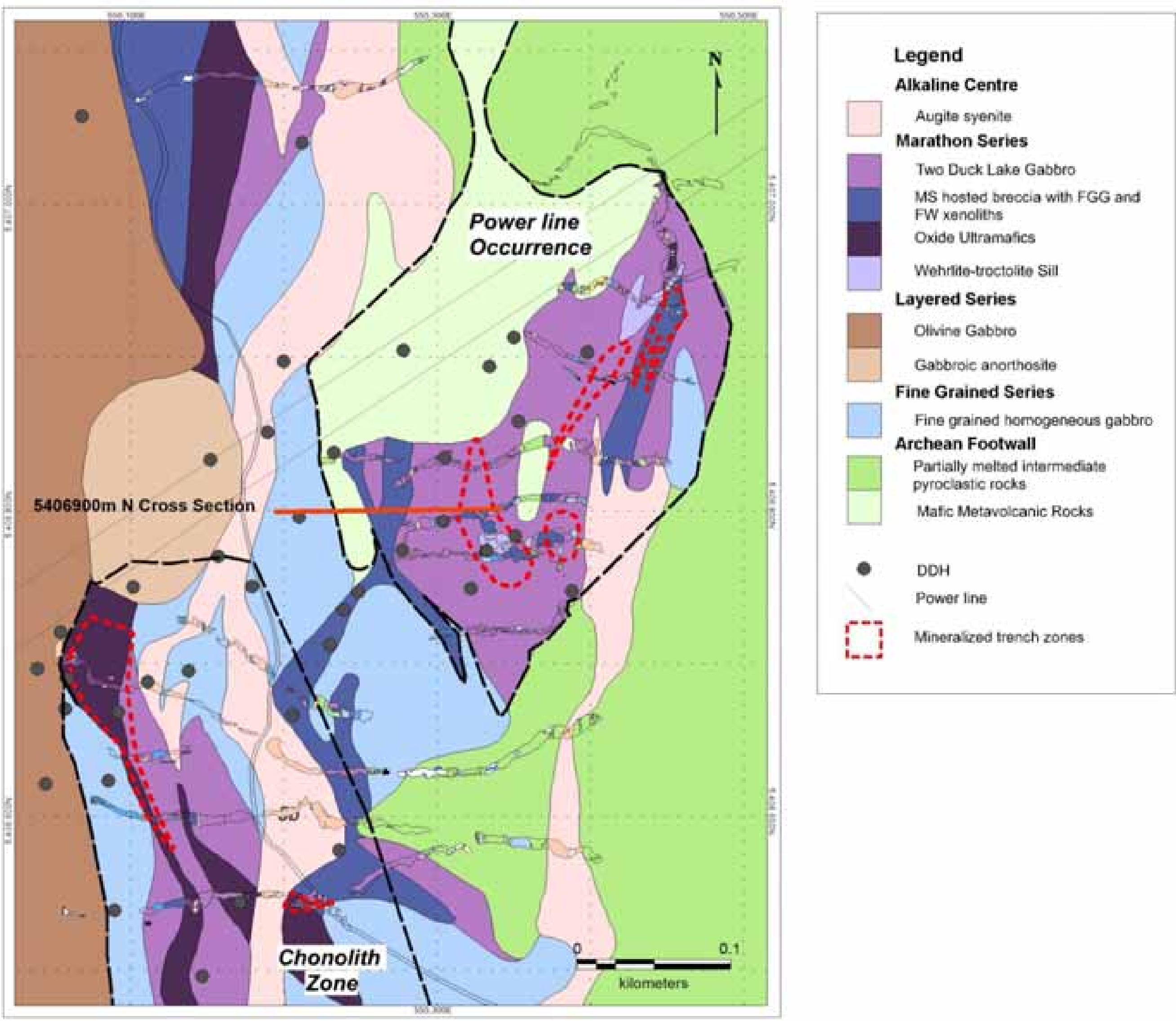


Source: Stillwater Canada Inc. (2014)

7.3.4 The Power Line Occurrence

The Power Line Occurrence, located northeast of the Chonolith Zone, consists of a flat lying bowl shaped body of Two Duck Lake Gabbro that sits in a trough in the footwall (Figure 7.20). The Chonolith Zone and Power Line Occurrence are separated by a shift in the footwall to the east, and a syenite dyke. The Power Line Zone consists of multiple lenses including intervals such as 0.44 g/t PGM and 0.2% Cu over 18 m.

FIGURE 7.20 POWER LINE OCCURRENCE SHOWING TRENCHES AND MINERALIZED SURFACE ZONES



Note: *Mineralized zones defined on the trenches with a cut-off of $12 NSR/t value.*
Source: Stillwater Canada Inc. (2014)

7.3.5 Geordie Deposit

The Marathon Deposit is one of two contact-type PGM-Cu deposits in the Coldwell Complex that have been described in the literature (Good and Crocket, 1994). The second is the Geordie Property which Marathon PGM Corp. acquired in 2008.

The Geordie Deposit is located near the centre of the Coldwell Complex (Figure 7.12). Mineralization occurs along the base of the Geordie Lake Intrusion, a large layered gabbro with a basal zone of heterogeneous augite troctolite and gabbro. A simplified geology map of the Geordie Deposit is shown in Figure 7.21 and a cross section through the middle of the deposit is shown in Figure 7.22.

Exploration on the Geordie Property includes 61 diamond drill holes totaling 9,645 m, trenching, mapping, magnetic and radiometric airborne survey and soil sampling.

An NI 43-101 Mineral Resource Estimate on the Geordie Deposit was published by Marathon PGM Corp. in June 2010. The total Mineral Resource Estimate contains 32.4 million tonnes ("Mt") of Measured and Indicated Mineral Resource at average grades of 0.37% Cu, 0.61 g/t Pd, 0.04 g/t Pt, 0.05 g/t Au, and 2.93 g/t Ag. The Mineral Resource also contains 8.0 Mt of Inferred Mineral Resource at average grades of 0.36% Cu, 0.59 g/t Pd, 0.03 g/t Pt, 0.04 g/t Au, 2.87 g/t Ag.

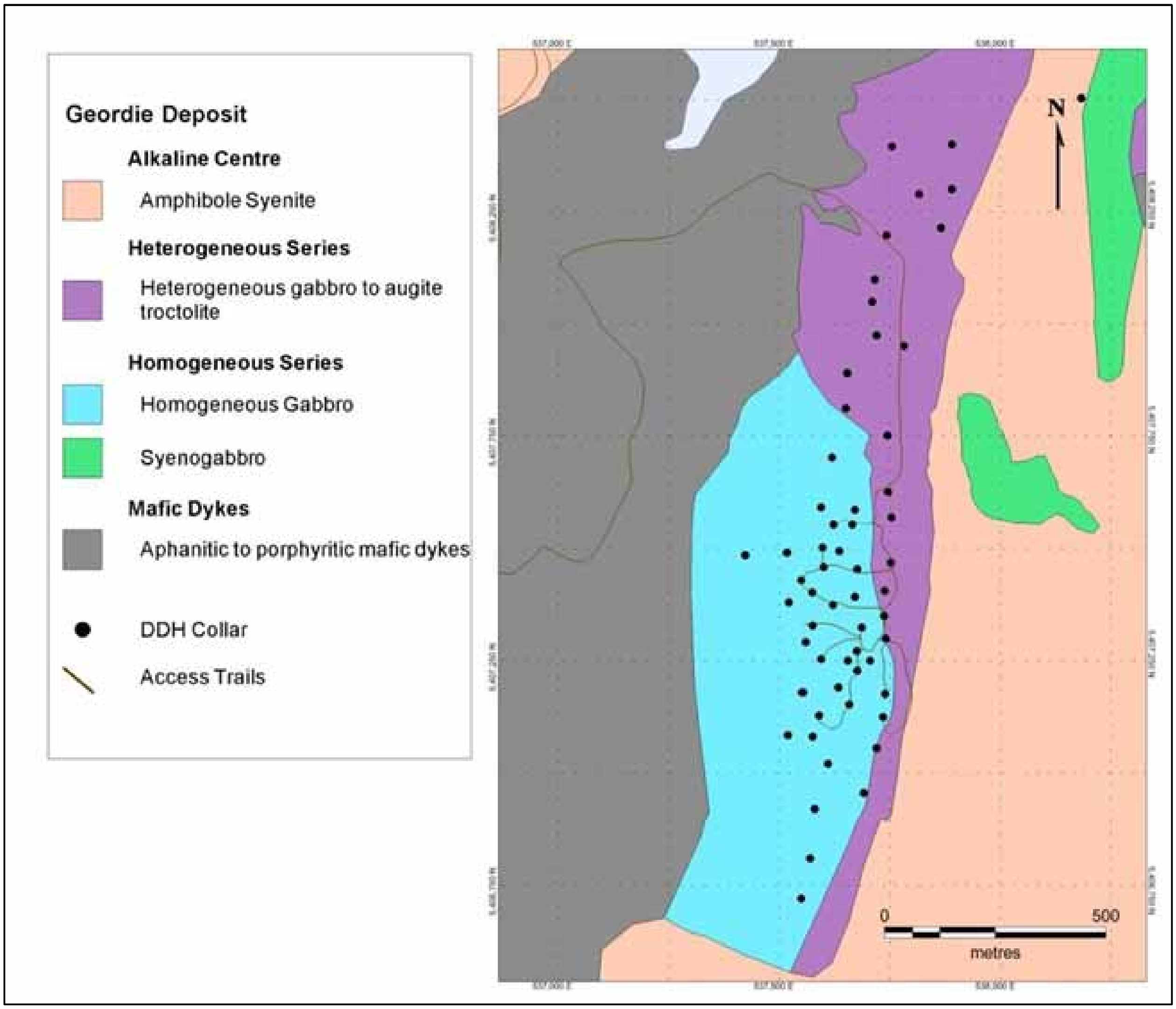
The sulphides consist predominantly of chalcopyrite and bornite, and minor pyrite, millerite, cobaltite, siegenite, sphalerite and galena. Sulphides are disseminated with angular to blebby grain shapes. Thin veins of chalcopyrite occur near the base of the intrusion and also in the underlying syenite.

The mineralization occurs within a thick continuous basal zone that dips 45 to 60 degrees and traced over a strike length of 1.7 km. Minor thin discontinuous zones occur higher up in the stratigraphy.

Drilling has outlined a series of sub-parallel mineralized zones within the gabbroic/troctolite body. Mineralization is mainly chalcopyrite with lesser amounts of bornite, pyrite, magnetite, and supergene chalcocite. Associated with concentrations and disseminated grains of chalcopyrite are a wide variety of platinum-group minerals and precious-metal tellurides, bismuthinites and alloys. In 2001, a series of metallurgical tests indicated average concentrate recoveries of 87% for Cu and 76% for Pd in mineralized zones.

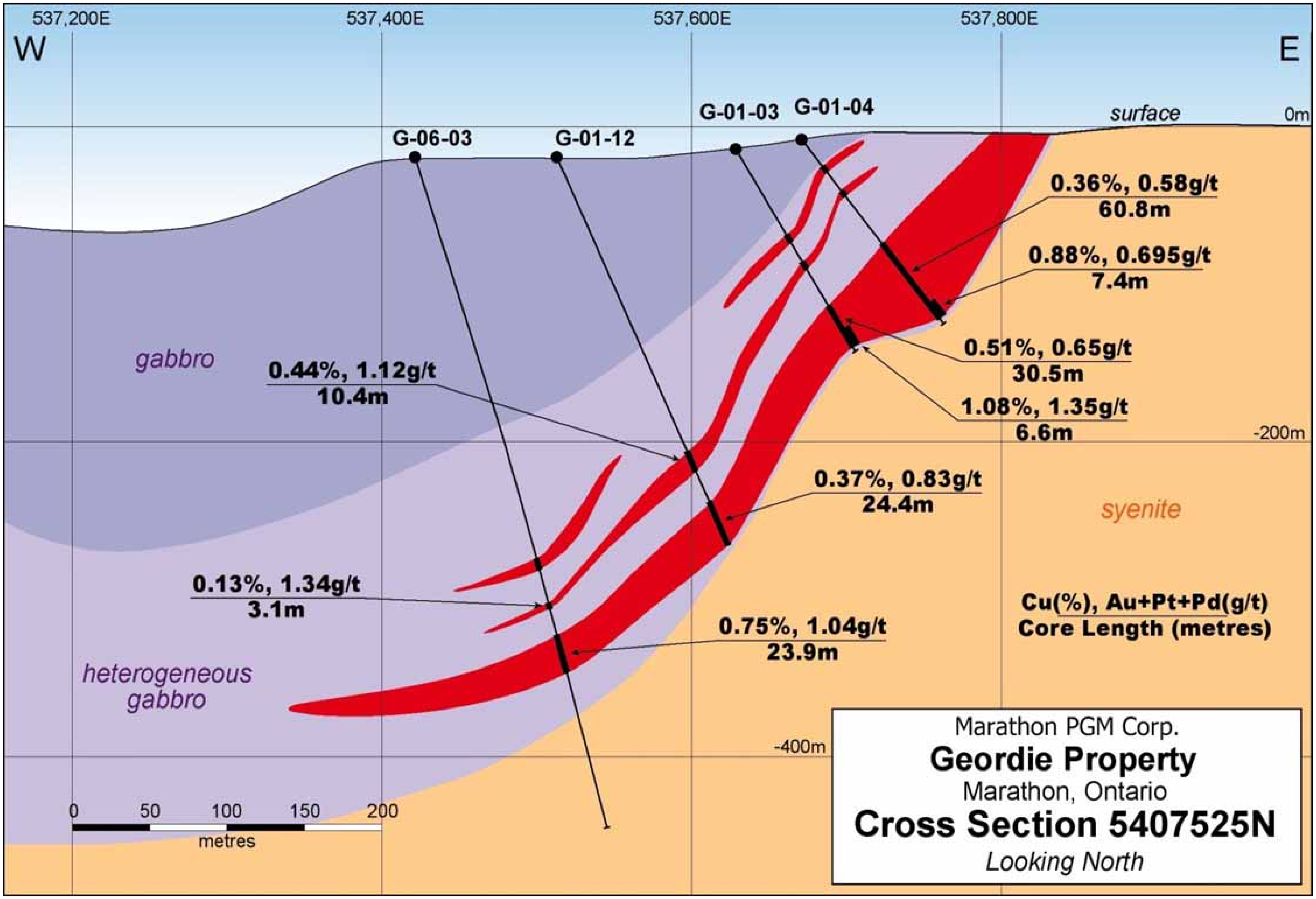
The abundance of Pt is very low, but for samples with greater than 45 ppb Pt or Pd (three times the detection limit of Pd) the average Pd/Pt is 11. There is a strong positive correlation between Cu and Pd and the average Cu/Pd is 6,500.

FIGURE 7.21 GEOLOGIC MAP OF THE GEORDIE DEPOSIT



Source: Stillwater Canada Inc. (2014)

FIGURE 7.22 VERTICAL CROSS SECTION AT THE GEORDIE DEPOSIT (LOOKING NORTH)



Source: Stillwater Canada Inc. (2014)

7.3.5.1 Four Dams Prospect

The Four Dams Prospect is located 4 km northwest of the Marathon Deposit on the northern rim of the Coldwell Complex (Figure 7.12). Four Dams is subdivided into three mineralized zones, as follows: Four Dams North, Four Dams South and Lacobeer Lake (Figure 7.23).

The Four Dams North mineralization occurs in a 100 m thick lens of Marathon Series ultramafic rocks that strikes northwesterly for 350 m and dips 60 degrees to the southwest. The intrusion has a thin marginal zone of melagabbro and a core of apatitic clinopyroxenite to apatitic wehrlite.

Sulphides in the Four Dams North Zone include disseminated to blebby chalcopyrite with lesser pyrrhotite and trace bornite. The mineralization includes intervals such as 0.16 g/t PGM and 0.39% Cu over 74 m and 0.23 g/t PGM and 0.40% Cu over 85 m. Higher PGM grades occur in the central apatitic wehrlite zone.

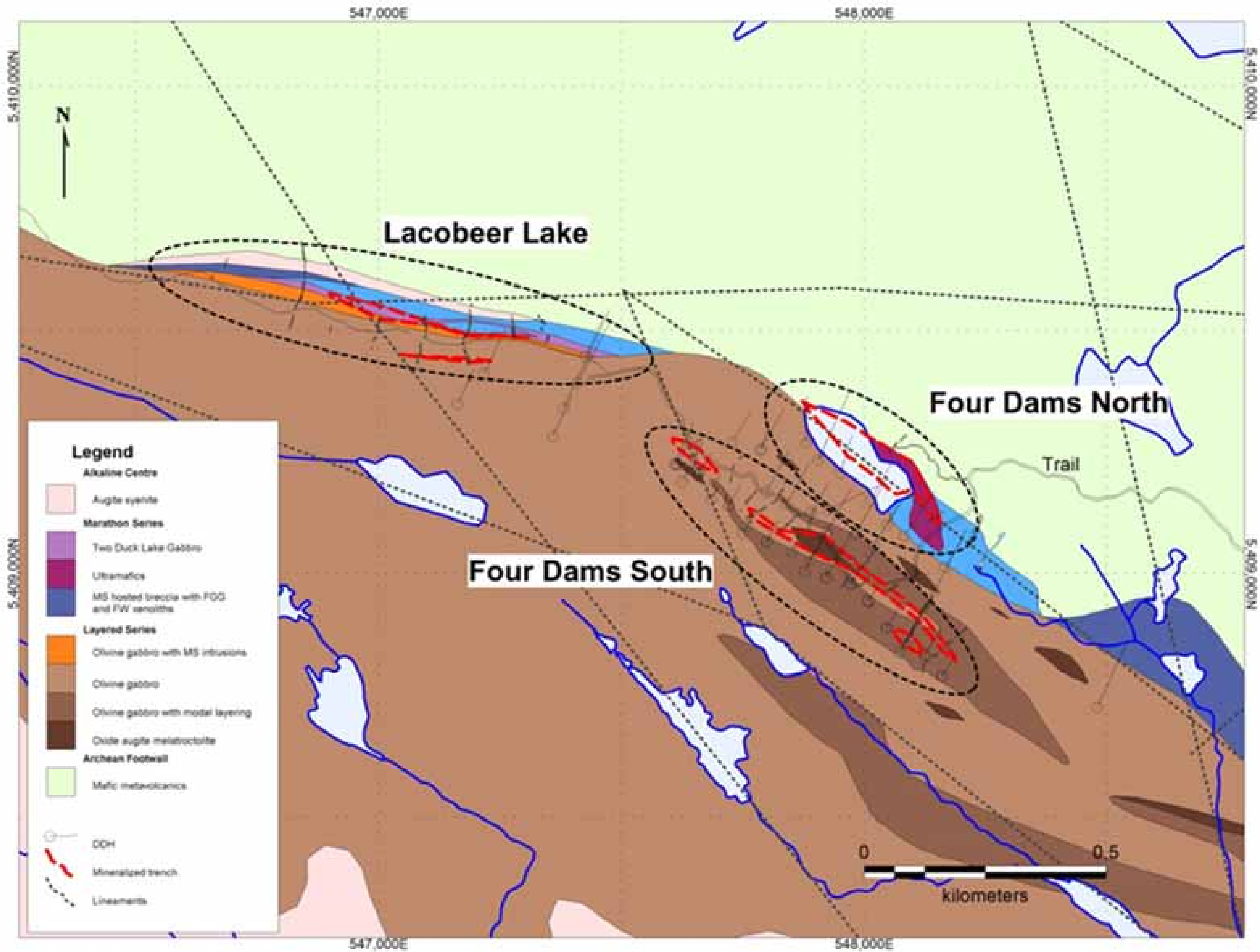
The Four Dams South mineralization is hosted by the Layered Series rocks, located approximately 150 m south of the Four Dams North mineralization. The mineralization occurs in homogeneous or modally layered olivine gabbro inter layered with magnetite rich lenses.

The Four Dams South Zone is continuous for 700 m along strike, dips 40 degrees to the southwest and pinches and swells from thicknesses of up to 50 m and down to 4 m. The zone was defined by 32 short diamond drill holes in 2013. Best intersections include 0.33% Cu over 48 m, but the zone contains only trace Pd.

The sulphide minerals consist of fine-to-medium grained disseminated pyrrhotite and chalcopyrite and are associated with actinolite and albite alteration. The Four Dams South mineralization is believed to be a result of hydrothermal remobilization.

The Lacobeer Zone is poorly defined owing to thick overburden. Work to date includes five trenches but only one of them intersected mineralization. The zone is inferred to be a maximum of 25 m thick on surface with complicated textural relationships within Marathon Series gabbros. Best grab samples from prospecting include 2.6 g/t PGM and 0.53% Cu.

FIGURE 7.23 THREE MINERALIZATION ZONES AT FOUR DAMS



Note: *Mineralized surface zones were determined using projected drill hole data (Four Dams North) and surface sampling.*
Source: Micon (2010)

7.3.5.2 Sally Area 41 Occurrence

The Sally Area 41 includes the area 41 occurrence and is located at the northern margin of the Eastern Gabbro (Figure 7.12). The deposit strikes east-southeast, dips at 45-50 degrees south and extends for over 1.2 km along strike. The deposit is open to the east and west.

A total of 56 holes have been drilled in the Sally Lake Area, of which 45 are drilled into Area 41 (Figure 7.24). The drilling at Area 41 is considered to be sufficient to define the thickness and continuity of the mineralized envelope, but closer spaced drilling is required to define and characterize zones of higher-grade material.

Drilling has thus far intersected four main mineralized horizons at Area 41, referred to in descending order from top to bottom, as Zones 1 to 4 (Figure 7.25).

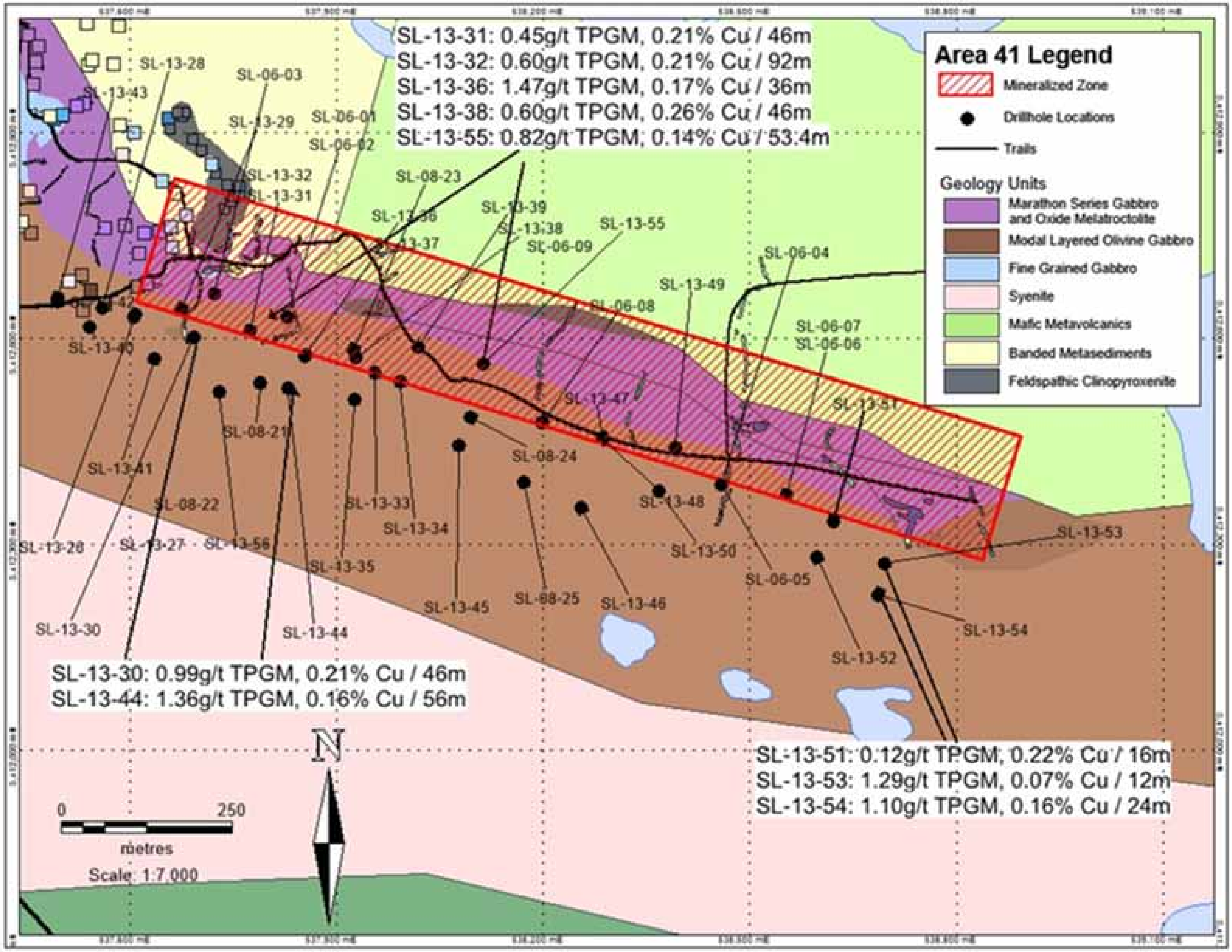
Zone 1: The uppermost mineralized zone in Figure 7.25, contains Cu and trace amounts of Pd, and is commonly less than 10 metres thick. Zone 1 is hosted by Two Duck Lake Gabbro that is intermixed with Marathon Series oxide melatroctolite.

Zone 2: The second mineralized zone is hosted by Two Duck Lake Gabbro that generally includes xenoliths of the Fine Grained Gabbro Series. This second mineralized zone is typically 40 to 50 m thick and contains some of the highest Pd grades in the deposit, particularly at the contact between the Marathon Series (Breccia unit A) and the feldspathic clinopyroxenite unit of the Fine Grained Series (Figure 7.25).

Zone 3: Zone 3 occurs below the feldspathic clinopyroxenite unit and is referred to as the Main zone because it is normally over 40 m thick and is the most continuous over the strike length of the deposit, except at the far west end where mineralization is cut by multiple faults. The mineralization is hosted by Two Duck Lake Gabbro.

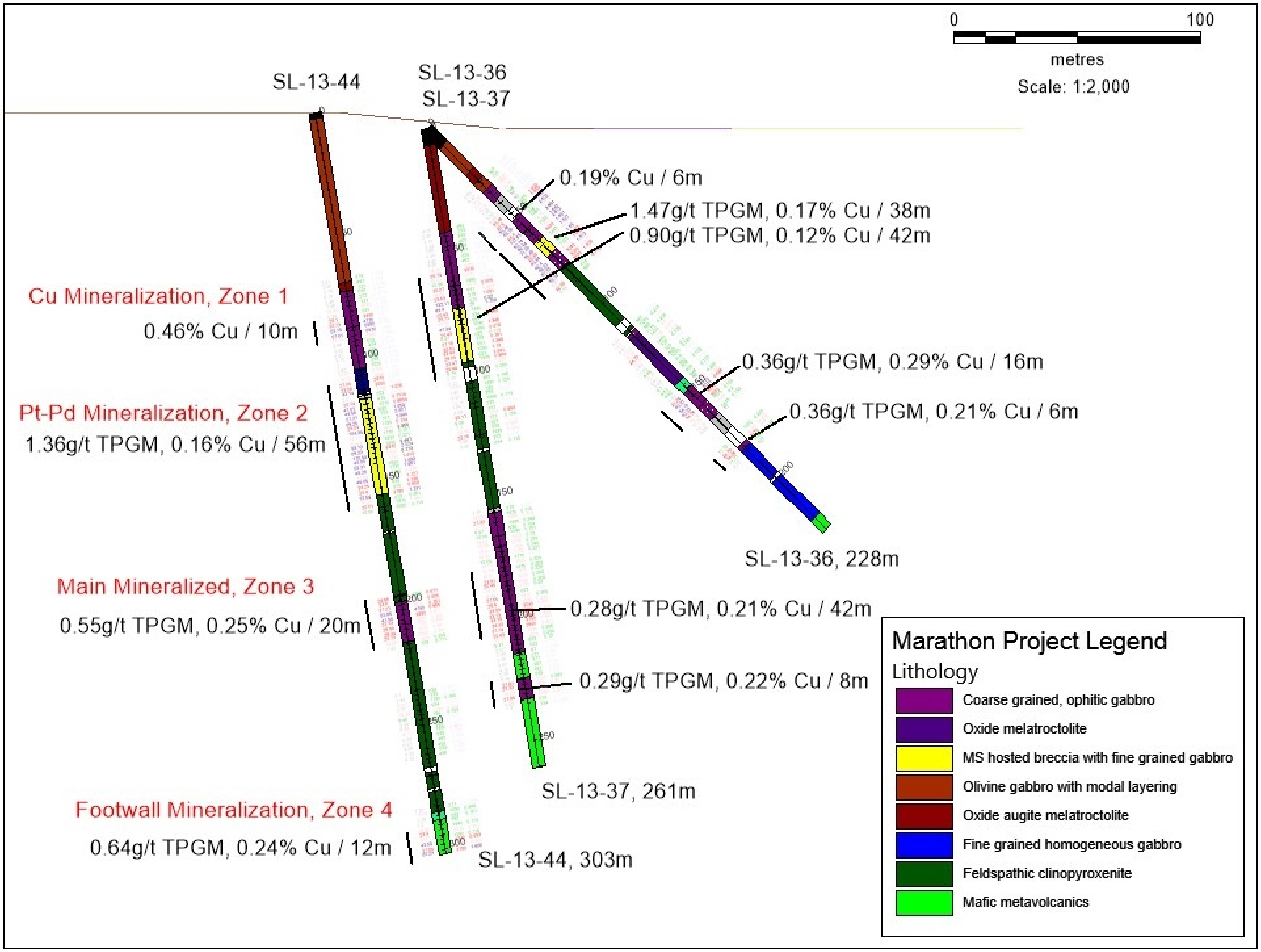
Zone 4: Zone 4 occurs below the main mineralized zone, where Fine Grained Series and/or Archean footwall are crosscut by Marathon Series intrusions. Mineralisation contains Cu and Pd values that are similar to the main zone, but has increased pyrrhotite content, and thus is considered to be lower tenor.

FIGURE 7.24 GEOLOGY MAP OF SALLY AREA 41 OCCURRENCE WITH DRILL HOLE COLLARS AND BEST INTERSECTIONS



Source: Stillwater Canada Inc. (2014)

FIGURE 7.25 VERTICAL CROSS-SECTION OF SALLY AREA 41 OCCURRENCE SHOWING STRATIGRAPHY OF GEOLOGICAL UNITS AND MINERALIZATION



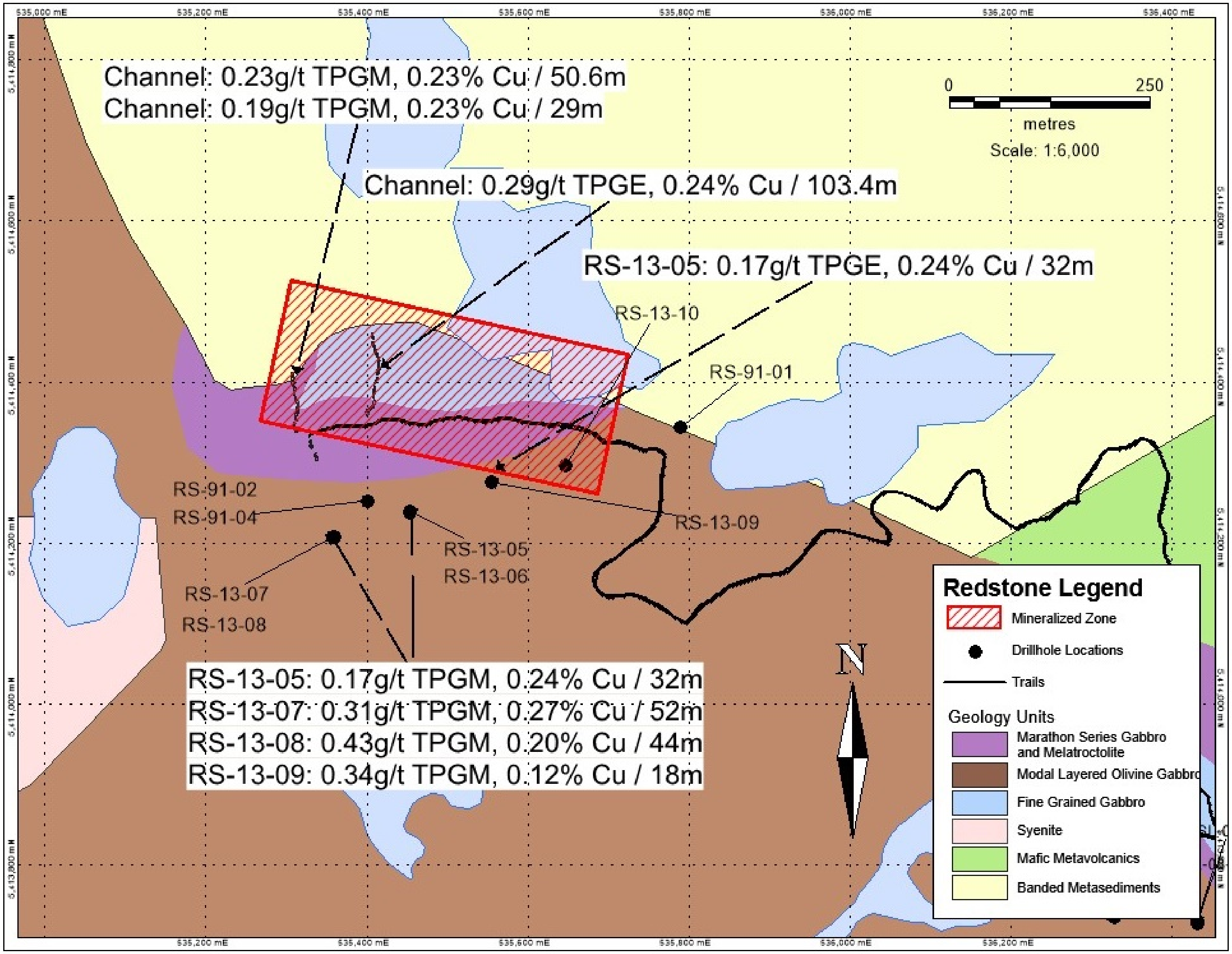
Source: Stillwater Canada Inc. (2014)

7.3.6 Redstone Prospect

The Redstone Prospect is situated along the outer margin of the Eastern Gabbro in the northwest corner of the Coldwell Complex (Figure 7.12). The mineralized zone strikes near east-west, dips between 30 and 45 degrees south and is continuous along strike for 450 m (Figure 7.26). The zone extends down dip for at least 200 m and is open to the west.

The mineralization consists of disseminated chalcopyrite, pyrrhotite and trace bornite and is hosted in a complicated assemblage of Marathon Series rocks. The upper portion of the sequence is dominated by oxide melatroctolite with minor Two Duck Lake Gabbro, and the lower zone is composed predominantly of Marathon Series breccia units. The lower breccia units are composed of Two Duck Lake Gabbro intermixed with oxide melatroctolite and numerous xenoliths of the Fine Grained Series and/or metavolcanic footwall.

FIGURE 7.26 GEOLOGY OF THE REDSTONE OCCURRENCE WITH 2013 DRILL HOLE AND SURFACE CHANNEL ASSAYS



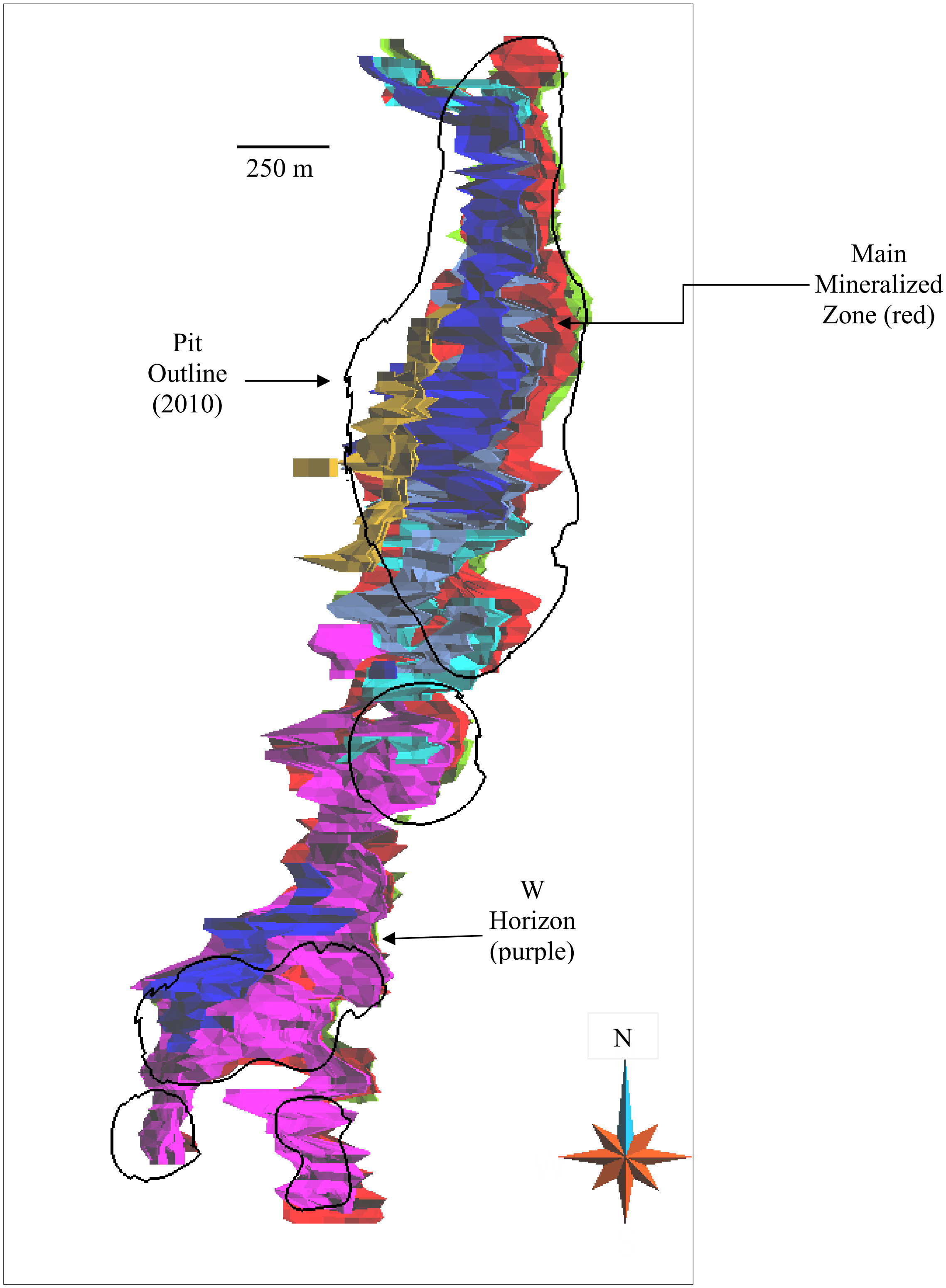
Source: Stillwater Canada Inc. (2014)

7.3.7 The W Horizon

The W Horizon forms a nearly continuous sheet of mineralization that strikes north south for 1.4 km from section 5,403,125 N to section 5,404,525 N and continues down dip for over 650 m. The zone is open at depth. It ranges in thickness from 2 m (minimum sample width) to 30 m and occurs near the top of the mineralized zones (Figure 7.27). The zone is difficult to identify in drill core because it commonly contains only trace sulphides, but if sulphides are present, they consist of chalcopyrite and bornite. Continuity of the W Horizon between drill holes is shown by minimum PGM abundances of 1 g/t and by Cu/(Pt+Pd) ratios less than about 3500.

Several very high-grade lenses ranging from 30 m to 200 m in length occur within the W Horizon. The highest intersection to date contains 107 g/t PGM+Au, 1.04 g/t Rh and 0.02% Cu over 2 m (hole M07-239), but the best intersection contains 45.2 g/t PGM+Au and 0.49% Cu over 10 m (hole M07-306).

FIGURE 7.27 PLAN VIEW OF THE SURFACE MODELS (2012) OUTLINING THE MINERAL RESOURCE FOR THE MARATHON DEPOSIT AND LOCATION OF THE W HORIZON



Note: *The W Horizon is shown in purple.*
Source: *Marathon PGM Corp. (2010)*

7.4 SULPHIDE MINERALIZATION

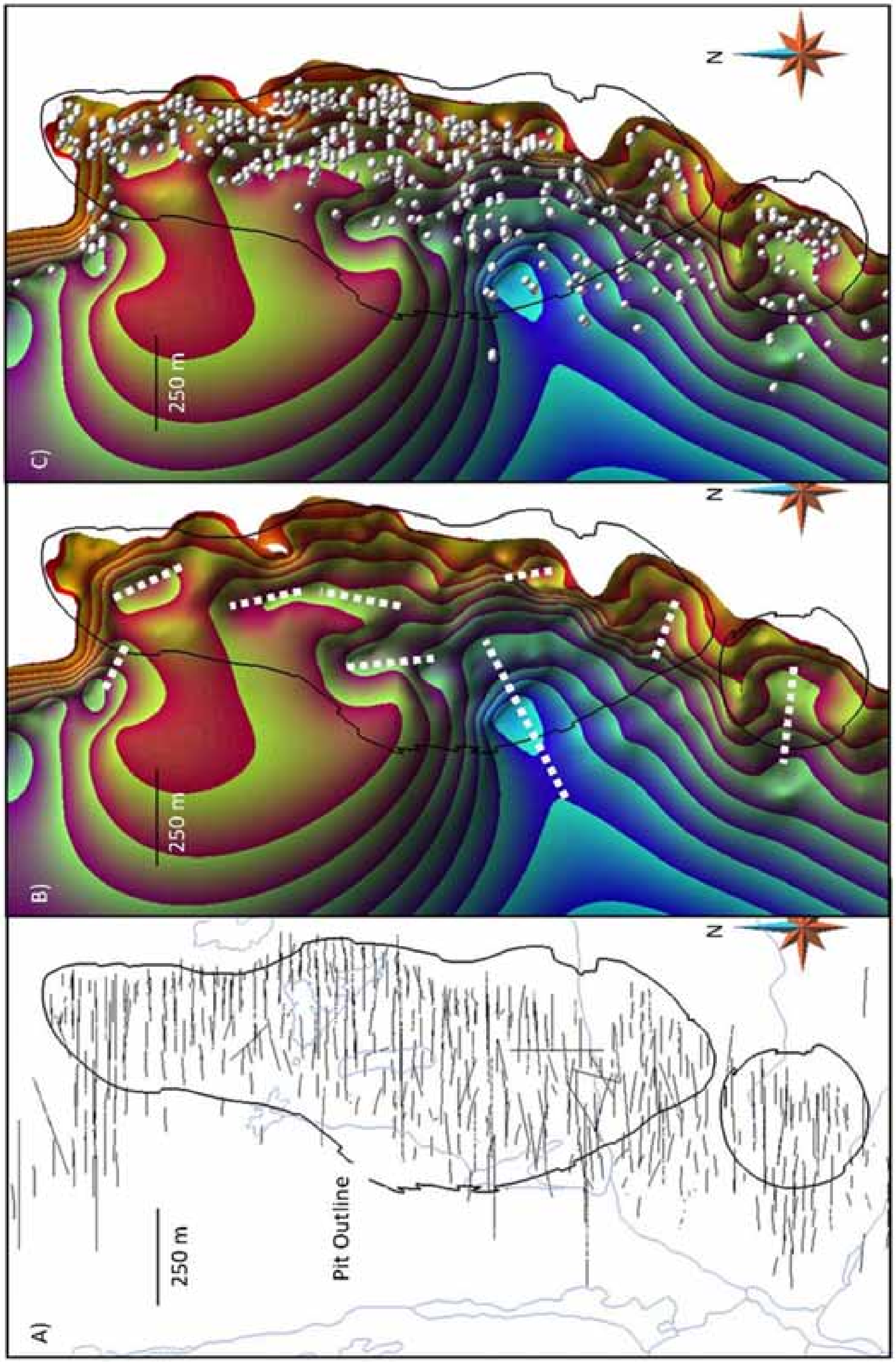
Sulphides in the Two Duck Lake Gabbro consist predominantly of chalcopyrite, pyrrhotite and minor amounts of bornite, pentlandite, cobaltite, and pyrite. They occur in between primary silicates and to a lesser extent in association with secondary calcite and hydrous silicates such as chlorite and serpentine (Watkinson and Ohnenstetter, 1992). Chalcopyrite occurs as separate grains or as replacement rims on pyrrhotite grains. Some chalcopyrite is intergrown with highly calcic plagioclase (An70 to An80) in replacement zones at the margins of plagioclase crystals (Good and Crocket, 1994).

The modal mineralogy of a composite sample that is representative of the Marathon Deposit mineralization (and Two Duck Lake Gabbro) was determined in a QEMSCAN survey by Xstrata Process Support (Kormos, 2008). A total of nine aliquots of material were analyzed. In decreasing order of abundance, the sulphide component of the composite sample consists of 2.75% pyrrhotite, 0.79% Cu-Fe sulphides (chalcopyrite and bornite), 0.09% pentlandite and trace amounts of pyrite, galena and sphalerite.

The relative proportions of pyrrhotite and chalcopyrite vary significantly across the deposit, but in general, the sulphide assemblage changes gradually up section from the base to the top of mineralized zones. Sulphides at the base of the TDL Gabbro consist predominantly of pyrrhotite and minor chalcopyrite but the relative proportion of chalcopyrite increases up section to nearly 100% chalcopyrite near the top. In the W Horizon, sulphides consist mainly of chalcopyrite and bornite and minor to trace amounts of pentlandite, cobaltite, pyrite and pyrrhotite.

There is a relationship between mineralization and the paleo topography of the footwall contact as demonstrated in Figure 7.28. For example, mineralization is best developed within basins or troughs (Figure 7.28 b and c) of the footwall and thins or pinches out above prominent footwall ridges. It is important to note that although the mineralized zones are almost continuous from the north to south extents of the Deposit, assays with the best grades (combined Pd+Cu recalculated and presented as net smelter royalty) in Figure 7.29, fall along trends that mimic the alignment of troughs or ridges.

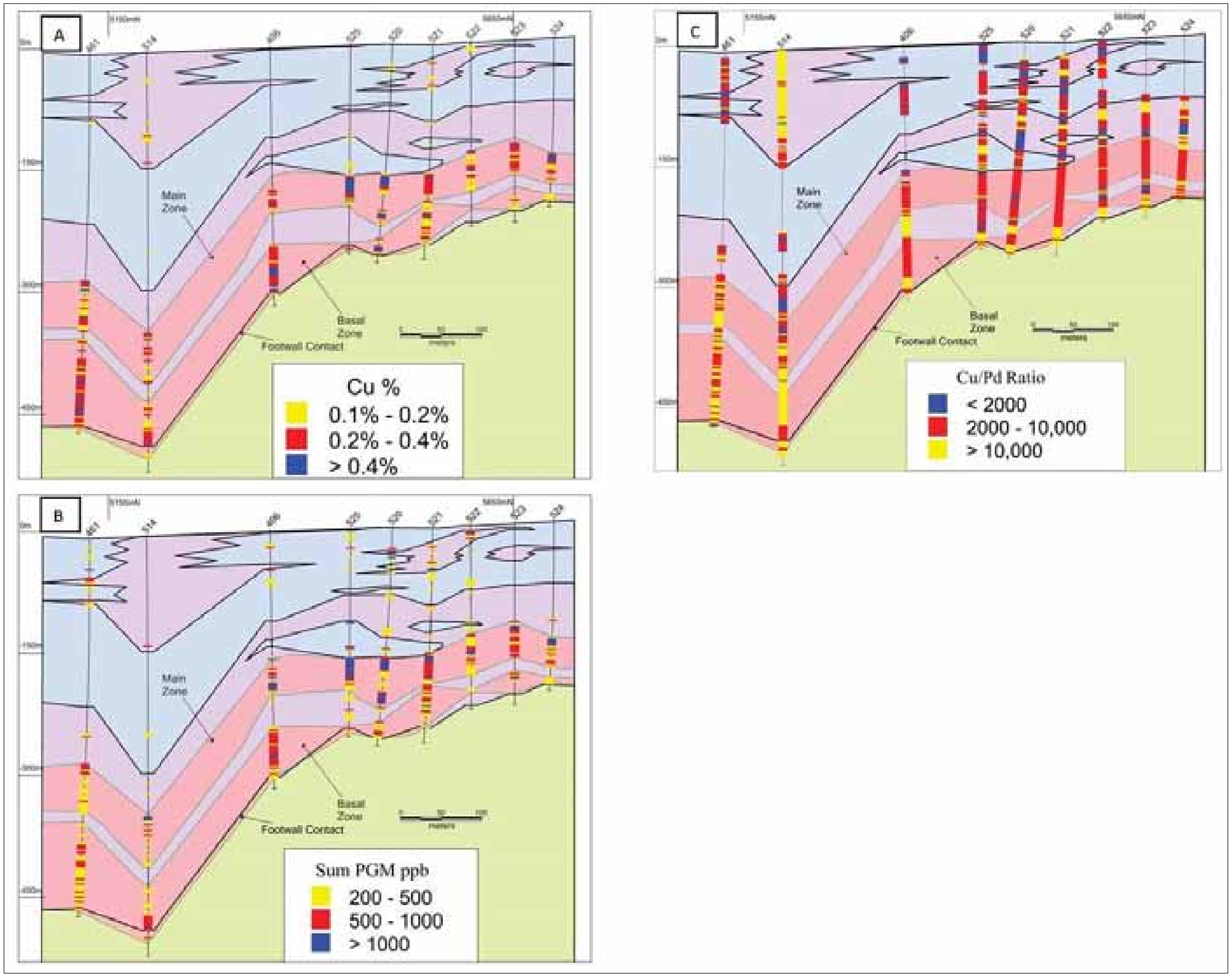
FIGURE 7.28 PLAN VIEWS OF THE PROPOSED PIT OUTLINE (2010) BENEATH THE MARATHON MAIN ZONE



Note: Figure A) includes all diamond drill holes and outlines for small lakes and streams. Figure B) includes the contoured 3-D surface model for the footwall contact. The white dashed lines highlight the trough axes in the footwall. Figure C) includes white spheres that represent drill hole assays that are filtered to show only those with Net Smelter Royalty values greater than $75/t.

Source: Marathon PGM Corp. (2010)

FIGURE 7.29 MARATHON DEPOSIT NORTH-SOUTH VERTICAL CROSS SECTION ALONG THE WESTERN EDGE OF THE MAIN OPEN PIT (LOOKING WEST)



Note: *Figures show the Main and Footwall zones hosted within TDL Gabbro. Detailed geology along the drill stems for this section is located in Figure 7.5. Numbers along the top of drill stems are drill hole numbers (example, M11-514). Numbers at top of figure are deposit section indicator (example 5150mN corresponds to 5405150 m N, NAD 27). Figures A, B and C contain assay values along the drill stem for Cu, Pd and Cu/Pd, respectively.*

Source: Marathon PGM Corp. (2010)

7.4.1 Platinum Group Minerals

The following summary was prepared from the detailed petrographic and SEM studies conducted at Lakehead University by Liferovich (2006, 2007). Two sample groups from the Main Zone and W Horizon are described and compared. A total of 2,304 grains from 55 thin sections were analysed and 39 different platinum group minerals and gold, silver alloys were identified.

The grain size distribution for platinum group minerals in the Main Zone is similar to that in the W Horizon (Table 7.2). In general, approximately 60% of PGM grains are less than 5 micrometers (microns) in size. Forty percent of the PGM are greater than 5 microns.

The type and proportion of host minerals for the platinum group minerals are presented in Table 7.3. The dominant host minerals for the PGM in both areas are sulphides and other platinum group minerals. Similar proportions occur within the boundaries of plagioclase crystals, but note that the 25% proportion is by count and not by volume (mass) and it is expected that the volume percent of grains in plagioclase margins is less than 25% because included grains are smaller. The relatively high proportion (38%) of PGM in hydrous silicates (chlorite and serpentine) in the Main Zone contrasts with the much lower proportion in the W Horizon (4.3%).

The suite of platinum group minerals in the Main Zone is very different from that of the W Horizon (Table 7.4). Indeed, of the 12 dominant platinum group minerals that comprise 85% of the PGM reported in the W Horizon, none were found in the Main Zone. Conversely, of the 10 dominant minerals found in the Main Zone (91% of all PGM found), only 2.6% occurred in the W Horizon. This remarkable difference in the ranges of PGM for the two zones implies different conditions of Platinum Group mineral crystallization.

TABLE 7.2
SIZE DISTRIBUTION FOR PLATINUM GROUP MINERALS IN THE MAIN ZONE COMPARED WITH THE W HORIZON

Zone	No. of Grains	< 5 Microns (%)	5-10 Microns (%)	10-20 Microns (%)	>20 Microns (%)
Main	573	64.9	16.9	12.5	5.7
W Horizon	1731	58.3	27.1	9.6	5.0

Source: *Ruthart (2013)*

TABLE 7.3
PROPORTION OF PLATINUM GROUP MINERALS SPATIALLY ASSOCIATED WITH SILICATES, SULPHIDES OR OTHER PGMS

Zone	No. of Grains	Plagioclase Boundaries (%)	Sulphides (%)	Other PGMs (%)	Hydrous Silicates (%)
Main	573	22.4	34.9	4.36	38
W Horizon	1731	25	53.7	16.5	4.3

Note: *This does not represent volume percent as grains included in plagioclase boundaries are smaller than those located elsewhere.*
Source: *Ruthart (2013)*

TABLE 7.4
DOMINANT PLATINUM GROUP MINERAL PHASES IN THE MAIN ZONE COMPARED TO THE W HORIZON

Mineral	Formula	W Horizon	Main Zone
Zvyagintsevite	$(Pd,Pt,Au)_3Pb$	41.8%	-
Palladinite	(Pd,Cu,Au)O	15.5%	-
Telargpalite	$(Pd,Ag)_3Te$	5.5%	-
Skaergaardite	PdCu	3.9%	-
Kotulskite, Pb-rich	Pd(Te,Bi,Pb)	3.8%	-
Isoferroplatinum	$(Pt,Pd)_3(Fe,Cu)$	3.7%	-
Keithconnite, Pb-rich	$Pd_{3-x}(Te,Pb,Sb)$	3.5%	-
Tetraferroplatinum	PtFe	3.4%	-
Plumbopalladinite	Pd_3Pb_2	1.2%	-
Vysotskite	PdS	1.2%	-
Laflammeite	$Pd_3Pb_2S_2$	1.1%	-
Atokite, Pb-rich	$(Pd,Pt)_3(Sn,Pb)$	0.9%	-
Au, Ag and alloys		7.0%	3.3%
Stilwaterite	Pd_8As_3	0.4%	0.9%
Arsenopalladinite	$Pd_8(As,Sb,Pb)_3$	0.3%	1.7%
Cotunnite, Ru-rich	$(Pb,Ru)Cl_2$	-	2.1%
Hessite	Ag_2Te	-	3.7%
Hollingworthite	(Rh,Pt,Pd)AsS	0.2%	5.6%
Sperrylite	$PtAs_2$	1.1%	6.3%
Kotulskite	Pd(Te,Bi)	-	9.9%
Sobolevskite	PdBi	0.1%	10.1%
Mertierite-II	$Pd_8(Sb,As,Pb)_3$	0.3%	16.1%
Kotulskite-Sobolevskitess	$Pd_2Te(Bi,Pb)$	0.2%	34.9%

Note: *A total of 2,304 grains from 55 thin sections were analysed from the two zones. Other minerals with less than 1% distribution in both zones were excluded from this list.*
Source: *Ruthart (2013)*

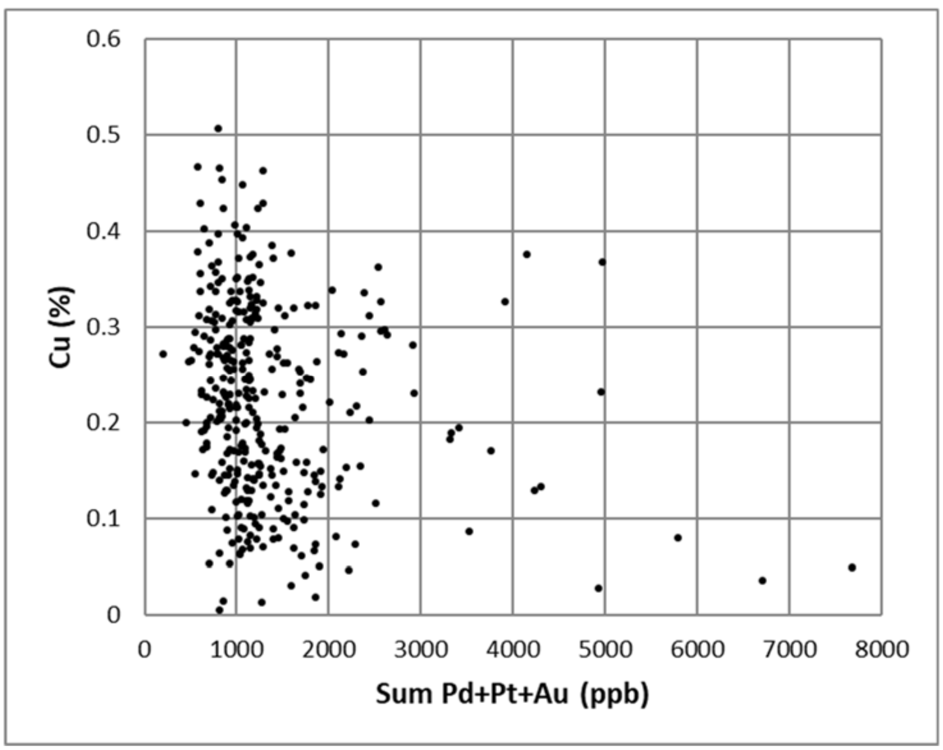
7.4.2 Distribution of Cu, Ni And PGM within the Marathon Deposit

A very prominent feature of the Marathon Deposit is the local and extreme enrichment of PGM with respect to Cu and Ni. For example, high grade samples from the W Horizon that contain between 25 and 50 g/t Pd (1 gram per tonne = 1 part per million) might also contain very low concentrations of Cu and Ni (<0.02%). The separation of PGM from Cu is observed throughout the deposit but is most common near the top of the mineralized zone. In the southern half of the deposit, PGM enrichment is most prominent in the W Horizon.

The separation of PGM from Cu is shown by the very poor correlation between Cu and the sum of PGM for the average of 356 intersections in the Deposit (Figure 7.30). The disparity in the relative behavior of PGM and Cu and Ni is unusual for contact type magmatic sulphide deposits. Barrie et al. (2002) attributed the PGM enrichment to high temperature zone refining process, but this process is inconsistent with mass balance calculations and the close correlation between Pd and the other platinum group metals.

An understanding of the separation of PGM from Cu is important to define the model for deposition of the Marathon deposit. In this section, the trends for S, Cu, Ni and PGM concentrations in these zones are described and three mechanisms for metal concentration during magmatic processes are proposed.

FIGURE 7.30 PLOT OF CU VS. THE SUM OF PD+PT+AU FOR AVERAGE VALUES OF 356 DIAMOND DRILL HOLE INTERSECTIONS (NSR CUT OFF OF $15/TONNE)



Note: *Each point represents an intersection of between 4 and 160 m thickness. All of the points represent 14,485 m of drill core or approximately 8,000 samples.*

Source: Marathon PGM Corp. (2010)

7.4.3 Metal Ratios for the Marathon Deposit

Inter element ratios for metals that show positive and significant correlation are calculated for a subset of samples representative of the Marathon Deposit (Table 7.5).

TABLE 7.5
CALCULATED RATIOS FOR CU, NI AND THE PLATINUM GROUP METALS

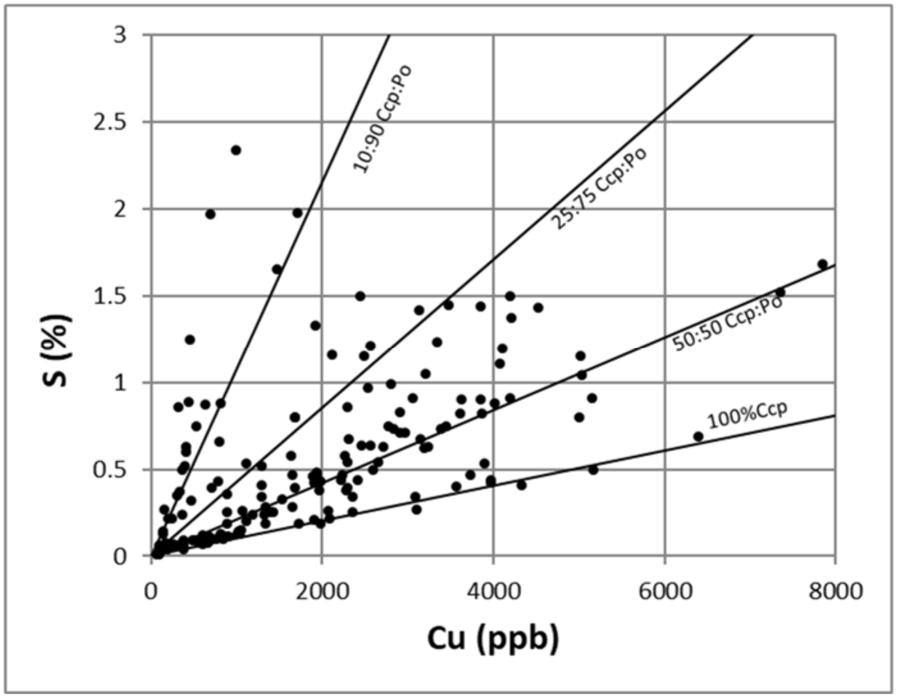
Ratio	Average	Standard Deviation	Minimum	Maximum	No. of Samples
Cu/Ni	14.5	2.8	8.2	21	40
Pd/Pt	2.99	1.02	0.83	9.2	8,663
Pd/Rh	40	19	10	84	32
Pd/Ir	910	636	147	2,573	28
Pd/Au	9.6	6.6	0.3	80	8,663

Note: *Cu/Ni ratio calculated for samples with >3,000 ppm Cu. Pd/Pt ratio calculated for intersection data. Pd/Rh and Pd/Ir calculated using high precision and high accuracy data by Good (1993) and 10 high grade samples analyzed by (Activation Labs).*
Source: *Generation Mining (2019)*

7.4.4 Distribution of Cu in Two Duck Lake Gabbro

The sulphide assemblage in the Marathon Deposit is comprised predominantly of chalcopyrite and pyrrhotite with minor pentlandite and bornite. Chalcopyrite is the dominant copper mineral and bornite occurs locally, particularly in the W Horizon. In general, sulphides at the base of the Main Zone are comprised of pyrrhotite and the proportion of chalcopyrite increases up section. On average, the majority of mineralized samples contain greater than 25% chalcopyrite and less than 75% pyrrhotite as shown in Figure 7.31. Samples with the highest concentrations of PGM fall along or close to the curve representing 100% chalcopyrite.

FIGURE 7.31 SULPHUR VS. COPPER FOR SAMPLES REPRESENTATIVE OF MARATHON MINERALIZATION



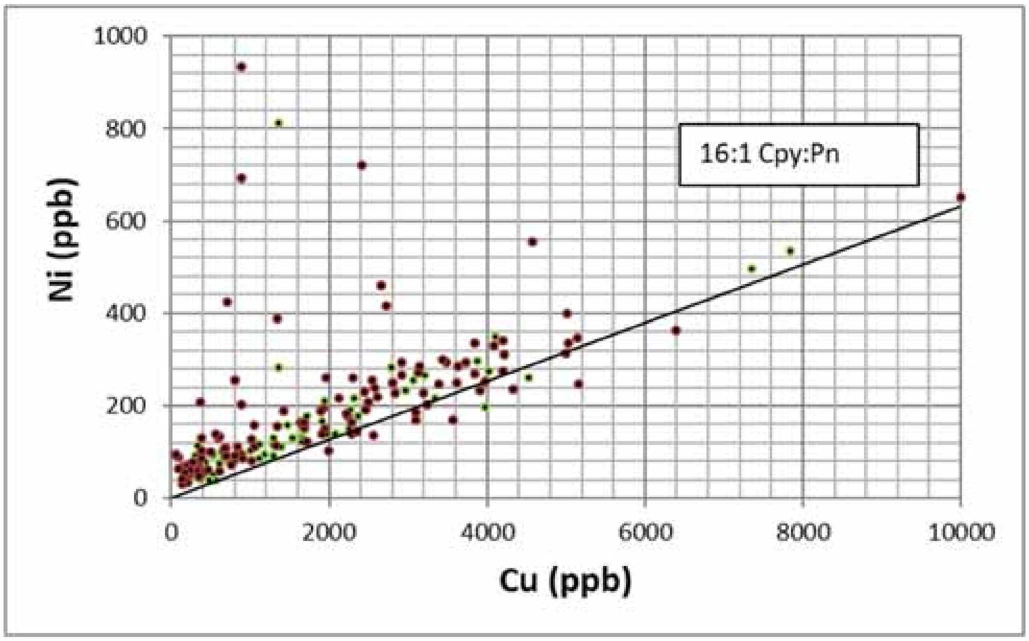
Note: *The lines represent the location where samples with the specified chalcopyrite: pyrrhotite ratios would plot.*
Source: Marathon PGM Corp. (2010)

7.4.5 Distribution of Ni Relative to Cu

Pentlandite is the dominant nickel-bearing mineral but is present as a minor component of the sulphide assemblage. Based on whole rock data for Ni vs. Cu, as shown in Figure 7.32, the chalcopyrite to pentlandite ratio for mineralized samples is relatively constant and is approximately 16:1. For whole rock data where Cu is >3,000 ppm, the Cu/Ni ratio is relatively constant at 14.5 (Table 7.5). A small proportion of samples in Figure 7.32 contains higher nickel and would therefore have a higher proportion of pentlandite than a 16:1 ratio, but this is unusual. Inspection of the data set for the entire Deposit reveals that the abundance of nickel is normally less than about 1200 ppm and rarely greater than 1,500 ppm.

In Figure 7.32 the abundance of nickel where the abundance of copper is 0% corresponds to the amount of nickel (60-100 ppm) held by olivine and clinopyroxene. The nickel content of olivine, as measured by Good (1993) for samples in the Main Zone and Ruthart (2013) for samples in the W Horizon, is between 400 and 600 ppm.

FIGURE 7.32 PLOT OF NI AGAINST CU FOR A SUBSET OF MAIN ZONE SAMPLES FOR WHICH S (WT %) WAS DETERMINED

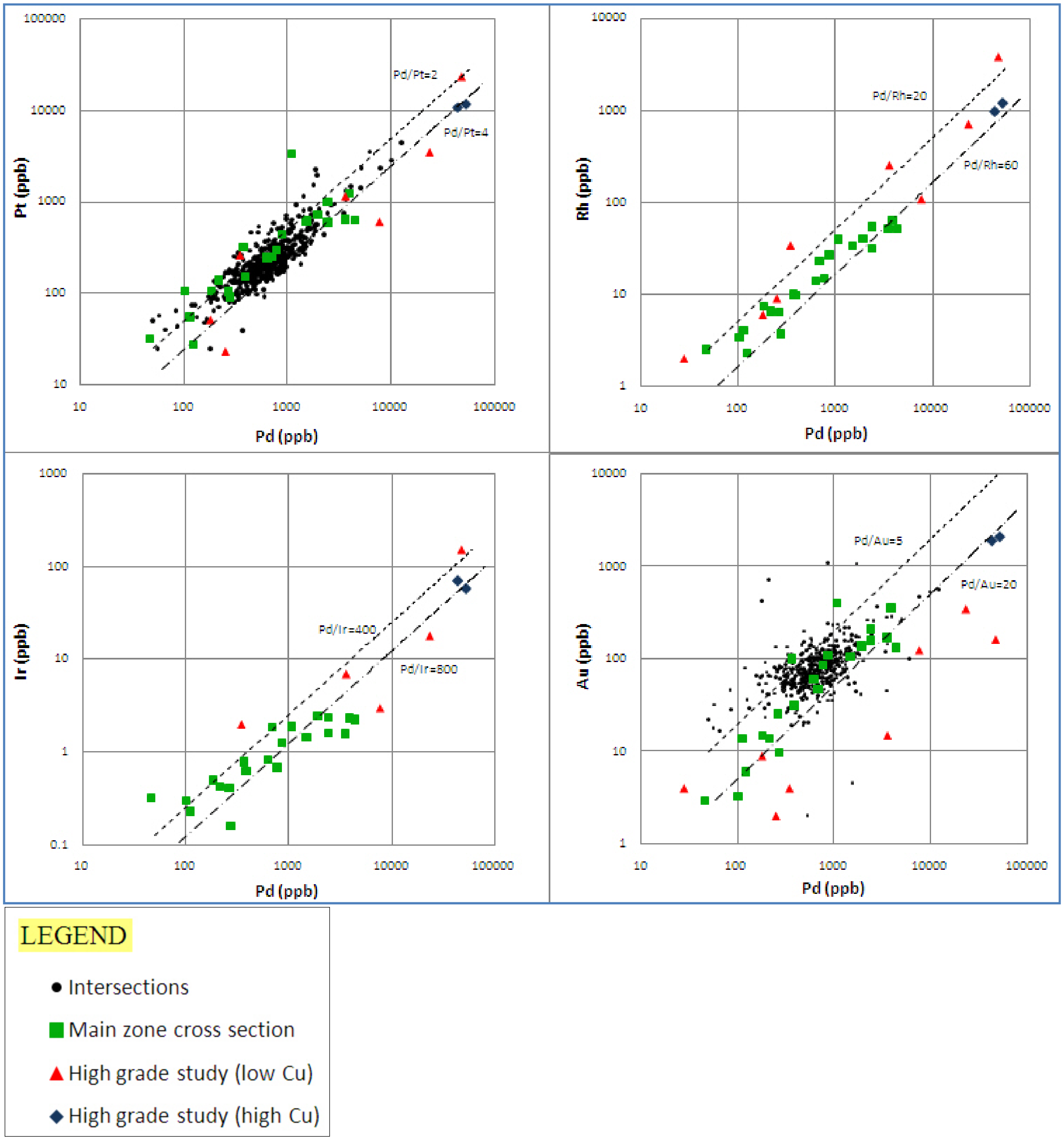


Note: *In general, the nickel content increases with increasing Cu. The majority of samples lie along a trend parallel to a calculated line representing samples with 94% chalcopyrite and 6% pentlandite or an approximate ratio of 16:1.*
wt % = weight percent.
Source: Marathon PGM Corp. (2010)

7.4.6 Distribution of Platinum Group Metals (PGM)

There is a strong and positive correlation between Pd and the other platinum group metals (Pt, Rh and Ir) and Au for all types of mineralization in the Marathon Deposit (Figure 7.33). In Figure 7.33 the majority of data fall between the curves for various metal ratios. The calculated average values for Platinum group metal ratios are presented in Table 7.5.

Figure 7.33 Plot of Pd vs. Rh, Ir and Au for Representative Sample Groups of the Marathon Deposit



Note: *Intersections are averages of drill core intervals of between 4 and 160 m of mineralization. Main Zone cross section samples were analyzed by Good (1993). Ten high-grade study samples are subsamples of 2 m thick, high grade intersections (analyzed by Activation Labs). Low Cu samples represent 50 cm splits from interval at 184-186 m in hole M-07-237 which contained 121 ppm Cu. High Cu samples are 10 cm of quartered core that were selected from the interval between 152-156 m in hole M-07-306 which contained 0.8% (8,000 ppm) Cu. The Main Zone cross section samples and high-grade study samples are considered to be high precision and high accuracy analyses.*

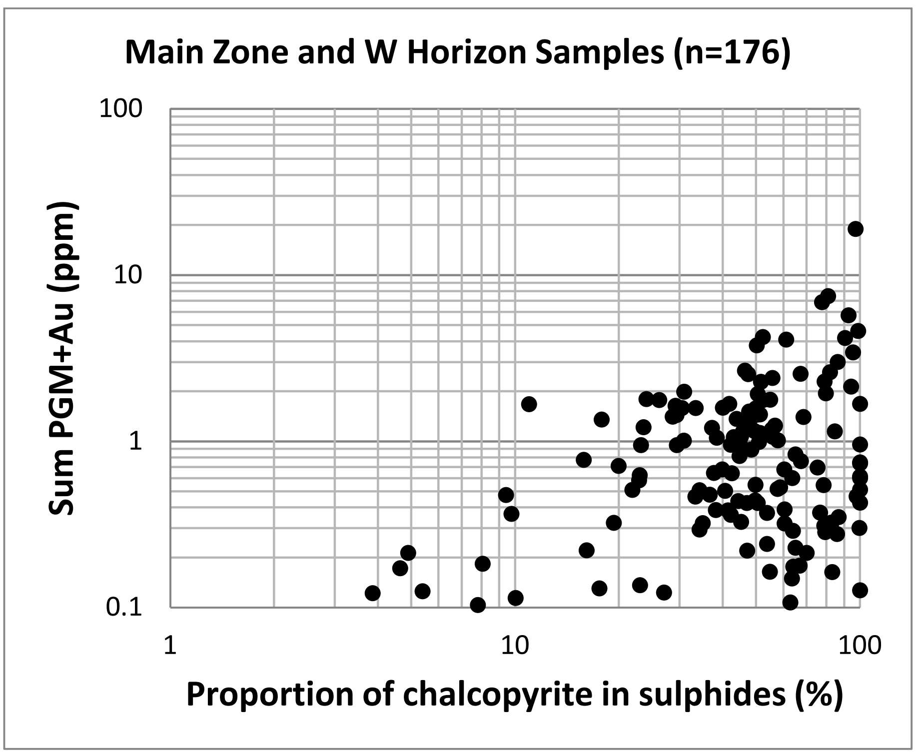
Source: Marathon PGM Corp. (2010)

7.4.7 Relationship Between Sulphide Assemblage and PGM

The composition of the sulphide assemblage is in general indicative of PGM enrichment. For example, a pyrrhotite rich sulphide assemblage is typically poor in PGM whereas chalcopyrite rich (up to 100%) or bornite bearing sulphide assemblages are typically high in PGM. This general field relationship is verified in Figure7.34 where the values for the sum of PGM + Au are highest in samples with high calculated proportions of chalcopyrite in total sulphides. Note this relationship is different than that shown in Figure 7.37 where it was shown that there is no correlation between Cu and Pd. Also note that the increasing proportion of chalcopyrite is not always a sign of increasing PGM+Au.

That there is a relationship between chalcopyrite and total PGM+Au but no correlation between copper and Pd implies multiple concentrating mechanisms acted to concentrate Cu and PGM+Au.

FIGURE 7.34 SUM OF PT+PD+AU VS. CALCULATED PROPORTION OF CHALCOPYRITE IN SULPHIDE ASSEMBLAGE



Note: *Data set is representative of Main Zone and W Horizon.*
Source: Marathon PGM Corp. (2010)

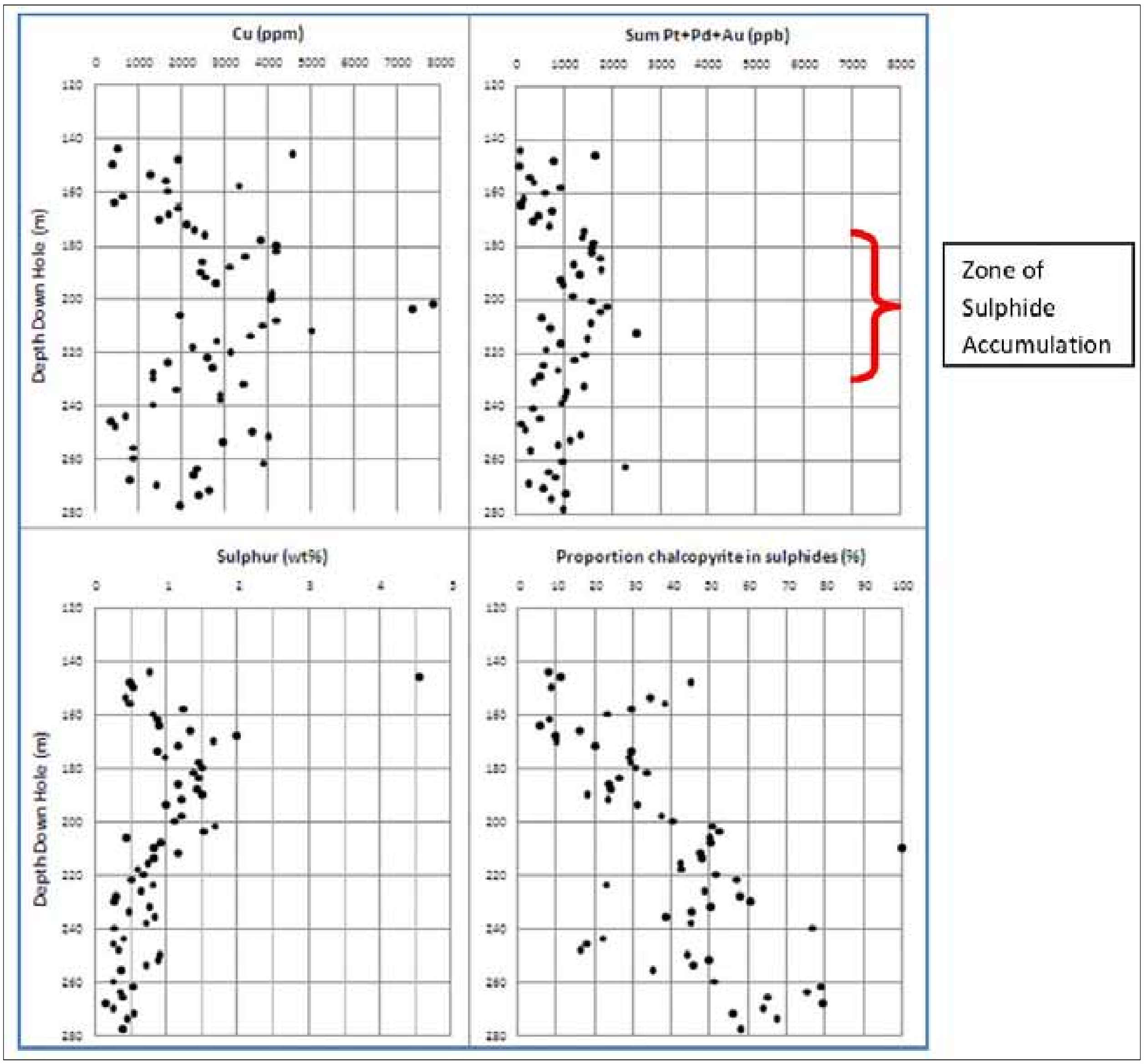
7.4.8 Variations of Cu, PGM, Sulphur and Chalcopyrite Across Mineralized Zones

Two different trends are shown by metal variation plots across mineralized zones in Figures 7.35 and 7.36.

In Figure 7.35 the abundances of S and PGM increase systematically up section and can be attributed to the simple accumulation of sulphides. The change in the abundance of Cu is less obvious, but there is a systematic decrease in the proportion of chalcopyrite in the sulphide assemblage. In summary, the abundance of sulphides and PGM are increasing, but sulphides are becoming more pyrrhotite rich.

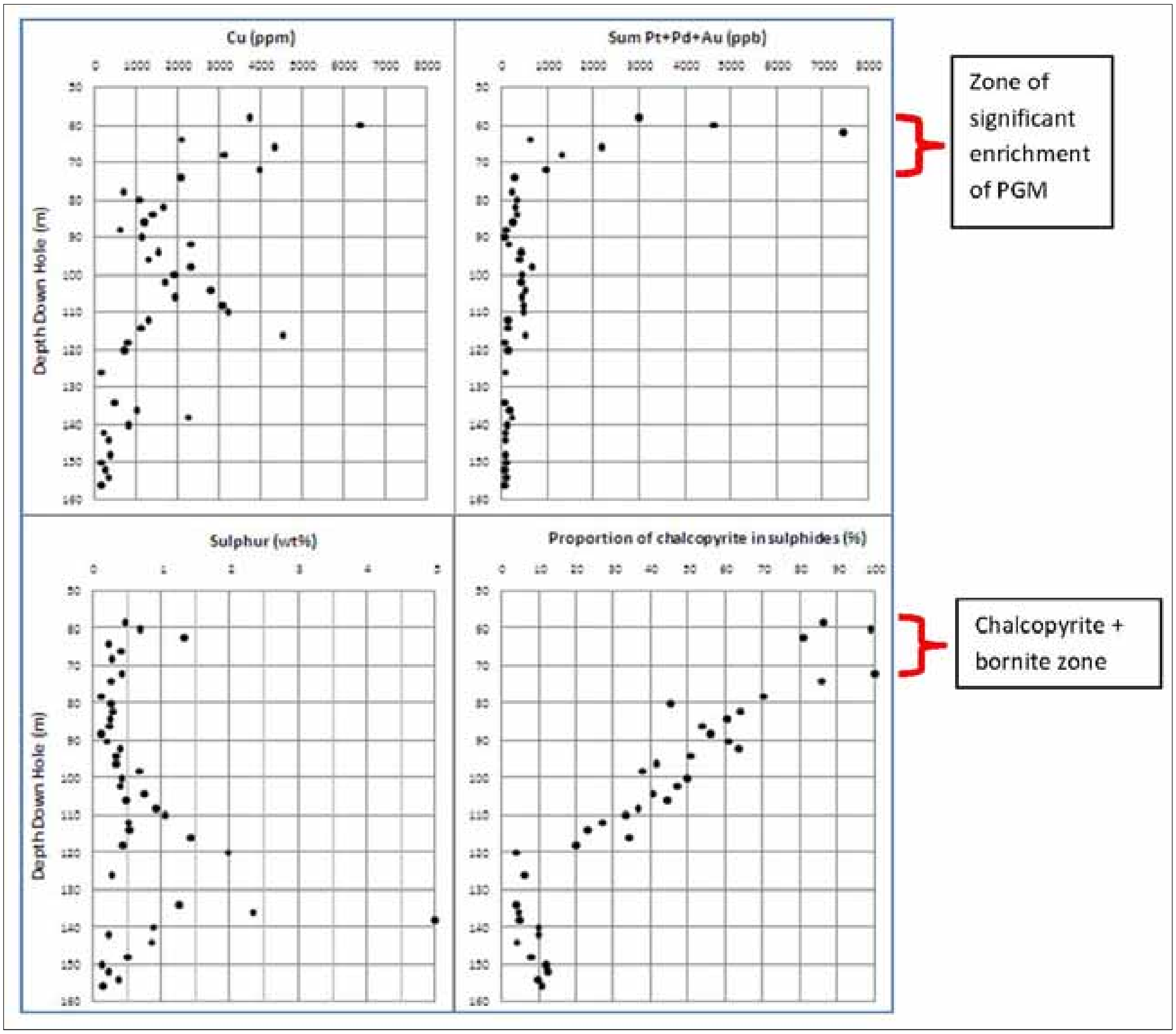
In Figure 7.36 the abundance of Cu and the proportion of chalcopyrite increase up section, the abundance of S stays flat or decreases and the Pd stays low but increases dramatically in the uppermost 12 m where the samples contain the highest proportion of chalcopyrite.

FIGURE 7.35 METAL VARIATION DOWN DIAMOND DRILL HOLE MB-08-10



Note: *Each sample represents 2 m of split drill core. Shows elevated PGM and Cu with increasing sulphur (sulphides) regardless of proportion of chalcopyrite.*
Source: Marathon PGM Corp. (2010)

FIGURE 7.36 METAL VARIATION DOWN DIAMOND DRILL HOLE G9



Note: *Each sample is 2 m of split drill core. Shows significant PGM enrichment in zone with highest proportion of chalcopyrite.*
Source: Marathon PGM Corp. (2010)

7.4.9 Mechanisms for Cu-PGM Concentration in the Marathon Deposit

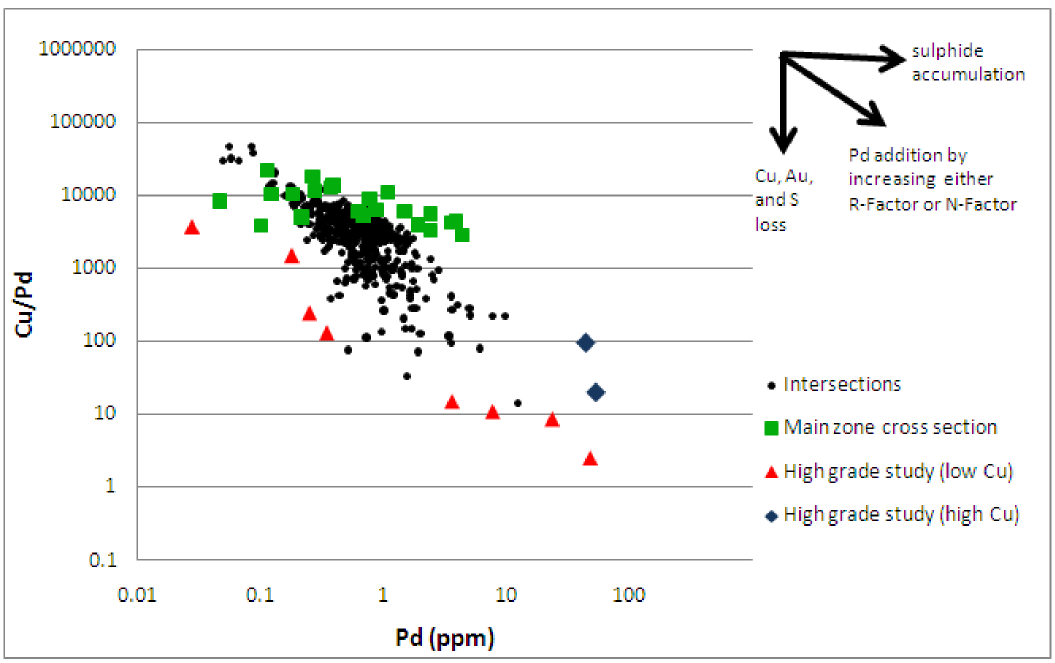
At least three mechanisms for sulphide and PGM precipitation have been proposed for the Marathon Deposit including hydrothermal (Watkinson and Ohnenstetter 1992), magmatic (Good and Crocket (1994a) and zone refining (Barrie 2002). A hydrothermal mechanism at low or intermediate temperatures (<600ºC) is not possible owing to the near total absence of hydrous minerals in the W Horizon and the significant correlations between Pd-Pt, Pd-Rh and Pd-Ir. The high temperature, zone refining mechanism suggested by Barrie (2002) is compelling but there is insufficient experimental evidence to use PGM correlation as support for or against the model, and the implied redistribution and concentration of PGM by zone refining doesn't fit with a mass balance calculation. There is just too much PGM and too little gabbro for a zone refining mechanism to have played a significant role.

Based on petrographic and geochemical evidence, it seems most likely that more than one process operated at high temperatures (>700ºC) to concentrate metals in the Marathon deposit. Three possible mechanisms include:

Accumulation of sulphide liquid in fluid dynamic traps in the magma conduit, Ongoing interaction of sulphides with magma that is flowing through the conduit (N-factor), Removal of S, Cu, and Au from the sulphide assemblage.

The effects of the three mechanisms on the abundance of Cu and Pd are shown in Figure 7.37. The effect of accumulating sulphides is shown by the trend for the Main Zone samples (green squares). The effect of the N-factor is the rapid increase in Pd relative to Cu and pulls samples toward the lower right corner of the figure. The intersection data (dots) represent the average affects due to sulphide accumulation and N-factor enrichment. Finally, the removal of Cu in PGM enriched zones (W Horizon) is shown by the downward displacement of the samples from the low Cu, high grade zone (red triangles). The removal of Au is inferred from the Pd-Au variation diagram in Figure 7.33.

FIGURE 7.37 DOMINANT MECHANISM DIAGRAM FOR CU AND PGM CONCENTRATION

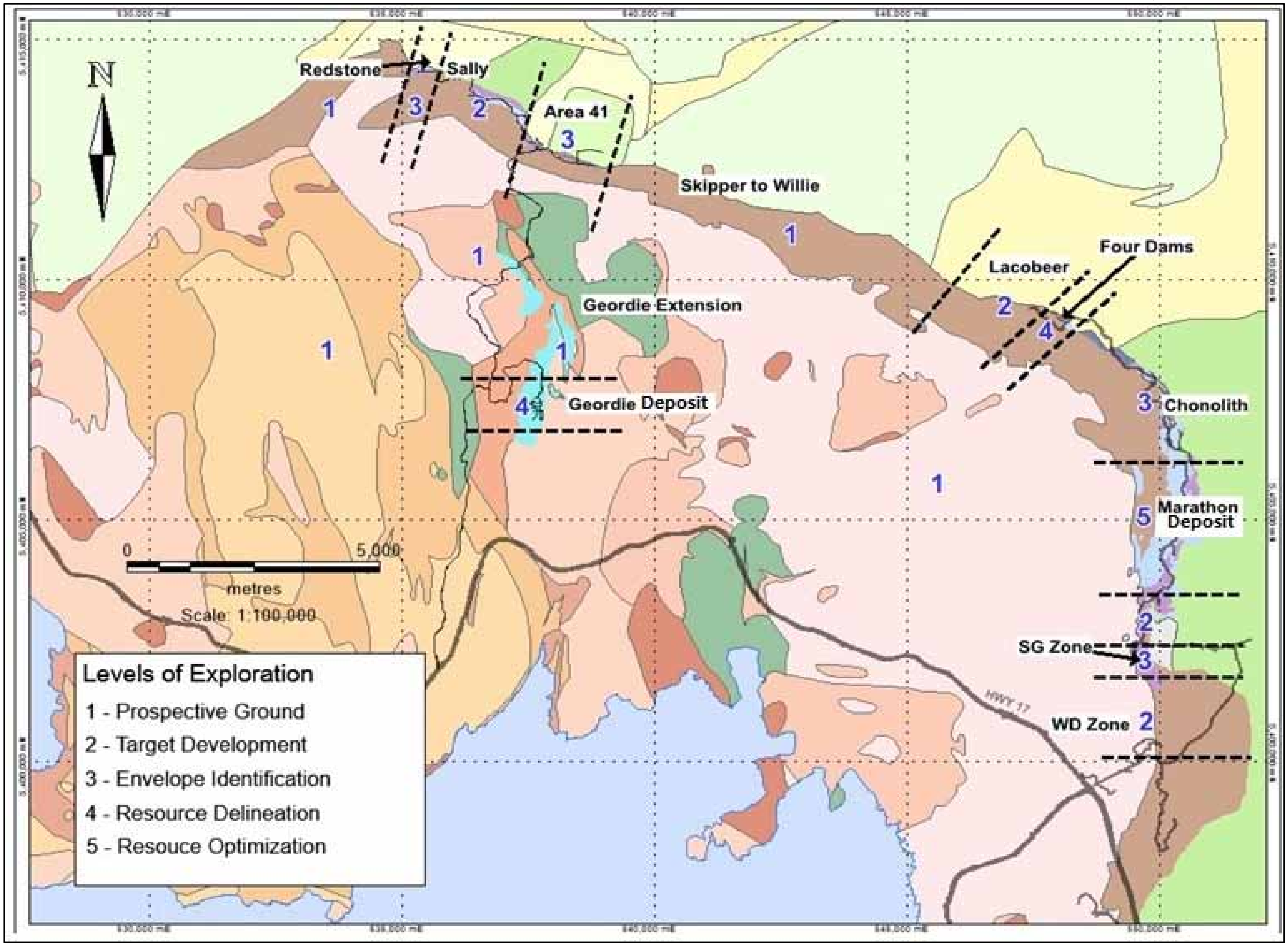


Note: *Figure highlights the effects on metal values of the three dominant mechanisms proposed to explain the concentration of Cu and PGM in the Marathon Deposit*
Source: Marathon PGM Corp. (2010)

7.4.10 Other Mineralized Cu and PGM Prospects in the Coldwell Complex

Figure 7.38 (below) illustrates the locations of all other occurrences found on the Property.

FIGURE 7.38 GEOLOGY MAP OF THE COLDWELL COMPLEX AND LOCATION OF ALL KNOWN PGM-CU OCCURRENCES SHOWING EXPLORATION STATUS OR DEGREE OF DEVELOPMENT AS OF SEPTEMBER 9, 2019



***Source:** Generation Mining Limited (2019)*

8.0 DEPOSIT TYPES

8.1 DEPOSIT TYPE: MAGMA CONDUIT MODEL

The Marathon Deposit is one of several mafic to ultramafic intrusive bodies in the Mid-continent Rift System that host significant copper, nickel or PGE sulfide mineralization. These intrusions include the Yellow Dog peridotite (Eagle Deposit), the Tamarack Deposit, the Current Lake Intrusive Complex (Thunder Bay North Deposit), and the numerous intrusions located along the base of the Duluth Complex.

Intrusion and deposition of sulphides within magma conduits has recently become the dominant mineralization forming process chosen to explain the rift related deposits. For example, a magma conduit deposit model has been proposed for the Marathon Deposit by Good (2010), Thunder Bay North by Goodgame et al. (2010) and the Eagle Deposit (Ding et al., 2012). The magma conduit model has grown in favour since it was proposed to explain deposits in the Noril'sk region, Siberia by Naldrett et al. (1995) and Naldrett and Lightfoot (1999) and the deposits at Voisey's Bay by Li and Naldrett (1999). Further, an important contribution to the understanding of magma conduits and the formation of very high tenor PGM deposits was presented by Kerr and Leitch (2005). They derived a sophisticated geochemical model for an open system multiple stage process expected in a magma conduit. This model was applied to explain the extreme PGM concentrations found in the W Horizon at the Marathon Deposit by Good (2010).

8.1.1 Magma Conduit Model for Marathon Mineralization

In the magma conduit deposit model, the present exposure of the Two Duck Lake and Eastern Gabbro series represents only a fraction of the magma that was generated in the mantle and made its way up through the crust. Most of the magma actually passed through the magma conduits and erupted on the surface as basaltic volcanic flows. The gabbroic units and associated Cu-PGM mineralization represent material that crystallized or settled out of the magma as it moved through the conduit.

It is envisaged that a very large volume of magma, perhaps greater than 10,000 times the volume of gabbro present in-situ, passed through the conduit and formed the Two Duck Lake Gabbro. On the basis of mass balance calculations, and considering the TDL Gabbro is less than 250 m thick, only a very large magmatic system such as this can explain the excessive enrichments of platinum metals with up 45 g/t of combined platinum, palladium and gold over 10 m or the accumulations of disseminated sulphide layers that are up to 160 m thick. Similarly, in the case of the oxide ultramafic intrusions, very large volumes of magma are required to deposit the very thick layers (tens of metres) of massive magnetite (>75% magnetite).

In the magma conduit model, fluid dynamic factors that affected magma flow are relevant to exploration. Features such as pooling of TDL magma in basins within the footwall or brecciation of Eastern Gabbro by TDL magma as it stopes its way upward during ascent are important examples of how the magma flow was slowed resulting in the precipitation of the more dense sulphide liquid from the magma. Conversely above ridges or crests in the footwall, where TDL Gabbro thins and the magma velocity increased, sulphides were unable to settle out of the magma and mineralized horizons thin or pinch out. Accumulation of sulphide by fluid dynamic processes can explain the bulk of the mineralization in the Marathon Deposit and metal trends such as that shown in diamond drill hole MB-08-10. Metal trends show increasing Cu and PGM+Au with increasing total sulphides regardless of the proportion of chalcopyrite in the sulphide assemblage.

After sulphides settled out of the magma, a second process acted to upgrade the sulphides with PGM+Au, particularly in the upper portions of the mineralized zone as describe in drill hole G9. The upgrading occurred as magma passed through the conduit and interacted with sulphides in the crystal pile possibly by stirring up early formed sulphides. This process of sulphide upgrading was used to describe the extreme enrichments of PGM relative to copper in disseminated sulphides at the Noril'sk deposits by Naldrett et al (1995). Naldrett et al described the mathematical model whereby the ratio of magma in the conduit that interacted with sulphides to the amount of sulphides is referred to as the N factor. Under conditions where the N Factor is very high, continued interaction of fresh magma with sulphides will continue to increase the grade of PGM while the Cu concentration remains constant. Very high PGM concentrations in the W Horizon such as 45 g/t over 10 m (hole M07-306) and metal trends such as the gradual increase in the proportion of chalcopyrite and the matching rapid increase in PGM+Au are interpreted to be a result of continuous upgrading.

A third process of PGM upgrading by sulphide dissolution (after Kerr and Leitch, 2005) is envisaged to have occurred in the W Horizon in order to account for samples with extreme PGM content and only trace copper. For example, in many instances the PGM enrichment of up to 75 ppm Pd occurs in samples with only 0.01 to 0.02% Cu. These levels of Pd when recalculated to abundances in 100% sulphides correspond to untenable concentrations of between 2 and 4% Pd in 100% sulphide. The sulphide dissolution process involves the progressive removal of Cu and S from the pre-existing sulphides when they interact with magma that is sulfur under saturated. The Pd and Pt remain behind with the remnant sulphides. Evidence of Au loss in samples of the W Horizon imply that Au was also removed along with Cu and S by this same process.

8.2 DEPOSIT COMPARISONS

8.2.1 Comparison of Marathon Deposit with Mid-continent Rift-Related Deposits (after Good and Crockett, 1994)

There are many striking petrologic and geochemical similarities between the Two Duck Lake Gabbro and the Partridge River Intrusion, located at the base of the Duluth Complex, Minnesota. The Partridge River intrusion is the best described gabbroic intrusion in the Duluth Complex and is host to the Minnamax (Babbit) and Dunka Road Cu-Ni-PGM Deposits. The relevant features described from the Partridge River Intrusion that are also observed in the Two Duck Lake Gabbro, include the following:

- The textures and abundance of minerals in the Partridge River Intrusion and the inferred crystallization path are remarkably similar to those of the Two Duck Lake Gabbro.

- The compositions of plagioclase, pyroxene, and olivine are restricted relative to other mafic intrusions and overlie values for the Two Duck Lake Gabbro.

- The coherent behavior of Zr, Rb, and Y, indicative of control by variable proportions of intercumulus liquid, is consistent with observations in the Two Duck Lake Gabbro.

- Chalcopyrite and PGM are intergrown with calcic plagioclase that replaces less calcic plagioclase.

- Pyrrhotite, but not pentlandite, is replaced by chalcopyrite.

- Sulfides are predominantly interstitial to unaltered plagioclase, olivine, and pyroxenes and chalcopyrite and PGM are associated with Cl-enriched biotite and apatite, and altered minerals, such as chlorite, epidote, and calcite.

- Variable Cu/Ni ratios within deposits and between deposits and a trend of increasing ratios with increasing Cu are indicative of chalcophile element fractionation as shown for the Two Duck Lake gabbro.

- The occurrence of more than one type of disseminated sulfide zone, one being relatively sulfur rich is analogous to the main and basal sulfide zones in the Two Duck Lake Gabbro.

The many similarities between the Partridge River Intrusion and the Two Duck Lake Gabbro imply that they formed by analogous processes. Four mechanisms have previously been proposed to account for features observed in the Partridge River Intrusion.

1. Chalockwu and Grant (1990) proposed that the magma of the Partridge River Intrusion was emplaced as a plagioclase plus olivine crystal mush that crystallized in situ.

2. Grant and Chalockwu (1992) provide geochemical and isotopic evidence implying that the Partridge River Intrusion consists of a mechanical mixture of cumulus plagioclase, olivine, and intercumulus liquid which were not in equilibrium with each other.

3. Foose and Weiblen (1986), and Ripley (1986) proposed various mechanisms for the mixing of magmas of similar compositions, but at different stages of crystal fractionation, to account for compositional irregularities.

4. Finally, an external source for sulfur is well documented in the available literature and Andrews and Ripley (1989) argue that sulfur assimilation occurred prior to intrusion of the host gabbro. These mechanisms are, to some extent, analogous to those proposed in the model for the formation of the Marathon Deposit.

8.2.2 Comparisons of Mid-continent Rift Deposits and Voisey Bay and Noril'sk Deposits

Comparisons between the Mid-continent Rift System and the Voisey Bay and Noril'sk settings point to several similarities that suggest that the Mid-continent Rift is a likely setting for Ni-Cu mineralization. The continental rifting and associated voluminous igneous activity in all three regions formed in response to the rise of a hot plume of mantle material from deep in the Earth, fracturing the overlying continental crust. In the Mid-continent Rift, melting of the plume produced more than 2 million cubic kilometres of mostly basalt lava flows and related intrusions.

In all three regions, basalts derived from the mantle plume are enriched in trace elements, particularly in comparison to the most common basalts erupted on Earth, those formed at rifts in the oceans. Like basalts in the Noril'sk region, early basalts of the Mid-continent Rift have compositions characterized by relatively high abundances of magnesium, chromium, nickel, and platinum, and relatively low abundances of sulfur. Such metal-rich but sulfur-poor basalt magmas can carry metals (such as Ni, Cu, and PGM's) to high levels in the crust because sulfur is not available to form a separate sulfide liquid that would scavenge metals from the magma while it is still deep below the surface. If these metal-rich basalts encounter a source of sulfur near the surface, and sulfur is incorporated into the basalt magma, they would be ripe for sulfide mineral formation.

8.3 DEPOSIT MODEL CONCLUSIONS

A possible model for the emplacement and crystallization history of the Two Duck Lake magma and genesis of sulfides is proposed as outlined below.

Step one: Crystallization of plagioclase and olivine occurred in a deep magma chamber prior to emplacement into its present site. Due to density differences, plagioclase did not settle out of the magma column but much of the olivine did. During crystallization and sporadic replenishment with unfractionated magma, the magma chamber becomes compositionally stratified.

Step two: Sulfur migrated out of the country rock into the magma chamber resulting in the formation of sulfide droplets. The Ni/S ratio of the sulfide droplets will be high in the lower layers of the chamber, and low in the upper layers of residual magma.

Step three: The Two Duck Lake intrusion and sulfide deposit is formed when magma is forced out of the deep chamber upward into its present site. The more fractionated, plagioclase-rich upper layers become mixed with the less fractionated lower layers by the turbulent movement out of the deep chamber. The sulfide droplets grow as they come into contact with other droplets during transport. At the time of intrusion, the crystal mush consists of plagioclase crystals of nearly uniform composition, interstitial silicate magma, and droplets of sulfide liquid; there was little, if any, crystal-free magma in the chamber.

Step four: After intrusion, some minor settling of plagioclase crystals occurred, and plagioclase formed a framework for crystallization of the interstitial melt. The crystal mush cooled rapidly thereby inhibiting post-cumulus processes, such as complete internal equilibration of the system. A very small amount of volatile-rich interstitial melt migrated toward the center of the intrusion, crystallized granophyre, and released water into the surrounding gabbro, resulting in the formation of pegmatite.

Step five: Subsolidus reactions occurred involving local migration of components in deuteric fluid. This process results in features such as the replacement of pyrrhotite by chalcopyrite and the deposition of PGM in association with hydrous silicates; the last to form are microscopic chalcopyrite, calcite, and chlorite veinlets. The numerous documented features presumably reflect reactions that occur as the temperature decreases and the fluid evolves.

9.0 EXPLORATION

Since the compilation of data in this Technical Report and the effective date of September 9, 2019 there has been no additional reported exploration. Refer to History Section 6 in this Technical Report for information on previous exploration.

10.0 DRILLING

On August 19, 2019 Gen Mining announced that the Company has begun exploration by way of a 12,000-metre drilling program on its Marathon Palladium-Copper Property. Two drills and crews were mobilized and drilling commenced August 14th. The program is designed to test several high-priority sites along a strike length of more than 40 km.

Previous drilling is discussed in the History Section.

10.1 TARGETS FOR THE 2019 EXPLORATION DRILLING PROGRAM

The following areas are the targets for the 2019 exploration program:

- 3,000 metres testing the West Feeder Zone near the Main Zone Deposit;
- 1,000 metres of confirmation/infill drilling on the Marathon Deposit;
- 2,700 metres exploration drilling on two Geordie Deposit offsets;
- 2,600 metres of greenfield exploration drilling on Boyer Area; and
- 2,700 metres of drilling for the source of the extremely high-grade samples and massive sulphides at Sally Area.

The Company's CEO believes that the Property has been under-explored for the past several years during a time of unprecedented low palladium prices. Gen Mining's goal is will be to expand the current Mineral Resource base while examining the economics of a potential mine.

11.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

The following section of this Technical Report is largely taken from the 2014 internal Feasibility Study draft report completed by Nordmin Engineering Ltd., ("Nordmin"), and outlines sampling protocol (preparation, analysis and security procedures) instituted and used by Marathon PGM Corp. in each of their drilling and other rock sampling programs since at least 2007. These protocols are identical to those reported in earlier NI 43-101 compliant reports issued by Marathon PGM Corp. on the Property.

11.1 PROTOCOLS BEFORE DISPATCH OF SAMPLES

Each sample bag has a numbered identification ("ID") tag placed inside, along with the sample; before being sealed. The sample ID number is also written on the outside of the sample bag. The position of the samples on the remaining half cores is marked with a corresponding ID tag. Samples are then grouped into batches before being placed into rice bags. Each rice bag is also sealed before being dispatched. Other than the insertion of control samples there are no other action taken at site.

During the 2007 and 2008 drilling campaigns, samples were delivered either by Marathon PGM Corp. personnel or shipped via Courtesy Courier. On rare occasions when samples were deemed to be high priority, they were shipped via Greyhound Bus Lines out of Marathon, to Accurassay's facilities (acquired by AGAT Labs in 2017) in Thunder Bay, Ontario. Upon receipt of the samples, Accurassay personnel would ensure that the seals on rice bags and individual samples had not been tampered with.

Accurassay provided analytical services to the mining and mineral exploration industry and is registered under ISO 9001:2000 quality standard.

In 2011, Stillwater Canada Inc. changed assay labs and initiated analyses at ALS Chemex Labs in Thunder Bay. ALS Chemex uses a similar lab protocol but with the exception that PGM analyses are conducted by ICP-MS instead of Atomic Absorption as at Accurassay.

11.2 LABORATORY PROTOCOLS

At the time of delivery, the laboratory acknowledges receipt of the sample shipment in good order and logs all samples into their LIMS (Laboratory Information Management System). Samples were both prepared and analyzed at the Accurassay laboratory in Thunder Bay, Ontario.

All samples were analyzed for Cu, Ni, Ag, Au, Pt and Pd. Rhodium was requested on samples within an intersection of two or more consecutive samples with an NSR value greater than $8, as well as the two samples on either side of the intersection, even though the values were likely to be below detection limit. The two samples outside of the mineralized intersection were requested for dilution information purposes.

The following details have been extracted from the Accurassay's established procedures on the Marathon PGM Corp. samples.

11.3 SAMPLE PREPARATOIN

The samples provided to Accurassay by Marathon PGM Corp. were core samples, rock samples and pulp samples. The samples were dried, if necessary, crushed to approximately minus 10 mesh and split into 250 g to 450 g sub-samples using a Jones Riffler. The sub-samples were then pulverized to 90% passing 150 mesh using a ring and puck pulverizer and homogenized prior to analysis. Silica sand cleaning between each sample was performed to prevent cross-contamination between samples.

11.3.1 Fire Assay Precious Metals

For flame atomic absorption spectroscopy ("AAS") determinations preliminary concentrations for Au, Pt and Pd by fire assay (lead collection) is the preferred method. The standard operating procedure for fire assaying at Accurassay involves weighing, fluxing, fusion and cupellation of each sample.

Weighing

A 30.2 g sample mass was routinely used for analysis of the Marathon PGM Corp. samples although select sample masses may be altered to accommodate sample chemistry, if required.

A furnace load consists of 23 or 24 samples with a check done every 10th sample (by client ID), along with a laboratory blank and a Quality Control Standard. Duplicate checks were performed on pulverized samples.

Fluxing

Samples provided to Accurassay by Marathon PGM, did not require preliminary treatment and were mixed directly with the assay flux and fused. Currently, Accurassay uses a premixed basic flux purchased from Reliable Industrial Supply. The composition of the flux is as follows: Litharge (PbO), 50.4%, soda ash (dense), 35.9%, borax, 10%, and silica flour, 3.6%. It is standard practice for laboratories to use a premixed flux and adjust the ingredients when necessary.

Fusion

Samples are typically fused for 1¼ h at 1,800 to 2,000 degrees Fahrenheit. The fusion time may be increased if needed.

Cupellation

Samples are typically cupelled for 50 minutes at 1,900 degrees Fahrenheit. The cupellation time may be increased if needed.

11.3.2 Digestion – Precious Metals

Precious metal beads were digested using a nitric/hydrochloric acid digestion and bulked up with a 1% La_2O_3 solution and distilled water. The use of lanthanum in the concentration of 0.2-1.0% is an acceptable practice and complies with accepted published methods. A final volume of 3 mL was used for the analysis.

11.3.3 Digestion – Base Metals

For flame AAS determinations of Cu, Co, Ni, Pb, and Ag, an acid digestion consisting of aqua regia (1 part nitric to 3 parts hydrochloric acid) was the preferred method. A sample mass of 0.25 g and a final volume of 10 mL is used for the analysis. For samples requiring a full assay digestion (high grade); a sample mass of 2.5 g and a final volume of 250 mL is used. A full assay is required whenever the concentration of any given element is greater than 1% for any of the above noted elements.

11.3.4 Flame Atomic Absorption Spectrometric Measurement

Accurassay uses a Varian AA240FS with manual sample introduction for the determination of Au, Pt and Pd. A Varian 220FS or 240FS with SIPS and auto-diluter is used for the determination of base metals.

Calibration standards are made up from 1,000 ppm certified stock solutions. Quality assurance ("QA") solutions are made up from separately purchased 1,000 ppm certified stock solutions. All stock solutions are prepared commercially by ISO certified suppliers.

11.3.5 Reporting

Laboratory reports are produced using Accurassay' local information management system ("LIMS") program. All duplicate assays are reported on the certificate of analysis. Quality control ("QC") standards and blanks are not reported unless requested by the client.

11.3.6 Control Charts for Quality Control Standards

All data generated for quality control standards, blanks and duplicates are retained with the client's file and are used in the validation of results. For each quality control standard, control charts are produced to monitor the performance of the laboratory. Warning limits are set at +/-2 standard deviations, and control limits are set at +/-3 standard deviations. Any data points for the quality control standards that fall outside the warning limits, but within the control limits require 10% of the samples in that batch to be re-assayed. If the results from the re-assays match the original assays the data are validated, if the re-assay results do not match the original data, the entire batch is rejected and new re-assays are performed. Any quality control standard that falls outside the control limits is automatically re-assayed and all of the initial test results are rejected. Any result that appears to be outside these criteria on the control charts provided below have already been re-assayed as part of our internal quality control system.

11.3.7 Standards

The in-house standard used for Au, Pt, Pd and Rh was made up from a rock source provided to Accurassay by a third party. The standard names were APG1 and APP7. The CANMET standards used for the analysis of Au, Pt, Pd and Rh were WMS-1 and WMG-1. All standards used to certify base metal values were provided by CANMET. The following standards were used: CZN3, RTS-2, and RTS-3. The certificates for all standards are provided at the end of this Technical Report.

The QA sample was made in the laboratory from certified stock solutions purchased from an ISO 9000 certified supplier. The solution was made from a completely different lot number than the solutions used to calibrate standards. The quality control standards were used to monitor the processes involved in analyzing the samples. The quality assurance samples were used to verify the initial calibration of the instruments and monitor the calibration throughout the analysis.

It should be noted that although a standard or quality assurance standard may not be listed by job number on the control charts, a standard and quality assurance sample was run with each job.

The values for APG1 and APP7 were developed by Accurassay and verified through round-robin analysis with other laboratories in Canada. The values for CANMET certified reference materials were obtained from their respective certificates of analysis.

11.4 QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

Stillwater continued with a robust quality assurance/quality control ("QA/QC" or "QC") program that had been implemented in the mid-2000s by the predecessor company, Marathon PGM. The QC program consisted of the insertion of reference materials, field blanks and duplicate pair monitoring.

Two standards, named MPG1 and MPG2, were prepared by Accurassay Laboratories in Thunder Bay, ON. Material was sourced from the Marathon PGM-Cu Project. Three hundred seventy-five samples were analyzed for the characterization of MPG1, and 325 samples were analyzed for the characterization of MPG2. A mean and standard deviation were calculated for each reference material.

All data from the 2009 and 2011 drill programs were examined by P&E. Drill data prior to 2009 had been examined by P&E, (and passed), for use in previous resource estimates and technical reports.

11.4.1 Performance of Reference Materials 2009 and 2012

For the 2009 data, there were 31 data points for MPG1 and 18 data points for MPG2. All data points fell between +/- two standard deviations from the mean for Au, Cu, Pd and Pt.

For the 2011 data there were 35 data points for MPG1 and 32 data points for MPG2. All data points fell between +/- two standard deviations from the mean.

11.4.2 Performance of Blank Material

The blank material used for the 2009 and 2011 programs was a commercially prepared nepheline syenite sand. There were 49 data points in 2009 and 68 in 2011. All blank results were below five times detection limit for the commodity in question.

11.4.3 Performance of Duplicate Data

There were 81 pulp duplicate pairs analyzed at ALS Minerals for Au, Pt and Pd for the 2011 drill program. All pairs were graphed on a simple scatter graph. The precision on the gold pulp pairs was acceptable, with less precision (as is to be expected) on the very low grades. Both platinum and palladium demonstrated excellent precision at the pulp level. There were no duplicates available for copper.

11.5 SURFACE TRENCH SAMPLES

The Marathon Deposit database contains 1,736 surface sample assays collected from channels that were saw cut along lines spaced 30 to 50 m apart along approximately 2 km strike length. The channels were cut in approximately straight lines located close to and perpendicular to the base of the deposit during the years 1985 to 1986 and 2005 to 2009.

After a comparison of the trench samples with the diamond drill holes in the same vicinity, the channel samples were included in the Mineral Resource Estimate. In a report titled, “Trench vs. Core Assay Data in the Marathon Deposit Main Zone,” authored by D. Good, Ph.D., P. Geo., and dated March 18, 2012, it was clearly shown that channel samples should not be excluded from the database because a sampling bias could not be proven. The test sample set included channel samples cut from a relatively Pd-rich zone of the Marathon Main Zone and when compared to the core samples drilled in the immediate vicinity, there was no sampling bias demonstrated. P&E has reviewed the report by D. Good and accept the methodology and conclusions.

P&E considers the data to be of good quality and acceptable for use in the current Mineral Resource Estimate.

12.0 DATA VERIFICATION

12.1 APRIL 2012 SITE VISIT AND INDEPENDENT SAMPLING

The Marathon Project was visited by Mr. David Burga, P.Geo., an independent qualified person as defined by NI 43-101. Mr. Burga visited the Project on April 4, 2012 and collected ten samples from nine holes. Samples were collected by ¼ sawing the half core remaining in the core box.

The samples were placed in plastic bags, given a unique sample ID and taken by Mr. Burga to AGAT Labs in Mississauga, ON for analysis.

Copper, silver and nickel were analyzed using 4-acid digest with AAS finish. Gold, platinum and palladium were analyzed using lead collection fire assay with ICP-OES finish.

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 ISO standards.

AGAT maintains ISO registrations and accreditations. ISO registration and accreditation provide independent verification that a QMS is in operation at the location in question. Most AGAT laboratories are registered or are pending registration to ISO 9001:2000.

Results of the independent site visit samples are presented in **Error! Reference source not found.** through Figure 12.4.

FIGURE 12.1 P&E SITE VISIT RESULTS FOR PALLADIUM

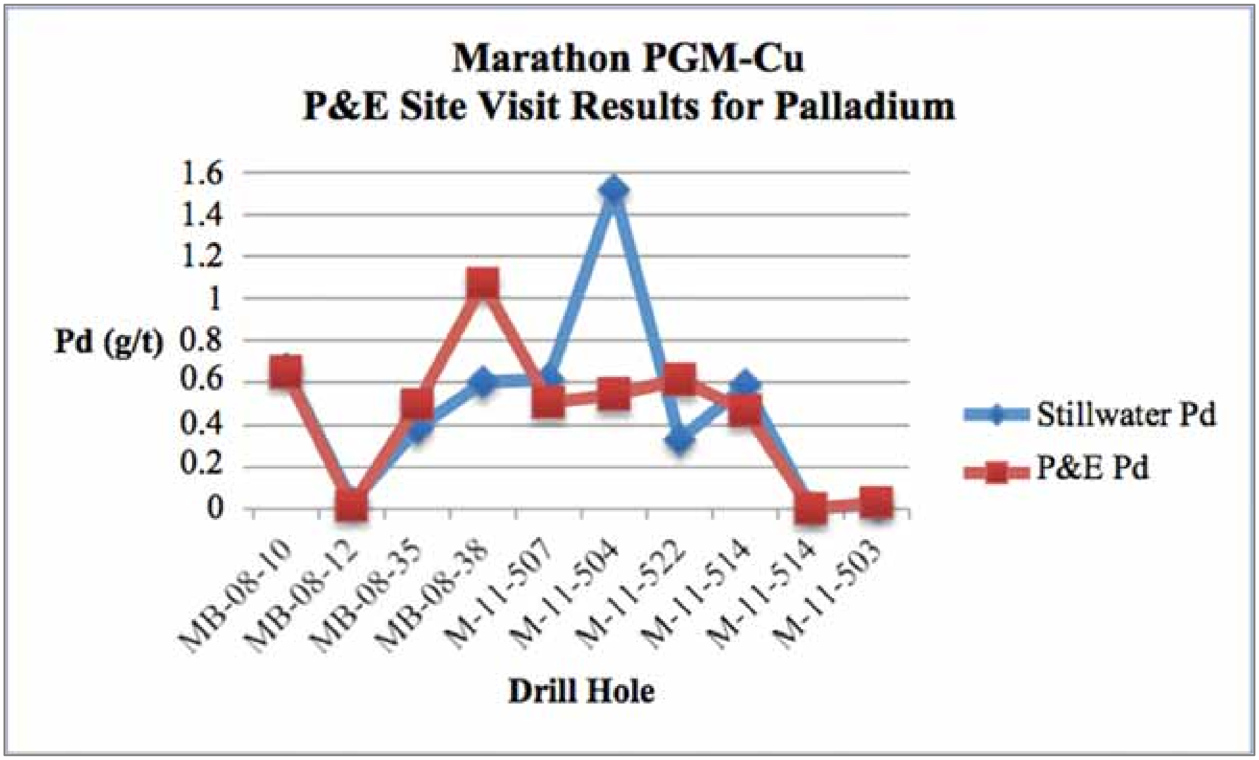


FIGURE 12.2 P&E SITE VISIT RESULTS FOR PLATINUM

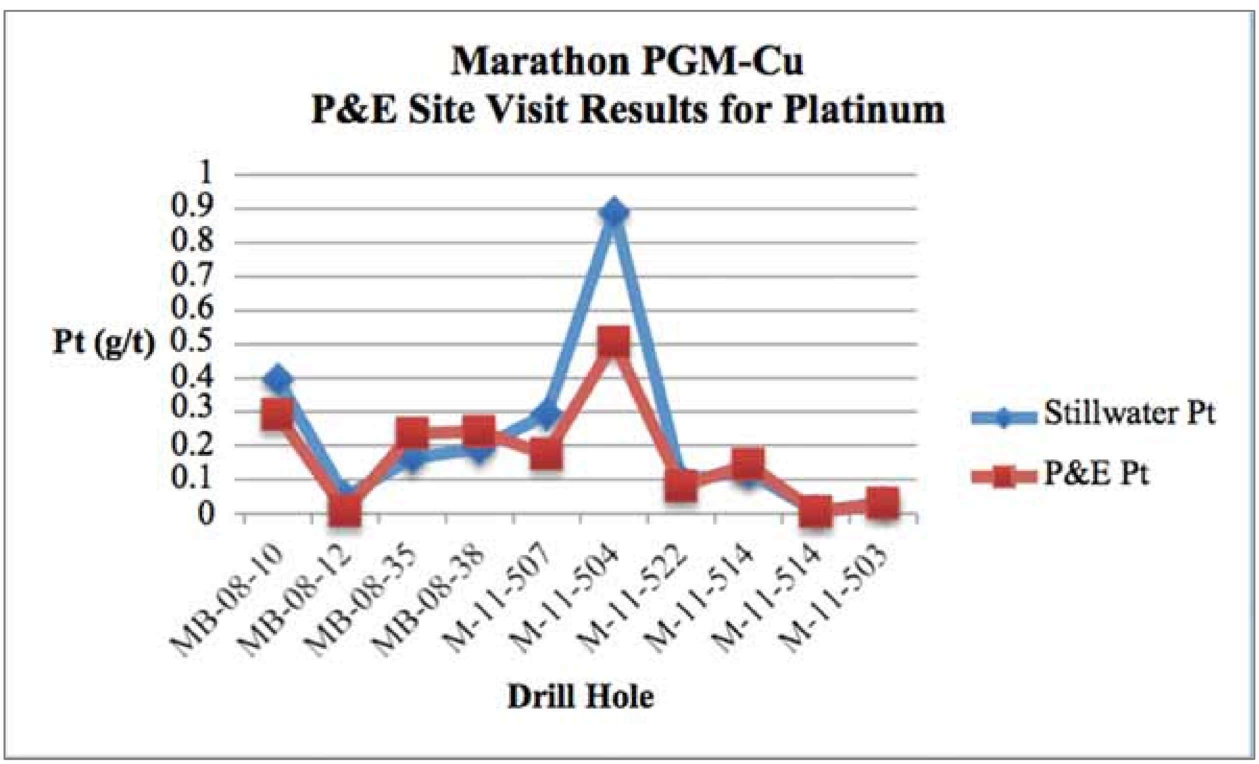


FIGURE 12.3 P&E SITE VISIT RESULTS FOR COPPER

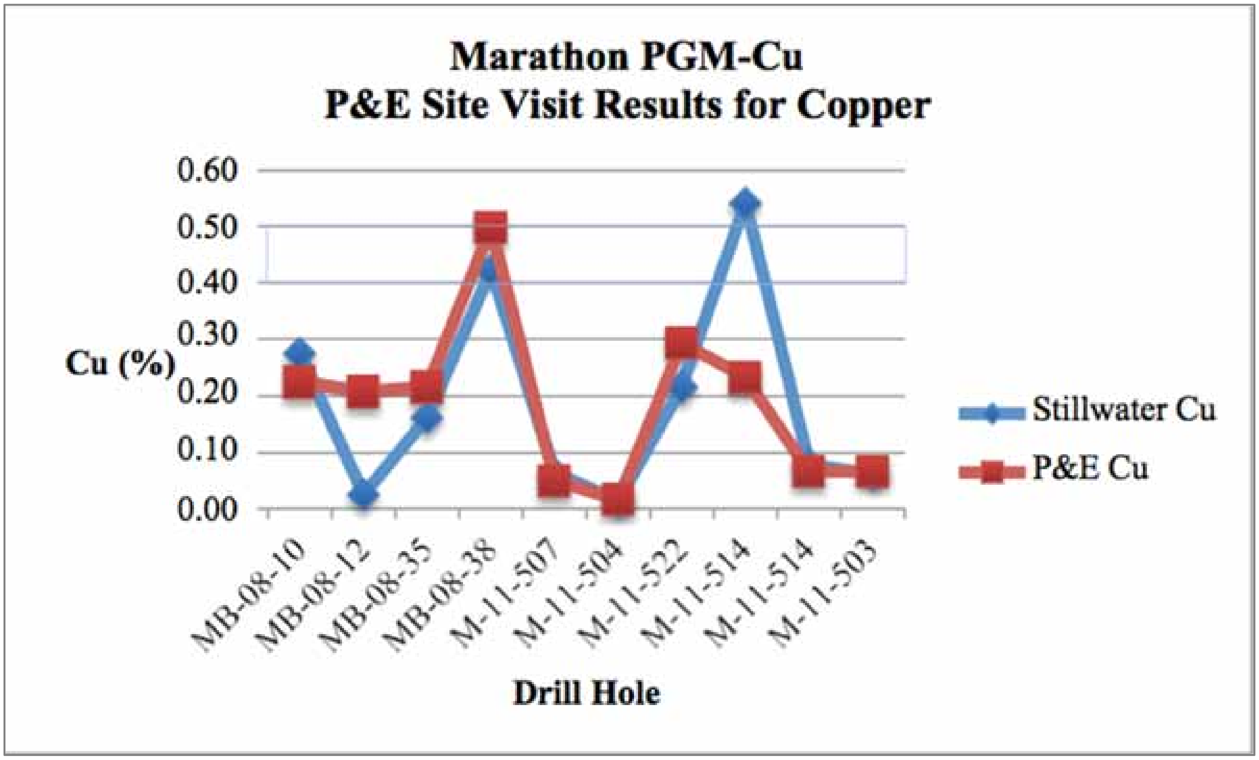
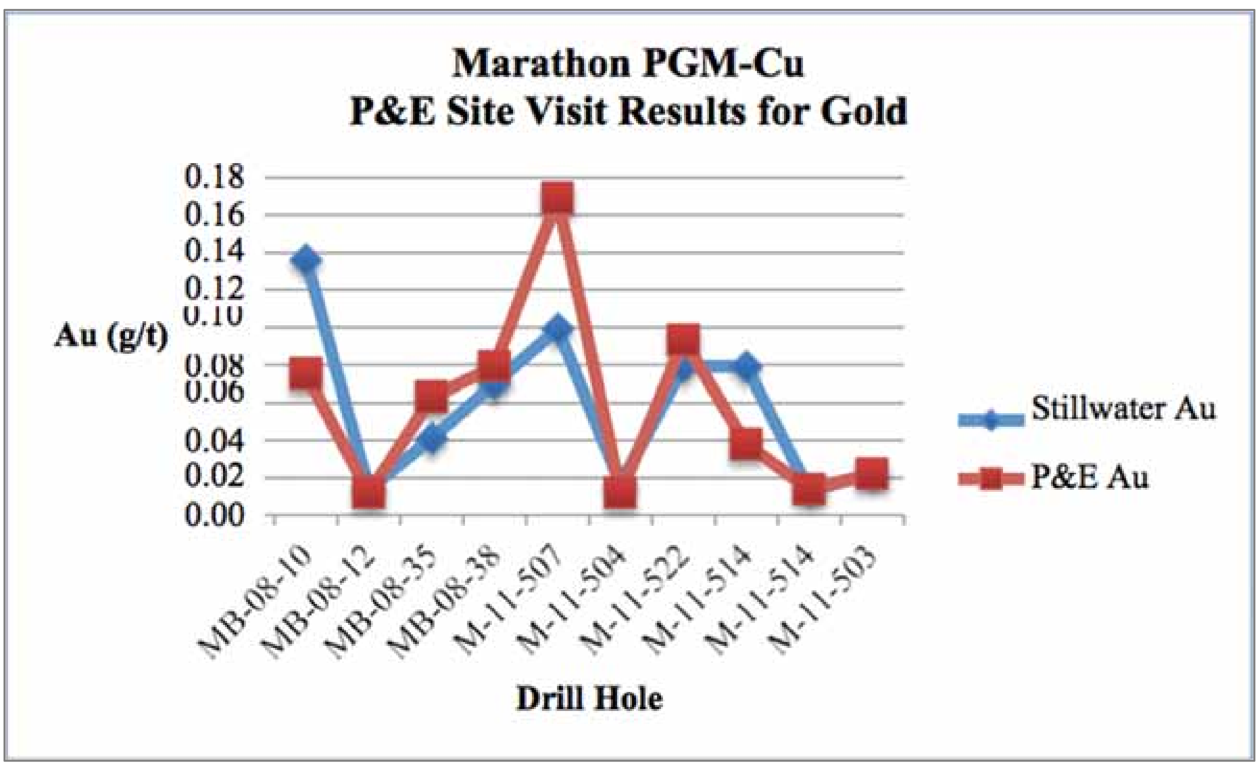


FIGURE 12.4 P&E SITE VISIT RESULTS FOR GOLD



12.2 MAY 2019 SITE VISIT AND INDEPENDENT SAMPLING

A site visit to the Marathon Project was undertaken by Mr. Bruce Mackie of Bruce Mackie Geological Consulting Services ("Mackie") on May 04, 2019. As part of the site visit, confirmation samples from selected drill core intervals were taken by Mr. Bruce Mackie, P.Geo. and were submitted to Activation Laboratories Ltd. in Thunder Bay. This work was aided by Mr. John McBride, P.Geo., a Senior Project Geologist employed at that time by Stillwater Canada Inc.

12.2.1 Data Verification and Drill Core Examination

The Property was accessed by road via Highway 17, which runs through portions of the Project and 12 mineralized drill hole intercepts were inspected by Mr. Mackie on May 04, 2019 (listed in Table 12.1).

Ahead of the inspection, the core was first located at Stillwater's main core storage facility in the Town of Marathon and then laid out in Stillwater's core shack facility. This work was performed Mr. John McBride of Stillwater. It should be noted that while the mineralized drill hole intercepts were provided in advance to save time during the site visit, the specific intervals that were to be resampled by Mr. Mackie were not provided in advance.

TABLE 12.1
DRILL HOLE INTERCEPTS INSPECTED

Zone	Hole No.	From (m)	To (m)	Interval (m)
Main Zone	M-05-49	20.0	34.0	14.0
Main Zone	M-05-49	80.0	90.0	10.0
Main Zone	M-11-520	176.0	189.0	13.0
Main Zone	M-11-520	211.0	227.0	16.0
BR Zone	M-06-178	3.0	17.0	14.0
Southern Resource Zone	M-17-528	43.0	55.0	12.0
Southern Resource Zone	M-17-529	70.0	80.0	10.0
Sally Zone	SL-17-71	31.0	49.0	18.0
Sally Zone	SL-17-72	264.0	284.0	20.0
Sally Zone	SL-17-72	310.0	320.0	10.0
Geordie Lake	G-00-08	158.01	168.50	10.5
Geordie Lake	G-10-17	216.00	234.00	18.0
Total				**165.5**

Source: *Mackie (2019)*

The twelve intercepts were selected from nine diamond drill holes based largely on the following criteria: availability of core (much of the mineralized core from historic drilling from the core area of the Marathon Deposit was taken for metallurgical testwork), intercepts ranging from low grade (<0.5 g/t Pd), medium grade (0.5 to 1.0 g/t Pd) and high grade (>1.0 g/t Pd). In addition, intercepts were selected were from five different zones. The "Core Area" from which the historic resource estimates were calculated (the Main Zone, BR Zone, and Southern Resource Zone), the Sally Zone, as well as from the Geordie Area. Finally, the selection captured drill core from several different drill campaigns carried out between 2005 and 2017 by both Marathon PGM Corp. and Stillwater.

Mr. Mackie's inspection of the mineralized drill hole intercepts comprised the following tasks:

- Drill hole numbers were verified, and initial and final depths of the mineralized intercepts were reviewed.
- Measurement of core sample lengths and verification of sample numbers and tags.
- Validation of the descriptive geology with emphasis on the reported visual estimates of pyrite, chalcopyrite, pyrrhotite, chalcocite and magnetite content reported by Marathon and Stillwater.
- Validation, using original Accurassay Laboratories and ALS Minerals assay certificates, of Pd, Pt, Au, and Cu assays reported for the mineralized intercepts in MS ExcelTM files: Marathon Assays and Core.xlsx and Geordie Assay Range for Due Diligence.xlsx provided by Stillwater.

Mr. Mackie's visual estimates of pyrite, chalcopyrite, pyrrhotite, chalcocite and magnetite content generally agree with those reported by Marathon PGM Corp. and Stillwater for the twelve mineralized drill hole intercepts reviewed.

Drill logs for the sections reviewed were found to be appropriately detailed and present a reasonable representation of geology, alteration mineralization and structure.

No discrepancies in the sample tag numbers within the core trays and the intervals quoted in the above mentioned xlxs spreadsheets were noted. Nor were any discrepancies observed in the Pd, Pt, Au, and Cu values quoted from those in the original assay certificates.

Based on the results of the Investigation, Mr. Mackie is of the professional opinion that the mineralized drill hole assay results and corresponding drill hole logs reported by Stillwater and Marathon PGM Corp. (for drill holes M-05-49, M-11-520, M-06-178, M-17-528, M-17-529, SL-17-71, SL-17-72, G-00-08, and G-10-17 that were the subject of this investigation) are verifiable and accurate and portray a reasonable representation of the types of mineralization encountered on the Marathon and Geordie Deposits.

12.2.2 Confirmation of Sampling

Twelve samples were taken for due diligence to verify the presence of palladium, platinum, gold, and copper in the drill core. In addition, a sample of both the high- and low-grade standards used by Stillwater in their 2017 drill program were also taken for analyses. The sample intervals were selected by Mr. Mackie without prior knowledge given to Stillwater or Generation. The samples collected consisted of sawn quarter core. All verification samples duplicated the original sample intervals. In all instances the original sample interval was visible in the core box. Each verification sample was indicated with a Bruce Mackie sample identification tag that was placed in the core box. Mr. Mackie collected each sample and placed them in clear identified plastic bags with a unique sample number tag.

The verification samples remained in the custody of Mr. Mackie until he delivered them in person in a sealed container to Activation Labs, an accredited assay laboratory, in Thunder Bay, Ontario.

The samples were prepared and analyzed using similar methodologies employed by Stillwater during their 2017 diamond drill campaign: sample preparation Code RX1, gold, platinum and palladium analyses by fire assay followed by ICP-MS (Code 1C-EXP2) and trace element analyses by partial "aqua regia" digestion with an ICP-MS finish (Code UT-1M). A more detailed description of the analytical procedures used can be found on the Activation Labs website (www.actlabs.com).

In addition, the Specific Gravity of each of the core samples was determined by Pycnometer (Nitrogen).

Table 12.2 gives the intervals sampled and Table 12.3 summarizes the results of the confirmation sampling.

P&E considers there to be good correlation between the independent verification samples and the original analyses in the Company database.

12.2.3 Assay Verification

Verification of assay data entry was performed on 7,022 assay intervals for Cu, Au, Ag, Pt and Pd. A few data entry errors were observed and corrected. The 7,022 verified intervals were checked against assay laboratory certificates from Accurassay Laboratories of Thunder Bay, Ontario, ALS Chemex of Vancouver, B.C., ACME Analytical Laboratories Ltd. of Vancouver, B.C., Bell White Analytical Laboratories of Haileybury, Ont., and XRAL Laboratories of Don Mills, Ontario. The checked assays represented 51% of the data to be used for the Mineral Resource Estimate and approximately 13% of the entire database.

Table 12.2 Confirmation of Sample Intervals						
Zone	**Hole Number**	**From (m)**	**To (m)**	**Interval (m)**	**Lab / Year**	**Lab Certificate Number**
Sally	SL-17-71	41.0	43.0	2.0	ALS/2017	TB17177687
Sally	SL-17-72	276.0	278.0	2.0	ALS/2017	TB17210631
Sally	SL-17-72	314.0	316.0	2.0	ALS/2017	TB17210631
Southern Resource	M-17-529	72.0	74.0	2.0	ALS/2017	TB17233256
Southern Resource	M-17-528	45.0	47.0	2.0	ALS/2017	TB17220588
BZ Zone	M-06-178	7.0	9.0	2.0	Accurassay/2006	200641225
Main Zone	M-11-520	183.0	185.0	2.0	ALS/2011	TB11168362
Main Zone	M-11-520	217.0	219.0	2.0	ALS/2011	TB11168362
Main Zone	M-05-49	22.0	24.0	2.0	Accurassay/2005	200541214
Main Zone	M-05-49	84.0	86.0	2.0	Accurassay/2005	200541214
Geordie	G-00-08	160.1	161.1	1.0	Accurassay/2000	200041175
Geordie	G-10-17	222.00	224.00	2.0	Accurassay/2010	201040690

***Source:** Mackie (2019)*

Table 12.3 Confirmation of Assay Results							
Survey By	**From (m)**	**To (m)**	**Length (m)**	**Au (g/t)**	**Pd (g/t)**	**Pt (g/t)**	**Cu (ppm)**
DDH SL-17-71 Mineralized Intercept Sally Zone							
Stillwater	41.0	43.0	2.0	0.200	0.633	0.245	3,330
Mackie	41.0	43.0	2.0	0.195	0.591	0.246	3,510
DDH SL-17-72 Mineralized Intercept Sally Zone							
Stillwater	276.0	278.0	2.0	0.124	1.310	0.850	529
Mackie	276.0	278.0	2.0	0.065	1.190	0.587	225
Stillwater	314.0	316.0	2.0	0.252	1.085	0.658	1,920

TABLE 12.3 CONFIRMATION OF ASSAY RESULTS							
Survey By	**From (m)**	**To (m)**	**Length (m)**	**Au (g/t)**	**Pd (g/t)**	**Pt (g/t)**	**Cu (ppm)**
Mackie	314.0	316.0	2.0	0.263	1.790	0.924	2,840
DDH M-17-529 Mineralized Intercept Southern Resource							
Stillwater	72.0	74.0	2.0	0.136	0.815	0.239	3,510
Mackie	72.0	74.0	2.0	0.101	0.750	0.235	3,530
DDH M-17-528 Mineralized Intercept Southern Resource							
Stillwater	45.0	47.0	2.0	0.190	0.274	0.129	2,770
Mackie	45.0	47.0	2.0	0.103	0.113	0.101	2,530
DDH M-06-178 Mineralized Intercept BZ Zone							
Marathon	7.0	9.0	2.0	0.963	2.230	0.727	2,352
Mackie	7.0	9.0	2.0	0.152	1.750	0.583	852
DDH M-11-520 Mineralized Intercept Main Zone Resource							
Stillwater	183.0	185.0	2.0	0.055	0.616	0.139	3,480
Mackie	183.0	185.0	2.0	0.053	0.599	0.120	2,940
DDH M-11-520 Mineralized Intercept Main Zone Resource							
Stillwater	217.0	219.0	2.0	0.160	1.160	0.244	4,680
Mackie	217.0	219.0	2.0	0.092	0.935	0.275	3,860
DDH M-05-49 Mineralized Intercept Main Zone Resource							
Marathon	22.0	24.0	2.0	0.005	0.755	0.530	190
Mackie	22.0	24.0	2.0	0.013	0.461	0.430	190
DDH M-05-049 Mineralized Intercept Main Zone Resource							
Marathon	84.0	86.0	2.0	0.039	0.321	0.106	1,410
Mackie	84.0	86.0	2.0	0.043	0.327	0.071	2,340
DDH G-00-08 Mineralized Intercept Geordie							
Marathon	160.1	161.1	1.0	0.141	2.125	0.107	9,980
Mackie	160.1	161.1	1.0	0.092	1.700	0.092	8,670
DDH G-10-17 Mineralized Intercept Geordie							
Marathon	222.0	224.0	2.0	0.065	0.981	0.065	5,163
Mackie	222.0	224.0	2.0	0.052	0.824	0.051	5,860

TABLE 12.3
CONFIRMATION OF ASSAY RESULTS

Survey By	From (m)	To (m)	Length (m)	Au (g/t)	Pd (g/t)	Pt (g/t)	Cu (ppm)
MPG-1 High Grade Standard 2017 Drill Program							
Stillwater				0.275	3.538	1.109	6,715
Mackie				0.240	3.550	0.868	7,070
MPG-2 Low Grade Standard 2017 Drill Program							
Stillwater				0.073	0.805	0.223	2,853
Mackie				0.119	1.110	0.245	2,800

Note: *DDH = diamond drill hole.*
Source: *Mackie (2019)*

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

There has been no recent mineral process and metallurgical testing. Previous work has been discussed under History in section 6.7 of this Technical Report.

14.0 MINERAL RESOURCE ESTIMATES

14.1 INTRODUCTION

The Mineral Resource Estimate presented herein has been prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1 and in conformity with generally accepted "CIM Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral Resources have been classified in accordance with the "CIM Standards on Mineral Resources and Reserves: Definition and Guidelines" as adopted by CIM Council on May 10, 2014:

> *A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.*
>
> *A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.*
>
> *An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.*
>
> *An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.*
>
> *An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.*
>
> *An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the Mineral Resource will be converted into a

Mineral Reserve. Confidence in the estimate of Inferred Mineral Resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure.

All Mineral Resource estimation work reported herein was carried out or reviewed by Fred Brown, P.Geo., and Eugene Puritch, P.Eng., FEC, CET both an independent Qualified Person as defined by National Instrument 43-101 by reason of education, affiliation with a professional association and past relevant work experience. The effective date of this Mineral Resource Estimate is September 9, 2019.

Portions of the background information and technical data for this study were obtained from previously filed National Instrument 43-101 Technical Reports. The authors have assumed that previous companies' reports, maps and other data are complete and accurate.

Mineral Resource modeling and estimation were carried out using Gemcom GEMS software. Variography was carried out using Snowden Supervisor. Open-pit optimization was carried out using the NPV Scheduler software.

14.2 PREVIOUS MINERAL RESOURCE ESTIMATES

A public Mineral Resource Estimate for the Marathon Deposit dated January 8, 2010 was prepared by Micon International Ltd. The Mineral Resource Estimate reported a total Measured and Indicated Mineral Resource Estimate of 114.8 Mt and an Inferred Mineral Resource Estimate of 6.2 Mt (Table 14.1). The Mineral Resource Estimate was reported relative to an NSR cut-off grade of C$10.50/t. The Mineral Resource Estimate was calculated based on the results of 818 drill holes and 456 surface channel samples.

TABLE 14.1
PREVIOUS MINERAL RESOURCE ESTIMATE DATED JANUARY 8, 2010

Classification	Tonnes (Mt)	Ag (g/t)	Au (g/t)	Cu (%)	Pd (g/t)	Pt (g/t)	Ag (koz)	Au (koz)	Pd (koz)	Pt (koz)
Measured	94.3	1.60	0.09	0.26	0.85	0.24	4,847	266	2,564	736
Indicated	20.5	1.42	0.06	0.14	0.45	0.16	976	50	386	133
Mea + Ind	**114.8**	**1.57**	**0.08**	**0.24**	**0.78**	**0.23**	**5,823**	**316**	**2,950**	**869**
Inferred	6.2	1.46	0.05	0.15	0.31	0.10	290	21	61	21

Note: *Mea = Measured, Ind = Indicated.*

This Technical Report and updated Mineral Resource Estimate replaces all previous Technical Reports and Mineral Resource Estimates for the Marathon Deposit.

14.3 DATA SUPPLIED

Sample data were provided in the form of ASCII text files and Excel format files. The supplied databases contain 1,359 unique collar records (Table 14.2). Of these, 177 records fall outside the block model limits or had no reported assay data. Drill hole and surface channel sample records consist of collar, survey, lithology, bulk density and assay data. Assay data fields consist of the drill hole ID, downhole interval distances, sample number, and Ag, Au, Cu, Pd, Pt assay grades. All data are in metric units. Collar coordinates were provided in the NAD27 UTM Zone 16 coordinate system.

For domain modeling a calculated NSR field was added to the database as follows:

NSR C$/t = Ag * 0.45 + Au * 39.03 + Cu * 76.27 + Pd * 35.00 + Pt * 26.47

TABLE 14.2
DRILL HOLE DATABASE SUMMARY

Item	Drill Holes	Channel Samples	Total
Count	883	494	1,377
Total metres	166,435.6	4,436.3	170,871.9
Minimum Length (m)	4.9	0.8	0.8
Maximum Length (m)	655.9	52.8	655.9
Average Length (m)	187.7	9.0	122.7

The supplied database contains a total of 43,057 non-zero Ag assays, 34,044 non-zero Au assays, 34,296 non-zero Cu assays, 34,040 non-zero Pd assays, and 34,034 non-zero Pt assays. Industry standard validation checks were carried out on the supplied databases, and minor corrections made where necessary. P&E typically validates a Mineral Resource database by checking for inconsistencies in naming conventions or 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, and missing interval and coordinate fields.

No significant errors were noted with the supplied databases. P&E considers that the database supplied is suitable for Mineral Resource estimation.

14.4 DOMAIN MODELING

The updated P&E Mineral Resource Estimate is based on 17 mineralization domains, with a total volume on the order of 74 million cubic metres (see Appendix B). Mineralization domains have been based on zones developed by Dr. David Good, previously Vice President Exploration for Stillwater Canada Inc. Mineralization domains are further broadly grouped into two areas, the northern domains where mineralization is dominated by paleo-topographic controls, and the remaining southern domains. Of the 17 domains modeled, the North Main (rock code 90), Walford Zone (rock code 80) and North Footwall (rock code 20) make up 80% of the total Mineral Resource by volume.

Domain models were generated from successive polylines as defined by a nominal C$13/t NSR value, oriented perpendicular to the overall trend of the mineralization. All polyline vertices were snapped directly to drill hole assay intervals, and include low grade material where necessary to maintain continuity between sections. Where required the polylines were extended over partially sampled drill holes, which were assigned low nominal background grades for compositing. Drill holes that reported no assay results were not included in the modeling process. An overburden surface was constructed from the supplied lithological logging, and all mineralization domains were clipped to topographic and overburden surfaces where appropriate. Each resulting mineralization domain was assigned a unique rock code, and the resulting domains were used for domain coding, statistical analysis and compositing limits (Table 14.3).

TABLE 14.3
MINERALIZATION DOMAINS

Description	Domain	Rock Code	Percent by Volume
Magnetite 1	MAG	101	1%
Magnetite 2	MAG	102	1%
Magnetite 3	MAG	103	0%
Magnetite Hanging wall	MHW	52	0%
Magnetite Hanging wall 1	MHW	51	1%
Magnetite Hanging wall 3	MHW	53	0%
Malachite Main	MBR	30	4%
Malachite Footwall	MBRFW	40	2%
North Footwall	NFW	20	9%
North Hanging wall 1	NHW	10	0%
North Hanging wall 2	NHW2	60	5%
North Hanging wall 3	NHW3	70	3%
North Hanging wall 4	NHW4	65	1%
North Hanging wall 5	NHW5	15	0%
North Hanging wall 6	NHW6	75	1%
North Main	NMAIN	90	57%
Walford Zone	WZONE	80	14%

14.5 EXPLORATORY DATA ANALYSIS

The average Nearest Neighbour drill hole collar distance is 45.9 m, and the average drill hole length is 187.7 m (Figure 14.1 and Appendix A for a plan view with drill hole traces and trenches). Summary assay data for the supplied database and for domain-coded assay samples are tabulated below (Table 14.4).

FIGURE 14.1 DIAMOND DRILL HOLE LOCATIONS IN PLAN VIEW

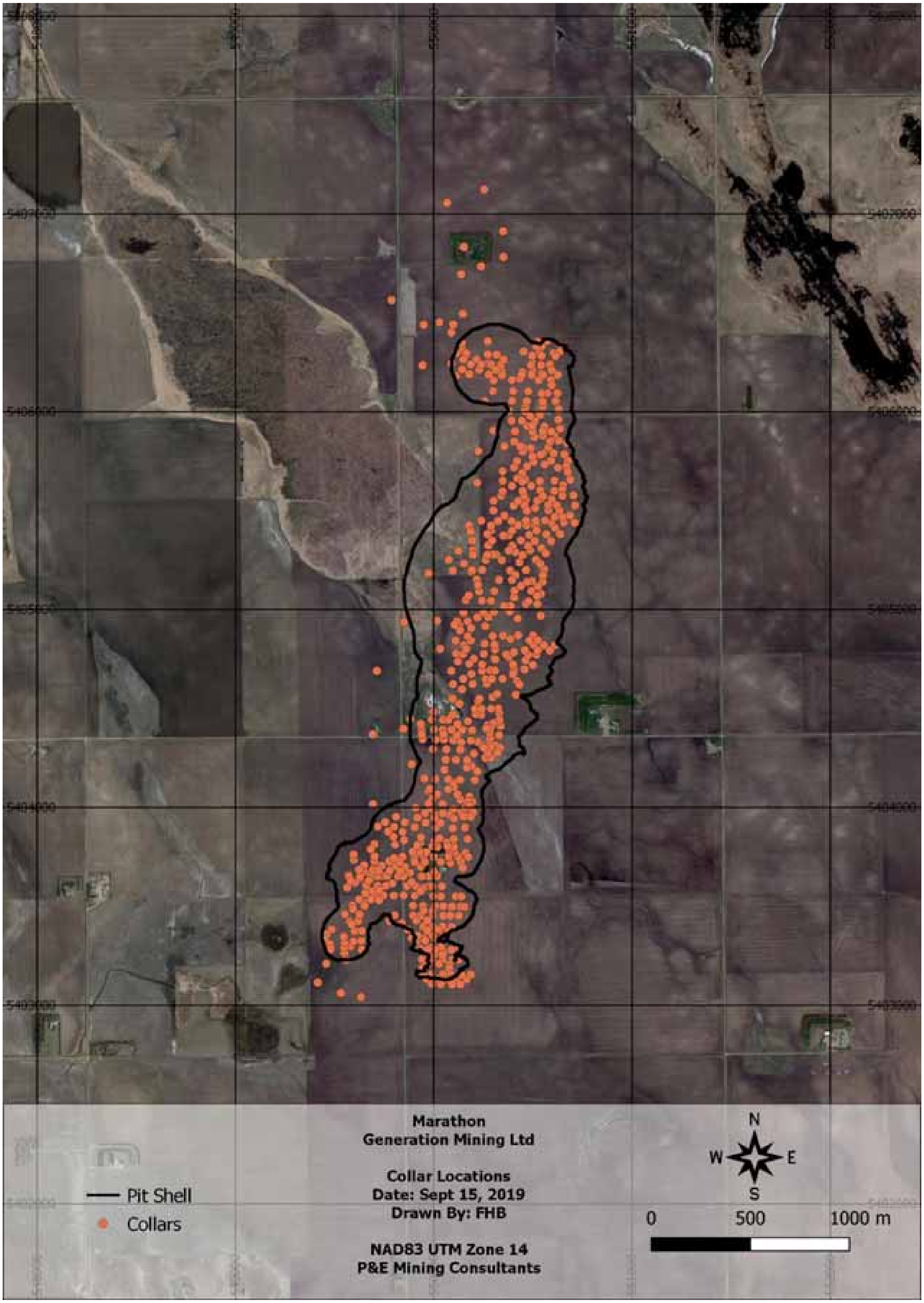


TABLE 14.4
SUMMARY ASSAY STATISTICS
A) ROCK CODES 0 TO 53

Rock Code	0*	10	15	20	30	40	51	52	53
Ag Mean g/t	1.22	1.37	1.36	1.31	1.73	1.64	2.62	2.56	2.25
Au Mean g/t	0.02	0.04	0.04	0.05	0.07	0.05	0.05	0.04	0.06
Cu Mean %	0.04	0.09	0.02	0.23	0.10	0.10	0.07	0.09	0.10
Pd Mean g/t	0.08	0.27	0.39	0.44	0.47	0.22	0.28	0.17	0.24
Pt Mean g/t	0.04	0.11	0.23	0.13	0.20	0.10	0.13	0.08	0.11
Ag St Dev	1.23	0.98	0.82	1.76	1.51	1.78	2.09	2.45	1.18
Au St Dev	0.04	0.08	0.07	0.08	0.12	0.05	0.08	0.03	0.06
Cu St Dev	0.07	0.09	0.03	0.26	0.12	0.10	0.07	0.05	0.09
Pd St Dev	0.23	0.35	0.56	0.67	1.16	0.33	0.96	0.24	0.37
Pt St Dev	0.07	0.10	0.25	0.16	0.43	0.11	0.34	0.09	0.10
Ag CoV %	101.13	71.30	60.16	133.61	87.13	108.08	79.88	95.67	52.58
Au CoV %	234.68	182.50	180.80	144.87	171.49	108.91	159.98	80.78	104.04
Cu CoV %	193.17	97.53	148.59	113.04	117.46	94.80	93.76	63.52	85.13
Pd CoV %	291.37	128.71	144.08	152.13	244.69	151.41	340.47	144.36	151.21
Pt CoV %	172.41	87.98	108.04	130.41	212.60	113.11	266.82	118.47	91.43
Ag Min g/t	0.01	0.45	0.45	0.1	0.1	0.1	0.45	0.45	0.5
Au Min g/t	0.0005	0.001	0.002	0.001	0.001	0.001	0.002	0.002	0.002
Cu Min %	0.0001	0.003	0.005	0.002	0.0001	0.001	0.003	0.003	0.005
Pd Min g/t	0	0.005	0.005	0.001	0.001	0.001	0.005	0.005	0.005
Pt Min g/t	0	0.007	0.007	0.001	0.001	0.001	0.005	0.006	0.007
Ag Max g/t	68.00	6.00	3.02	44.00	19.00	33.00	24.00	25.00	6.30
Au Max g/t	2.14	0.70	0.37	1.17	1.59	0.36	0.84	0.14	0.28
Cu Max %	2.22	0.52	0.13	4.91	0.97	0.90	0.37	0.29	0.32
Pd Max g/t	14.56	2.10	2.68	14.91	18.60	3.37	10.50	1.59	2.06
Pt Max g/t	3.48	0.43	1.14	2.21	8.72	1.03	4.21	0.79	0.47
Ag Count	25,179	84	31	1643	1120	635	240	112	55
Au Count	34,044	84	35	1876	1149	642	245	115	55
Cu Count	34,133	84	35	1872	1148	642	245	115	55
Pd Count	34,040	84	35	1876	1149	642	245	115	55
Pt Count	34,034	84	35	1866	1149	642	245	115	55

*Unconstrained assays

Note: *St Dev = standard deviation, CoV = covariance.*

TABLE 14.4
SUMMARY ASSAY STATISTICS
B) ROCK CODES 60 TO 103

Rock Code	60	65	70	75	80	90	101	102	103
Ag Mean g/t	1.55	1.74	1.53	2.19	1.98	1.64	1.68	1.48	1.77
Au Mean g/t	0.04	0.06	0.03	0.06	0.07	0.07	0.06	0.05	0.03

TABLE 14.4
SUMMARY ASSAY STATISTICS
B) ROCK CODES 60 TO 103

Rock Code	60	65	70	75	80	90	101	102	103
Cu Mean %	0.11	0.09	0.08	0.19	0.11	0.24	0.07	0.09	0.12
Pd Mean g/t	0.30	0.22	0.21	0.57	0.67	0.63	0.39	0.28	0.07
Pt Mean g/t	0.11	0.13	0.10	0.19	0.27	0.19	0.11	0.09	0.05
Ag St Dev	2.41	1.22	3.43	2.52	11.00	1.47	1.42	1.18	1.42
Au St Dev	0.05	0.09	0.05	0.07	0.18	0.10	0.12	0.09	0.04
Cu St Dev	0.13	0.10	0.07	0.19	0.13	0.21	0.07	0.08	0.13
Pd St Dev	0.43	0.31	0.24	0.74	2.48	0.80	0.44	0.37	0.15
Pt St Dev	0.13	0.17	0.10	0.24	1.05	0.26	0.10	0.09	0.06
Ag CoV %	155.45	70.02	224.01	115.09	556.41	89.86	84.40	79.63	80.45
Au CoV %	122.26	154.89	133.97	111.89	248.76	138.95	181.48	159.38	109.62
Cu CoV %	126.13	107.72	98.33	102.48	122.87	86.69	94.45	96.06	109.23
Pd CoV %	143.27	143.69	115.31	129.17	368.68	127.12	112.25	135.16	214.05
Pt CoV %	115.80	130.87	102.61	129.81	395.79	141.75	89.27	92.56	113.51
Ag Min g/t	0.02	0.45	0.09	0.45	0.1	0.02	0.1	0.1	0.45
Au Min g/t	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cu Min %	0.001	0.002	0.001	0.005	0.0001	0.0001	0.001	0.001	0.001
Pd Min g/t	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001
Pt Min g/t	0.001	0.001	0.001	0.001	0.001	0.001	0.006	0.002	0.001
Ag Max g/t	38.04	9.12	73.00	29.30	591.00	27.00	9.00	5.22	8.00
Au Max g/t	0.59	0.69	0.50	0.43	7.23	2.61	1.10	0.93	0.15
Cu Max %	1.43	0.66	0.51	1.47	1.22	3.55	0.31	0.53	0.73
Pd Max g/t	5.70	2.35	1.89	4.87	69.98	15.72	2.77	1.91	0.98
Pt Max g/t	1.50	1.42	0.70	2.34	39.10	8.20	0.54	0.37	0.23
Ag Count	923	234	548	172	3931	7703	232	151	64
Au Count	993	238	599	211	4067	8311	232	151	64
Cu Count	999	238	597	211	4062	8307	232	151	64
Pd Count	993	238	599	211	4067	8311	232	151	64
Pt Count	989	238	596	209	4065	8297	232	151	64

Note: *St Dev = standard deviation, CoV = covariance.*

P&E noted a strong overall correlation between Pd and Pt as well as Au with Pd and Pt. A strong correlation between Cu with Pd and Pt was noted in the northern area (Table 14.5).

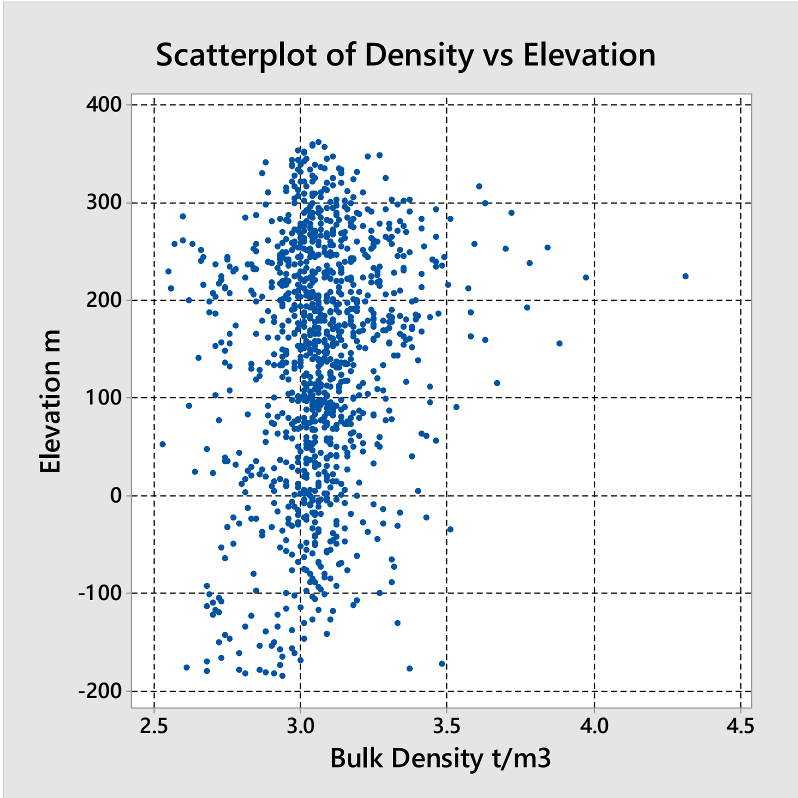
TABLE 14.5 ASSAY CORRELATION TABLE (PEARSON CORRELATION COEFFICIENT)					
Total	**Ag**	**Au**	**Cu**	**Pd**	**Pt**
Ag	1				
Au	0.09	1			
Cu	0.08	0.41	1		
Pd	0.05	0.57	0.41	1	
Pt	0.04	0.43	0.26	0.84	1
NFW 20	**Ag**	**Au**	**Cu**	**Pd**	**Pt**
Ag	1				
Au	0.29	1			
Cu	0.17	0.33	1		
Pd	0.25	0.52	0.60	1	
Pt	0.29	0.50	0.51	0.69	1
WZone 80	**Ag**	**Au**	**Cu**	**Pd**	**Pt**
Ag	1				
Au	0.06	1			
Cu	0.04	0.29	1		
Pd	0.01	0.56	0.22	1	
Pt	0.01	0.42	0.13	0.87	1
NMain 90	**Ag**	**Au**	**Cu**	**Pd**	**Pt**
Ag	1				
Au	0.19	1			
Cu	0.30	0.45	1		
Pd	0.19	0.56	0.65	1	
Pt	0.18	0.44	0.47	0.66	1

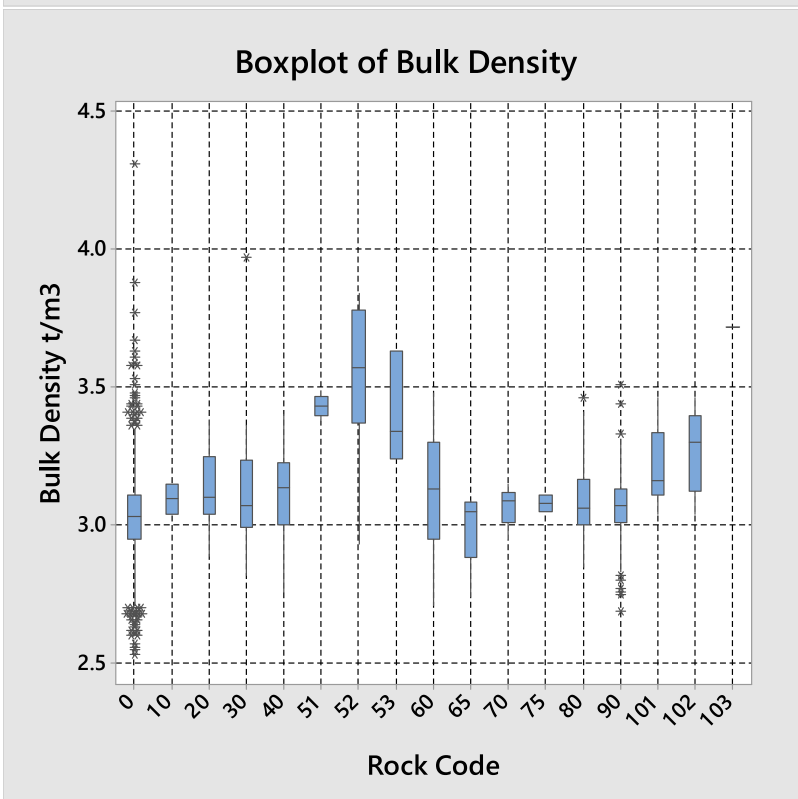
14.6 BULK DENSITY

The supplied database contains 1,136 bulk density measurements, with values ranging from 2.53 to 4.31 tonnes per cubic metre ("t/m^3") (Table 14.6). P&E noted a slight decrease in bulk density with depth, primarily associated with the denser Magnetite Hanging Wall units occurring higher in the stratigraphic column (Figure 14.2).

TABLE 14.6 **BULK DENSITY SAMPLE STATISTICS**						
Rock Code	**Mean**	**Standard Deviation**	**CoV**	**Minimum**	**Maximum**	**Count**
0	3.04	0.19	6.22	2.53	4.31	621
10	3.10	0.08	2.51	3.04	3.15	2
20	3.13	0.13	4.13	2.89	3.38	63
30	3.11	0.20	6.49	2.82	3.97	40
40	3.11	0.17	5.45	2.76	3.40	18
51	3.43	0.04	1.21	3.38	3.49	6
52	3.53	0.31	8.78	2.93	3.84	7
53	3.40	0.20	5.95	3.24	3.63	3
60	3.11	0.19	6.03	2.71	3.48	23
65	2.99	0.14	4.53	2.74	3.09	6
70	3.07	0.06	2.06	2.95	3.15	16
75	3.08	0.04	1.38	3.05	3.11	2
80	3.09	0.12	4.02	2.85	3.46	113
90	3.07	0.12	3.78	2.69	3.51	197
101	3.22	0.14	4.34	3.04	3.46	13
102	3.27	0.16	4.77	3.04	3.46	5
103	3.72	na	na	3.72	3.72	1
Total	**3.07**	**0.18**	**5.82**	**2.53**	**4.31**	**1,136**

FIGURE 14.2 BULK DENSITY PLOTS





14.7 COMPOSITING

Constrained assay sample lengths range from 0.10 m to 29.8 m, with an average sample length of 2.04 m (Figure 14.3). A total of 80% of the samples have a length of 2.00 m.

All constrained assay samples were therefore composited to the dominant sample length of 2.00 m. Length-weighted composites were calculated for all metals within the defined mineralization domains. Missing sample intervals in the data were assigned a nominal background grade of 0.001 g/t or 0.001%. The compositing process started at the first point of intersection between the drill hole and the domain intersected, and halted upon exit from the domain wireframe. Residual composites that were less than 1.00 m in length were discarded so as not to introduce a short sample bias into the estimation process. The wireframes that represent the interpreted mineralization domains were also used to back-tag a rock code identifier into the drill hole workspace. The composite data were visually validated against the domain wireframes and then exported for analysis and estimation. Summary uncapped composite statistics are tabulated in Table 14.7.

FIGURE 14.3 HISTOGRAM OF CONSTRAINED ASSAY SAMPLE LENGTHS

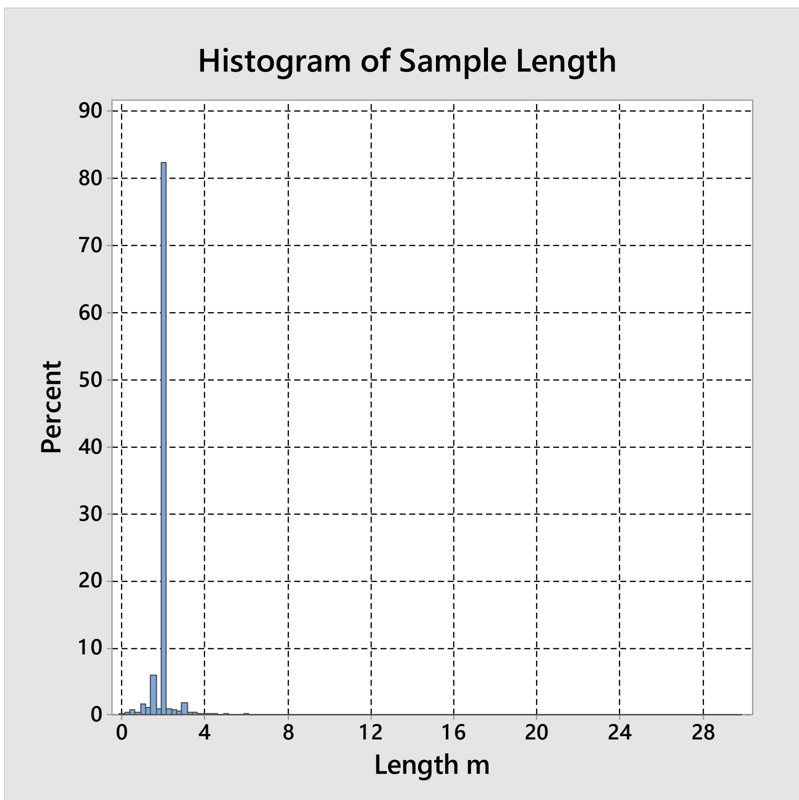


TABLE 14.7
SUMMARY COMPOSITE STATISTICS
A) ROCK CODES 10 TO 60

Rock Code	10	15	20	30	40	51	52	53	60
Ag Mean g/t	1.36	0.94	1.12	1.71	1.71	2.56	2.33	2.21	1.36
Au Mean g/t	0.05	0.04	0.05	0.07	0.05	0.06	0.04	0.06	0.04
Cu Mean %	0.11	0.02	0.23	0.11	0.11	0.07	0.08	0.11	0.11
Pd Mean g/t	0.29	0.38	0.44	0.53	0.25	0.31	0.16	0.26	0.31
Pt Mean g/t	0.11	0.23	0.13	0.22	0.11	0.14	0.08	0.11	0.11
Ag St Dev	1.01	0.90	1.70	1.56	1.88	2.21	2.57	1.27	2.42
Au St Dev	0.09	0.07	0.07	0.12	0.05	0.09	0.03	0.07	0.05
Cu St Dev	0.08	0.03	0.20	0.13	0.10	0.07	0.06	0.09	0.11
Pd St Dev	0.31	0.57	0.58	1.23	0.35	1.02	0.24	0.38	0.39
Pt St Dev	0.10	0.25	0.14	0.45	0.12	0.36	0.10	0.10	0.12
Ag CoV %	74.00	95.39	150.96	91.29	110.04	86.04	110.35	57.67	178.39
Au CoV %	188.13	184.62	134.73	164.62	102.04	158.35	84.60	105.05	118.62
Cu CoV %	72.62	173.68	85.44	111.90	87.60	94.34	69.88	85.07	105.47
Pd CoV %	105.24	148.54	130.59	231.86	140.42	329.88	149.17	147.98	125.79
Pt CoV %	83.99	111.10	113.21	204.00	106.98	264.34	125.53	89.37	108.50
Ag Min g/t	0.450	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Au Min g/t	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cu Min %	0.003	0.001	0.001	0.000	0.001	0.001	0.001	0.001	0.001
Pd Min g/t	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Pt Min g/t	0.007	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Ag Max g/t	5.87	2.76	44.00	18.92	33.00	24.00	25.00	6.30	38.04
Au Max g/t	0.70	0.37	1.16	1.59	0.36	0.84	0.14	0.28	0.59
Cu Max g/t	0.31	0.13	3.34	0.97	0.90	0.37	0.29	0.32	0.89
Pd Max g/t	1.58	2.68	14.91	18.59	3.37	10.49	1.59	2.06	5.70
Pt Max g/t	0.39	1.14	1.75	8.72	1.03	4.21	0.79	0.47	1.18
Ag Count	75	32	1885	1007	538	214	111	51	927
Au Count	75	32	1885	1007	538	214	111	51	927
Cu Count	75	32	1885	1007	538	214	111	51	927
Pd Count	75	32	1885	1007	538	214	111	51	927
Pt Count	75	32	1885	1007	538	214	111	51	927

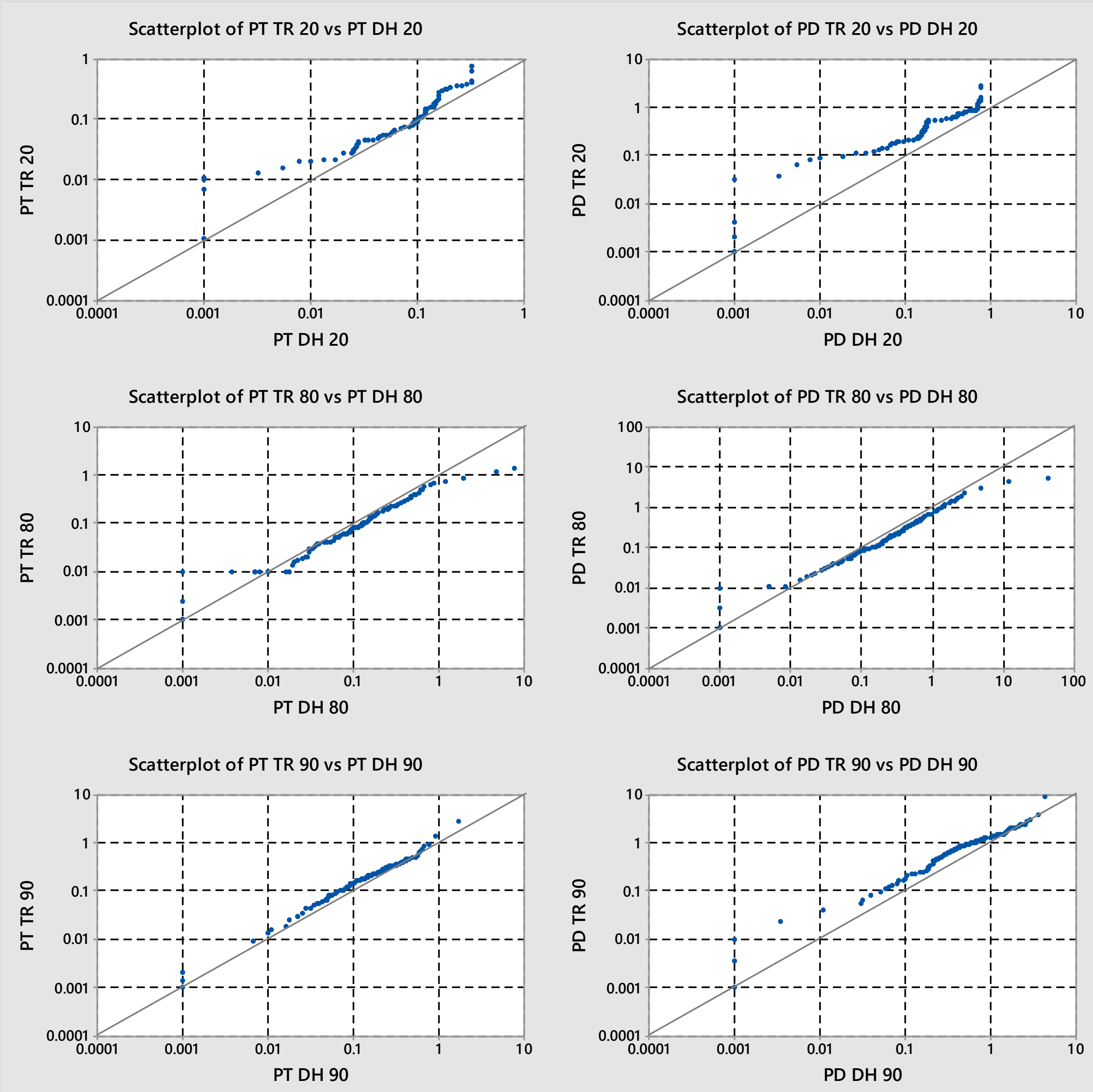
TABLE 14.7
SUMMARY COMPOSITE STATISTICS
B) ROCK CODES 65 TO 103

Rock Code	65	70	75	80	90	101	102	103
Ag Mean g/t	1.63	1.36	2.01	1.95	1.46	1.63	1.64	1.79
Au Mean g/t	0.06	0.04	0.07	0.08	0.07	0.06	0.06	0.04
Cu Mean %	0.10	0.08	0.20	0.11	0.24	0.08	0.10	0.13
Pd Mean g/t	0.22	0.24	0.62	0.70	0.65	0.42	0.30	0.08

TABLE 14.7 SUMMARY COMPOSITE STATISTICS B) ROCK CODES 65 TO 103								
Rock Code	**65**	**70**	**75**	**80**	**90**	**101**	**102**	**103**
Pt Mean g/t	0.13	0.11	0.20	0.28	0.19	0.11	0.10	0.05
Ag St Dev	1.23	3.42	2.56	11.26	1.47	1.46	1.20	1.52
Au St Dev	0.09	0.05	0.07	0.18	0.09	0.10	0.09	0.04
Cu St Dev	0.10	0.07	0.17	0.13	0.19	0.07	0.07	0.11
Pd St Dev	0.30	0.24	0.71	2.54	0.78	0.42	0.34	0.17
Pt St Dev	0.17	0.11	0.23	1.09	0.25	0.09	0.08	0.06
Ag CoV %	75.15	250.73	127.61	578.06	100.42	89.44	73.24	85.11
Au CoV %	148.15	123.55	103.15	243.42	129.25	152.71	150.35	99.52
Cu CoV %	104.39	85.29	86.66	116.70	80.24	86.90	77.46	88.58
Pd CoV %	136.46	99.91	112.89	364.17	120.38	99.97	115.68	197.13
Pt CoV %	131.10	101.70	114.91	394.17	134.33	80.27	79.67	114.10
Ag Min g/t	0.001	0.001	0.001	0.001	0.001	0.001	0.100	0.001
Au Min g/t	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cu Min %	0.001	0.001	0.001	0.000	0.000	0.001	0.003	0.001
Pd Min g/t	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Pt Min g/t	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001
Ag Max g/t	7.38	72.53	29.22	590.96	27.00	9.00	5.22	8.00
Au Max g/t	0.69	0.50	0.43	7.22	2.61	1.05	0.93	0.15
Cu Max %	0.66	0.51	0.81	1.18	2.18	0.31	0.53	0.73
Pd Max g/t	2.00	1.89	4.86	69.98	15.71	2.52	1.63	0.98
Pt Max g/t	1.42	0.70	2.33	39.10	8.20	0.48	0.37	0.23
Ag Count	228	551	177	3746	8515	206	114	51
Au Count	228	551	177	3746	8515	206	114	51
Cu Count	228	551	177	3746	8515	206	114	51
Pd Count	228	551	177	3746	8515	206	114	51
Pt Count	228	551	177	3746	8515	206	114	51

A substantial number of surface channel samples have been collected across the deposits from excavated trenches below the overburden. As a check on any potential bias from the channel samples, lognormal QQ plots were generated comparing composited channel samples to composited drill hole samples for the North Footwall (rock code 20), Walford (rock code 80) and North Main (rock code 90) domains. For the drill hole data, the composite samples were restricted to the top 20 m of the drill hole. The results do not indicate a substantial bias between the channel samples and the drill hole samples, with the possible exception of a slight bias for Pd in the North Main domain (Figure 14.4). P&E considers the channel samples to be acceptable for Mineral Resource estimation.

FIGURE 14.4 LOGNORMAL PLOTS COMPARING COMPOSITED CHANNEL SAMPLES AND DRILL HOLE SAMPLES



14.8 TREATMENT OF EXTREME VALUES

Grade capping analysis was conducted on the domain-coded and composited grade sample data in order to evaluate the potential influence of extreme values during grade estimation. Capping thresholds were determined by the decomposition of the domain composite log-probability distributions (see Appendix H). Where possible the observed correlations between elements were also maintained when determining appropriate capping levels. Potential outliers are not markedly clustered in localized high-grade areas and sub-domaining is therefore not warranted. Composites are capped to the defined threshold prior to estimation (Table 14.8).

TABLE 14.8
CAPPING THRESHOLDS AND CONTRIBUTION TABLES

Rock Code	Element	Cap*	Sample Count	Mean*	Number Capped	Capped Mean*	Capped Percentile
10	Ag	4	75	1.36	1	1.34	2
10	Au	0.1	75	0.05	4	0.03	24
10	Cu	0.2	75	0.11	9	0.10	8
10	Pd	0.8	75	0.29	4	0.26	10
10	Pt	0.26	75	0.11	5	0.11	5
15	Ag	No Cap	32	0.94	0	0.94	0
15	Au	0.3	32	0.04	1	0.04	6
15	Cu	0.04	32	0.02	3	0.01	36
15	Pd	1	32	0.38	3	0.30	22
15	Pt	1	32	0.23	1	0.22	2
20	Ag	14	1,885	1.12	2	1.10	2
20	Au	0.6	1,885	0.05	5	0.05	2
20	Cu	1.3	1,885	0.23	3	0.23	1
20	Pd	2	1,885	0.44	23	0.42	5
20	Pt	1.1	1,885	0.13	7	0.12	1
30	Ag	10	1,007	1.71	3	1.70	1
30	Au	0.5	1,007	0.07	11	0.07	7
30	Cu	0.8	1,007	0.11	3	0.11	0
30	Pd	4	1,007	0.53	13	0.47	12
30	Pt	2	1,007	0.22	9	0.20	8
40	Ag	10	538	1.71	1	1.67	3
40	Au	No Cap	538	0.05	0	0.05	0
40	Cu	0.5	538	0.11	5	0.11	1
40	Pd	2	538	0.25	4	0.24	2
40	Pt	1	538	0.11	1	0.11	0
51	Ag	10	214	2.56	1	2.50	3
51	Au	0.3	214	0.06	5	0.05	9
51	Cu	0.25	214	0.07	8	0.07	4
51	Pd	0.8	214	0.31	4	0.20	36
51	Pt	0.4	214	0.14	8	0.09	30

TABLE 14.8 CAPPING THRESHOLDS AND CONTRIBUTION TABLES							
Rock Code	**Element**	**Cap***	**Sample Count**	**Mean***	**Number Capped**	**Capped Mean***	**Capped Percentile**
52	Ag	7	111	2.33	1	2.16	7
52	Au	0.1	111	0.04	5	0.04	2
52	Cu	0.2	111	0.08	3	0.08	2
52	Pd	0.6	111	0.16	4	0.14	13
52	Pt	0.3	111	0.08	2	0.07	7
53	Ag	4.5	51	2.21	2	2.16	2
53	Au	0.16	51	0.06	5	0.06	9
53	Cu	0.25	51	0.11	5	0.10	5
53	Pd	0.7	51	0.26	3	0.21	19
53	Pt	0.3	51	0.11	3	0.11	5
60	Ag	7	927	1.36	7	1.23	10
60	Au	0.4	927	0.04	2	0.04	1
60	Cu	0.7	927	0.11	6	0.11	1
60	Pd	2	927	0.31	5	0.30	2
60	Pt	0.6	927	0.11	9	0.11	2
65	Ag	No Cap	228	1.63	0	1.63	0
65	Au	0.4	228	0.06	3	0.06	4
65	Cu	0.4	228	0.10	4	0.10	2
65	Pd	0.7	228	0.22	12	0.19	14
65	Pt	0.4	228	0.13	9	0.11	12
70	Ag	6	551	1.36	5	1.20	12
70	Au	0.2	551	0.04	6	0.04	4
70	Cu	0.4	551	0.08	2	0.08	0
70	Pd	No Cap	551	0.24	0	0.24	0
70	Pt	0.4	551	0.11	17	0.11	5
75	Ag	7	177	2.01	2	1.88	7
75	Au	0.3	177	0.07	4	0.07	3
75	Cu	0.7	177	0.20	2	0.20	1
75	Pd	2.6	177	0.62	3	0.61	3
75	Pt	0.6	177	0.20	6	0.19	7
80	Ag	10	3746	1.95	25	1.50	23
80	Au	2	3746	0.08	4	0.07	3

Table 14.8 Capping Thresholds and Contribution Tables							
Rock Code	**Element**	**Cap***	**Sample Count**	**Mean***	**Number Capped**	**Capped Mean***	**Capped Percentile**
80	Cu	1q	3746	0.11	3	0.11	0
80	Pd	16	3746	0.70	14	0.64	9
80	Pt	10	3746	0.28	5	0.26	7
90	Ag	10	8515	1.46	5	1.46	0%
90	Au	1	8515	0.07	7	0.07	1%
90	Cu	1.5	8515	0.24	2	0.24	0%
90	Pd	5	8515	0.65	24	0.64	1%
90	Pt	1.8	8515	0.19	18	0.19	2%
101	Ag	6	206	1.63	1	1.61	1
101	Au	0.2	206	0.06	7	0.05	13
101	Cu	0.23	206	0.08	6	0.08	2
101	Pd	1.7	206	0.42	2	0.42	1
101	Pt	0.33	206	0.11	4	0.11	1
102	Ag	4	114	1.64	4	1.61	2
102	AuU	0.14	114	0.06	4	0.05	15
102	Cu	0.3	114	0.10	1	0.09	2
102	Pd	No Cap	114	0.30	0	0.30	0
102	Pt	No Cap	114	0.10	0	0.10	0
103	Ag	5	51	1.79	1	1.73	3
103	Au	0.09	51	0.04	5	0.03	8
103	Cu	0.3	51	0.13	1	0.12	7
103	Pd	0.3	51	0.08	3	0.06	25
103	Pt	0.14	51	0.05	5	0.05	11

* *Ag, Au, Pd and Pt values are g/t, Cu values are %.*

14.9 CONTINUITY ANALYSIS

Three-dimensional continuity analyses (variography) were conducted on the domain-coded uncapped composite data. The downhole variogram was viewed at a 2.0 m lag spacing (equivalent to the composite length) to assess the nugget variance contribution. Standardized omni-directional spherical models were used to model the experimental semi-variograms (see Appendix I).

The experimental semi-variograms were used to define appropriate ranges for Mineral Resource classification. Based on the results of the variography as well as the observed geological continuity and the existing drill hole pattern, a Measured range was defined as 70 m (equivalent to the shortest Pd range), an Indicated range was defined as 120 m (equivalent to the second shortest Pd range and the shortest Pt ranges), and an Inferred range that was extended to 200 m in order to populate the modeled mineralization domains (Table 14.9).

TABLE 14.9
ISOTROPIC EXPERIMENTAL SEMI-VARIOGRAMS

Commodity	Values
NFW 20	
Ag	0.25 + 0.29 SPH(70) + 0.46 SPH(130)
Au	0.45 + 0.38 SPH(9) + 0.17 SPH(120)
Cu	0.31 + 0.31 SPH(8) + SPH(120)
Pd	0.35 + 0.19 SPH(20) + 0.46 SPH(70)
Pt	0.32 + 0.40 SPH(60) + 0.28 SPH(120)
WZone 80	
Ag	0.26 + 0.24 SPH(90) + 0.50 SPH(130)
Au	0.40 + 0.19 SPH(56) + 0.41 SPH(90)
Cu	0.13 + 0.47 SPH(12) + 0.40 SPH(40)
Pd	0.45 + 0.07 SPH(90) + 0.48 SPH(220)
Pt	0.35 + 0.24 SPH(130) + 0.41 SPH(160)
NMain 90	
Ag	0.17 + 0.27 SPH(46) + SPH(120)
Au	0.37 + 0.46 SPH(9) + 0.17 SPH(60)
Cu	0.15 + 0.62 SPH(15) + 0.23 SPH(150)
Pd	0.14 + 0.42 SPH(100) + 0.44 SPH(120)
Pt	0.15 + 0.67 SPH(10) + 0.18 SPH(120)

14.10 BLOCK MODEL

The modeled Marathon mineralization domains extend along a corridor 2,000 m wide and 3,500 m in length. An orthogonal block model was established with the block model limits selected so as to cover the extent of the mineralized structures, the proposed open pit design, and to reflect the general nature of the mineralized domains (Table 14.10). The block model consists of separate variables for estimated grades, rock codes, percent, bulk density and classification attributes. A volume percent block model was used to accurately represent the volume and tonnage contained within the constraining mineralized domains.

TABLE 14.10 BLOCK MODEL SETUP			
Coordinates*	**Origin**	**Block Size (m)**	**Number of Blocks**
Easting (X)	549,000	5.0	400
Northing (Y)	5,403,00	5.0	700
Elevation (max Z) (m)	500	5.0	140

** Coordinates are in UTM NAD27 Zone 16N.*

14.11 GRADE ESTIMATION AND CLASSIFICATION

The Mineral Resource Estimate was constrained by mineralization wireframes that form hard boundaries between the respective composite samples. Block grades were estimated in a single pass with Inverse Distance Cubed ("ID^3") interpolation using a minimum of 3 and a maximum of 12 composites within a 200 m diameter search envelope, with a maximum of three samples per octant. For each grade element an uncapped Nearest Neighbour model ("NN") was also generated using the same search parameters. An NSR block model was subsequently calculated from the estimated block grades.

Bulk density was modeled using Inverse Distance Squared ("ID^2") linear weighting of between three and nine bulk density samples, with a maximum of one sample per drill hole.

Blocks were classified algorithmically based on the local drill hole spacing within each domain. All blocks within 70 m of five or more drill holes were classified as Measured, and blocks within 120 m of four or more drill holes were classified as Indicated. All additional estimated blocks were classified as Inferred.

The average number of samples used for grade estimation per block was as follows:

- Measured: 7.7 drill holes within 70 m.
- Indicated: 10.4 drill holes within 120 m.
- Inferred: 11.4 drill holes within 200 m.

Subsequent to the initial classification, blocks were re-classified using a maximum a-posteriori selection pass which corrected isolated classification artifacts and consolidated areas of similar classification into continuous areas (Appendix F).

14.12 MINERAL RESOURCE ESTIMATE

Mineral Resources reported herein have been constrained within a constraining optimized pit shell. The results from the optimized pit shell are used solely for the purpose of reporting Mineral Resources and include Measured, Indicated and Inferred Mineral Resources. The optimized pit shell was constructed based on the economic parameters listed in Table 14.11. See optimized pit shell in Appendix G.

TABLE 14.11 PIT OPTIMIZATION ECONOMIC PARAMETERS	
Parameter	**Value**
Exchange Rate C$/US$	0.77
Cu US$/lb	3.00
Au US$/oz	1,300
Pt Price US$/oz	900
Pd Price US$/oz	1,100
Ag Price US$/oz	16
Cu float recovery %	93
Au float recovery %	80
Pt float recovery %	80
Pd float recovery %	82
Ag float recovery %	75
Cu smelter payable %	96
Au smelter payable %	90
Pt smelter payable %	88
Pd smelter payable %	93
Ag smelter payable %	90
Smelting, Refining and Shipping C$/t processed	4.00
G&A C$/t processed	1.50
Rock mining Cost C$/t mined	2.00
Process Plant Feed Mining Cost C$/t mined	2.00
Process Plant Cost C$/t processed	7.50
Pit Slope	50°
NSR Contribution per tonne	
Cu C$/%	76.27
Au C$/g	39.03
Pt C$/g	26.47
Pd C$/g	35.00
Ag C$/g	0.45
Marginal Cut-Off C$/t	13.00

All Mineral Resources are reported against an NSR cut-off of $13/t and constrained within an optimized pit shell (Table 14.12).

Highlights of the updated Mineral Resource Estimate are as follows (Table 14.12):

- Measured and Indicated Mineral Resources of 7.1 Moz PdEq with an average grade of 1.24 g/t PdEq;
- Inferred Mineral Resource of 20 koz PdEq with an average grade of 0.94 g/t PdEq;

- Measured and Indicated Mineral Resources of 796 Mlb Cu with an average grade of 0.56%; and
- Inferred Mineral Resource of 3.0 Mlb Cu at an average grade of 0.19%.

For further details on Cu, Pd, NSR block models cross sections and plans, see Appendices C, D and E.

Mineral Resource Estimate sensitivities for differing NSR cut-off values within the Mineral Resource reporting pit shell are summarized in Table 14.13 and for a C$25/t NSR cut-off re-constrained pit shell in Table 14.14.

TABLE 14.12
PIT CONSTRAINED MINERAL RESOURCE ESTIMATE (1-5)

Classification	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
Measured	103,337	0.64	0.21	0.20	0.07	1.5	1.34	2,123	688	463	239	4,964	4,445
Indicated	75,911	0.46	0.15	0.20	0.06	1.8	1.10	1,115	376	333	151	4,371	2,685
Meas + Ind	**179,248**	**0.56**	**0.18**	**0.20**	**0.07**	**1.6**	**1.24**	**3,238**	**1,064**	**796**	**390**	**9,335**	**7,130**
Inferred	668	0.37	0.12	0.19	0.05	1.4	0.95	8	3	3	1	31	21

Note: *Meas = Measured, Ind = Indicated.*

1) *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, marketing, or other relevant issues.*
2) *Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.*
3) *The Inferred Mineral Resource in this estimate has a lower level of confidence that 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 be upgraded to an Indicated Mineral Resource with continued exploration.*
4) *Contained metal totals may differ due to rounding.*
5) *Mineral Resources are reported within an optimized pit shell at a cut-off NSR value of C$13/t.*

TABLE 14.13
PIT CONSTRAINED MINERAL RESOURCE ESTIMATE SENSITIVITIES AT VARIOUS NSR CUT-OFFS*

NSR Cut-off C$/Tonne	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
100	8,025	2.29	0.72	0.41	0.19	2.0	3.95	591	185	72	49	529	1,020
90	11,656	2.01	0.62	0.40	0.17	2.0	3.57	754	231	103	64	742	1,336
80	17,036	1.76	0.53	0.39	0.15	1.9	3.20	963	290	146	84	1,033	1,754
75	20,780	1.64	0.49	0.38	0.14	1.9	3.02	1,092	327	175	96	1,243	2,021
70	25,003	1.53	0.45	0.38	0.14	1.8	2.86	1,227	365	207	109	1,478	2,302
65	29,977	1.42	0.42	0.37	0.13	1.8	2.71	1,372	408	242	124	1,768	2,610
60	35,845	1.33	0.39	0.36	0.12	1.8	2.56	1,529	454	281	141	2,108	2,946

TABLE 14.14
PIT CONSTRAINED MINERAL RESOURCE ESTIMATE SENSITIVITIES AT VARIOUS NSR CUT-OFFS*

NSR Cut-off C$/Tonne	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
55	42,741	1.23	0.37	0.34	0.12	1.8	2.41	1,696	503	322	159	2,508	3,310
50	51,328	1.14	0.34	0.33	0.11	1.8	2.26	1,881	561	371	180	2,995	3,724
45	61,639	1.05	0.31	0.31	0.10	1.8	2.11	2,075	620	427	204	3,579	4,173
40	74,246	0.96	0.29	0.30	0.10	1.8	1.95	2,280	687	488	232	4,278	4,664
35	88,778	0.87	0.27	0.28	0.09	1.8	1.81	2,483	759	552	260	5,066	5,164
30	106,507	0.79	0.24	0.26	0.09	1.7	1.66	2,695	836	618	291	5,975	5,691
25	127,485	0.71	0.22	0.24	0.08	1.7	1.52	2,902	914	683	324	7,005	6,221
20	151,144	0.64	0.20	0.22	0.07	1.7	1.38	3,086	991	746	360	8,110	6,710
15	172,876	0.58	0.19	0.21	0.07	1.6	1.27	3,213	1,050	789	384	9,076	7,060
13	**179,916**	**0.56**	**0.18**	**0.20**	**0.07**	**1.6**	**1.24**	**3,238**	**1,064**	**796**	**390**	**9,335**	**7,130**
10	187,289	0.54	0.18	0.20	0.07	1.6	1.20	3,270	1,078	809	397	9,640	7,231
5	193,180	0.53	0.18	0.19	0.07	1.6	1.17	3,286	1,087	813	404	9,813	7,274
0.01	196,061	0.52	0.17	0.19	0.06	1.6	1.15	3,290	1,091	817	403	9,840	7,280

***** *Within same pit shell as in Table 14.12.*

TABLE 14.15
PIT RE-CONSTRAINED MINERAL RESOURCE ESTIMATE SENSITIVITY AT C$25/TONNE NSR CUT-OFF

Classification	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
Measured	70,792	0.82	0.25	0.25	0.09	1.5	1.67	1,864	578	387	194	3,510	3,794
Indicated	45,279	0.60	0.19	0.25	0.07	1.9	1.40	871	272	252	106	2,817	2,032
Meas & Ind	**116,071**	**0.73**	**0.23**	**0.25**	**0.08**	**1.7**	**1.56**	**2,735**	**850**	**639**	**300**	**6,326**	**5,826**
Inferred	144	0.62	0.16	0.28	0.05	0.9	1.41	3	1	1	0	4	7

Note: *Meas = Measured, Ind = Indicated.*

14.13 VALIDATION

The block model was validated visually by the inspection of successive section lines in order to confirm that the block models correctly reflect the distribution of high-grade and low-grade values. An additional validation check was completed by comparing the average grade of the constrained capped composites to the model block grade estimates at zero cut-off. Capped composite grades and block grades were also compared to the average Nearest Neighbour block estimate (Table 14.15). No significant issues were noted.

TABLE 14.16
VALIDATION STATISTICS FOR GRADE BLOCK ESTIMATES

Rock Code	Element	Mean*	Capped Mean*	NN*	Estimate*
10	Ag	1.36	1.34	1.59	1.59
10	Au	0.05	0.03	0.04	0.04
10	Cu	0.11	0.10	0.10	0.09
10	Pd	0.29	0.26	0.26	0.24
10	Pt	0.11	0.11	0.12	0.11
15	Ag	0.94	0.94	1.02	1.04
15	Au	0.04	0.04	0.03	0.04
15	Cu	0.02	0.01	0.02	0.01
15	Pd	0.38	0.30	0.36	0.26
15	Pt	0.23	0.22	0.20	0.20
20	Ag	1.12	1.10	1.10	1.18
20	Au	0.05	0.05	0.05	0.05
20	Cu	0.23	0.23	0.20	0.21
20	Pd	0.44	0.42	0.36	0.37
20	Pt	0.13	0.12	0.11	0.11
30	Ag	1.71	1.70	1.60	1.60
30	Au	0.07	0.07	0.06	0.07
30	Cu	0.11	0.11	0.10	0.10
30	Pd	0.53	0.47	0.46	0.44
30	Pt	0.22	0.20	0.21	0.20
40	Ag	1.71	1.67	1.58	1.58
40	Au	0.05	0.05	0.05	0.05
40	Cu	0.11	0.11	0.11	0.11
40	Pd	0.25	0.24	0.24	0.23
40	Pt	0.11	0.11	0.11	0.11
51	Ag	2.56	2.50	2.32	2.38

TABLE 14.16 **VALIDATION STATISTICS FOR GRADE BLOCK ESTIMATES**					
Rock Code	**Element**	**Mean***	**Capped Mean***	**NN***	**Estimate***
51	Au	0.06	0.05	0.04	0.04
51	Cu	0.07	0.07	0.07	0.06
51	Pd	0.31	0.20	0.27	0.19
51	Pt	0.14	0.09	0.13	0.09
52	Ag	2.33	2.16	1.90	1.93
52	Au	0.04	0.04	0.03	0.03
52	Cu	0.08	0.08	0.08	0.07
52	Pd	0.16	0.14	0.13	0.12
52	Pt	0.08	0.07	0.07	0.06
53	Ag	2.21	2.16	2.16	2.16
53	Au	0.06	0.06	0.06	0.05
53	Cu	0.11	0.10	0.09	0.10
53	Pd	0.26	0.21	0.18	0.18
53	Pt	0.11	0.11	0.08	0.09
60	Ag	1.36	1.23	1.27	1.26
60	Au	0.04	0.04	0.04	0.04
60	Cu	0.11	0.11	0.10	0.10
60	Pd	0.31	0.30	0.30	0.29
60	Pt	0.11	0.11	0.12	0.11
65	Ag	1.63	1.63	1.50	1.48
65	Au	0.06	0.06	0.05	0.05
65	Cu	0.10	0.10	0.08	0.08
65	Pd	0.22	0.19	0.22	0.19
65	Pt	0.13	0.11	0.12	0.11
70	Ag	1.36	1.20	1.28	1.21
70	Au	0.04	0.04	0.04	0.03
70	Cu	0.08	0.08	0.08	0.08
70	Pd	0.24	0.24	0.24	0.23
70	Pt	0.11	0.11	0.11	0.11
75	Ag	2.01	1.88	1.73	1.67
75	Au	0.07	0.07	0.06	0.06
75	Cu	0.20	0.20	0.15	0.17
75	Pd	0.62	0.61	0.52	0.53
75	Pt	0.20	0.19	0.18	0.17

TABLE 14.16 VALIDATION STATISTICS FOR GRADE BLOCK ESTIMATES					
Rock Code	**Element**	**Mean***	**Capped Mean***	**NN***	**Estimate***
80	Ag	1.95	1.50	1.52	1.55
80	Au	0.08	0.07	0.07	0.07
80	Cu	0.11	0.11	0.09	0.09
80	Pd	0.70	0.64	0.65	0.64
80	Pt	0.28	0.26	0.26	0.27
90	Ag	1.46	1.46	1.55	1.57
90	Au	0.07	0.07	0.06	0.07
90	Cu	0.24	0.24	0.22	0.22
90	Pd	0.65	0.64	0.52	0.53
90	Pt	0.19	0.19	0.16	0.16
101	Ag	1.63	1.61	1.58	1.50
101	Au	0.06	0.05	0.06	0.05
101	Cu	0.08	0.08	0.09	0.08
101	Pd	0.42	0.42	0.46	0.39
101	Pt	0.11	0.11	0.12	0.11
102	Ag	1.64	1.61	1.80	1.68
102	Au	0.06	0.05	0.07	0.05
102	Cu	0.10	0.09	0.11	0.09
102	Pd	0.30	0.30	0.30	0.27
102	Pt	0.10	0.10	0.11	0.09
103	Ag	1.79	1.73	1.81	1.84
103	Au	0.04	0.03	0.03	0.03
103	Cu	0.13	0.12	0.15	0.13
103	Pd	0.08	0.06	0.05	0.05
103	Pt	0.05	0.05	0.04	0.04

Note: *Ag, Au, Pd and Pt values are g/t: Cu values are %.*

A check for local estimation bias was completed by plotting vertical swath plots of the estimated ID^3 block grade and the Nearest Neighbour grade (see Appendix J). No significant discrepancies between the ID^3 and NN model grades were noted.

As a further check of the Mineral Resource model the total volume reported at zero cut-off was compared by domain with the calculated volume of the defining mineralization wireframe (Table 14.16). All reported volumes fall within acceptable tolerances.

Table 14.17 Comparison Between Wireframe Volume and Estimated Volume			
Domain	**Wireframe (000 m^3)**	**Estimate (000 m^3)**	**Ratio**
MAG_101	711	711	100%
MAG_102	405	404	100%
MAG_103	145	143	102%
MBR_30	3062	3062	100%
MBRFW_40	1763	1762	100%
MHW_51	655	656	100%
MHW_52	333	335	100%
MHW_53	158	159	99%
NFW_20	6462	6462	100%
NHW_10	324	326	99%
NHW2_60	3827	3822	100%
NHW3_70	2175	2175	100%
NHW4_65	840	841	100%
NHW5_15	90	91	99%
NHW6_75	437	438	100%
NMAIN_90	42284	42259	100%
WZONE_80	10294	10294	100%
Total	**73964**	**73939**	**100%**

P&E considers that the information available for the Marathon Deposit is reliable, demonstrates consistent geological and grade continuity, and satisfies the requirements for a Mineral Resource.

15.0 MINERAL RESERVE ESTIMATES

This section is not applicable to this Technical Report.

16.0 MINING METHODS

This section is not applicable to this Technical Report.

17.0 RECOVERY METHODS

This section is not applicable to this Technical Report.

18.0 PROJECT INFRASTRUCTURE

This section is not applicable to this Technical Report.

19.0 MARKET STUDIES AND CONTRACTS

This section is not applicable to this Technical Report.

20.0 ENVIRONMENTAL STUDIES, PERMITS, AND SOCIAL OR COMMUNITY IMPACTS

20.1 ENVIRONMENTAL STUDIES

Detailed and comprehensive environmental baseline studies had been undertaken and essentially completed between 2005 to 2014 at which time the Project was put on hold. In 2008, Marathon PGM Corporation had retained True Grit Consulting Ltd., and later in 2009 had engaged EcoMetrix to assist in the development of a comprehensive environmental research program to support the acquisition of all the needed federal and provincial approvals and permits. Comprehensive data collection had been initiated in 2008 and much of this information was compiled with other Project information into a 2010 detailed Project Description to commence the Federal Environmental Assessment process. under the Canadian Environmental Assessment Act (CEAA, 2012). Subsequently, in June 2012 an Environmental Impact Statement (EIS) Report was submitted to a federal and provincial Joint Review Panel (JRP) which had been formed for the Project. The JRP found the EIS and supportive information to be sufficient in 2013 and was ready to proceed to the Panel Hearings. Prior to the hearings, the EA was put on-hold and remains in that state at the time of preparing this Technical Report.

The environmental approval process can be expected to be revived, under CEAA 2012, should a Project be assessed to be economically and technically feasible. The permitting for construction and operation will commence following approval of the EA by the provincial and federal Environment Ministers.

20.1.1 Environmental Baseline Studies

A complete set of biophysical and socioeconomic studies have been conducted for the Project site and potential operations; these provide an assessment of the Project alternatives, nature, extent and duration of potential biophysical and socioeconomic effects resulting from proposed mine development, operation and closure. The data has been collected at the site since as early as 2006 and consistently (i.e. seasonally and/or annually) since 2007. The following aspects of the environment have been studied in detail:

- **Air quality and climate** – The nearby Marathon airport station provided detailed baseline meteorology. Average annual precipitation is 826 mm, 238 mm as snow, 588 mm as rain. Site air quality was determined to be very good re air-borne particulates and contaminants of potential concern. When the Project is in full operation, air quality is expected to meet all provincial and federal criteria at the nearest sensitive receptor location, except possibly for NOx which could exceed provincial levels along the access road depending on which concentration transport option is selected. The potential effect of climate change on the Project was evaluated and found to be limited during years of operation and was factored into the decision-making and conceptual design processes for site closure and reclamation,

- **Noise** – background measurements were obtained. Assessments of noise impacts to noise sensitive receptors at regional cottages, establishments on Highway 17 and at facilities that could be constructed in Marathon. All noise levels were predicted to be below provincial criteria.

- **Geochemical assessment of mined material**. - The sulphur content of the majority (85-90%) of mine rock will be very low (less than 0.3% S) and represent no risk of acid generation when that material is stored in on-land stockpiles that are common at mining operations. About 6% of the mine waste rock is estimated to be acid generating and will be managed to prevent acid rock drainage ("ARD"). Residual sulphides (pyrrhotite) will be removed by flotation in a dedicated circuit in the process plant and securely stored under a water cover (EcoMetrix, 2012).

- **Terrain and soils** – soil characteristics and amounts of soil that will affected or relocated by the Project have been identified. Soil stockpiling and use in reclamation are to be key aspects for site closure. No significant adverse effects on terrain and soils are predicted in relation to the Project.

- **Ecosystem mapping and vegetation** – approximately 650 ha of vegetation is to be cleared by the Project. An overview of the potential effects on the vegetation community during each phase of the Project was completed in 2012. The Valued Ecosystem Components ("VECs") that were assessed included forest cover, non-forest cover (including rocky barrens and wetlands), regionally and provincially rare species and protected species. The closure plan proposes 70% of the forest cleared for site infrastructure can be replanted.

- **Aquatic resources** - Aquatic baseline studies were to assess species composition abundance, spatial distribution, biological and habitat characteristics of the fish and benthic invertebrate communities of the local aquatic ecosystem. In consultation with Federal agencies, a Preliminary Fish Habitat and Compensation Strategy was developed and submitted to the Federal-Provincial Joint (Environmental Assessment) Review Panel in January 2014. Approximately 1.8 ha affords direct habitat (fish bearing) that will require compensation. Of this area approximately 0.35 ha affords direct habitat that will need to be compensated under section 35(2) of the Fisheries Act and 1.45 ha is required under Section 27.1 of the Metal Mining Effluent Regulations, due to loss of fish frequented habitat associated with the footprint of stockpiles and tailings impoundment structures.

- **Wildlife** – extensive baseline assessments of terrestrial habitat and species were completed; a rich diversity was recorded. Eight species of amphibians, 18 mammals, several bats, 88 bird species including nine species of waterfowl and four raptors were observed. Of the 650 ha of forested habitat, as well as a small amount of aquatic influence habitat associated with the aquatic features, that would be removed for the Project development, some will be re-established by mine closure actions – other will re-develop naturally.

- **Species at risk** – Some habitat and potential habitat loss would occur but limited to footprint of infrastructure. In some cases, loss can be reversible and similar habitat is available in close proximity and in most cases should not affect populations. Potential risks included transit and winter habitat for woodland caribou, and loss or change of habitat for four species of birds. In consultation with the Provincial government, a Proposed Caribou Habitat Offsite Mitigation report was submitted to the JRP to provide 115 ha of restoration of natural forest ecosystems to benefit woodland caribou (Northern BioScience, 2014).

- **Hydrology** – a detailed baseline hydrological assessment was completed in 2012. As anticipated, the hydrology of the region is characterized by large snowmelt runoff during the freshet the spring and this tapers off to low summer base flow, from July to September. The lowest stream flow typically occurs in the winter months. Surface water analyses indicated that Project area waters are generally of high quality, with most parameters meeting Provincial Water Quality Objectives ("PWQO") for the protection of aquatic life. Iron is the parameter that most commonly exceeds its PWQO at most locations, while cadmium, cobalt, copper and phosphorous also exceeded their respective PWQOs (or interim PWQOs) at more than one of the selected locations.

- **Hydrogeology** - hydrogeological investigations consisting of borehole drilling, drill core observation, monitoring and sampling at the Project site were completed. The information was used to build site models to describe current hydrogeological conditions and to assess impacts of the Project development and on closure.

- **Archeological** – no archeological heritage sites were located in extensive surveys.

While the Marathon Project was suspended and the EA put on hold in early 2014, it is anticipated no significant extra baseline studies will needed. The only exceptions might be those required by government agencies, or those that may emerge concerning the impact of minor alterations in the Project Description.

20.2 ENVIRONMENTAL REGULATIONS AND PERMITTING

The federal and provincial Environmental Assessment ("EA") processes and permitting framework for metal mining in Canada are well established. Following the EA approval, the Marathon Project will enter a permitting phase which will regulate the Project through all phases - construction, operation, closure, and even post-closure. Prior to and throughout all of these processes, consultation with, and advice from, local First Nations and Métis and local communities are considered essential.

20.2.1 Project Environmental Assessment

An Environmental Assessment is required for the Marathon Project under the federal *Canadian Environmental Assessment Act* ("CEA Act"). It is understood that a Harmonization Order was issued as a result of a Voluntary Agreement by the former owner, Stillwater Canada Inc., to coordinate the environmental assessment with Ontario under the Ontario *Environmental Assessment Act* ("OEA Act") and remains in effect.

20.2.2 Federal Environmental Assessment Process

In 2012, the 1992 Canadian Environmental Assessment Act was updated to CEAA 2012. CEAA 2012 has been recently updated under Federal Legislation C-69. However, Generation Mining submitted a response to CEA Agency on September 27, 2019 confirming that the Project will continue the assessment under the process established by CEAA 2012. Under CEAA 2012, 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.

It had been determined that the Project is subject to review under the 2012 CEA Act. This determination arose from the requirement for Fisheries and Oceans Canada ("DFO"), Transport Canada ("TC") and Natural Resources Canada ("NRCan") to issue permits, approvals, authorizations and/or licenses pursuant to the *Fisheries Act*, the *Navigable Waters Protection Act* and the *Explosives Act*, respectively.

The development of Marathon mine pits and to a lesser extent processed solids management facility ("PSMF"), aka tailings management, can be considered to adversely impact fish habitat - a federal EA can be triggered by that aspect alone. With careful design, the anticipated impact of the Project on fisheries could be considered limited. The Harmful Alteration, Disruption or Destruction of Fish Habitat ("HADD") is anticipated to be small.

The CEA Agency recommended that the federal Minister of the Environment refer the Project to a Review Panel and in October 2010, the federal Minister of the Environment, announced that the Project would undergo an independent review panel-advised federal EA. A panel-driven EA process is usually considered to be thorough, time-consuming and costly.

20.2.3 Provincial Environmental Assessment Process

The Ontario EA process is administered by the recently renamed Ministry – the Ministry of Environment, Conservation and Parks ("MECP"). In addition to promoting responsible environmental management, interested third parties, e.g. members of the public can comment on a mining project and request the MECP minister call for an EA.

Ontario mining projects in Ontario are not often subject to the provincial EA Act ("OEA") because many mine development activities are not specified in the relevant Act. However, specifications do include:

- Transfer or Disposition of Crown resources including land;
- Building electric power generation facilities or transmission lines;
- Constructing new roads and transport facilities; and
- Establishing a PSMF (tailings management facility).

Other than some standing timber, no Crown resources are affected by the Marathon Project.

In 2011, following consultation with federal and provincial governments, aboriginal groups and stakeholders, the then Project owner (Stillwater) took the progressive approach of bringing the Project under the OEA Act. This resulted in a Voluntary Agreement ("VA") with the Province of Ontario to have the Project subject to the OEA Act. The agreement provided for an assessment of the entire Project under the OEA Act in order to permit the federal and provincial environmental assessment process to be implemented in a way to coordinate scope, timing, reduce risk and procedures.

A Joint (federal-provincial) Review Panel ("JRP") was established which would manage a process to complete a single, comprehensive assessment of both the possible impacts and benefits of the Project in advance of any federal or provincial government decisions. After the conclusion of the review process, the JRP would prepare a report setting out its conclusions and recommendations relating to the EA of the Project.

The Project information was found to be sufficient in December 2013, and Panel Hearings were scheduled but before they commenced the JRP process was suspended in 2014. The project EA could be expected to restart as the Marathon Project moves ahead after confirmation of feasibility.

20.2.4 Environmental Approval Requirements

A number of approvals, permits and authorizations will be needed following the EA process, and in advance of construction and operations. Federal items are:

- Authorization for alteration to fish habitat, including a HADD under the Fisheries Act;
- Approval to amend Schedule 2 of the Metal Mining Effluent Regulations with respect to watercourses frequented by fish; and
- Explosives handling license.

Provincial approvals, permits and authorizations are numerous and include:

- Approvals for emissions, discharges and waste management,
- Permit to take water;
- Work permit for construction of mine facilities on Crown Land;
- Building and land use permits;
- Endangered species permit – woodland caribou may be a focus;
- Bulk fuel, domestic wastewater treatment permits;
- Forest license – allowance for clearances;
- Approval of health and safety procedures and management, as well as emergency provisions; and
- Approval of a financed Closure Plan.

To expedite the authorization process after EA approval, many draft documents such as fisheries compensation, off-site caribou mitigation and closure plan have been submitted during the EA process. In addition, several municipal permits are anticipated to be required, e.g. accommodation and catering as well as modifications to rail loading and port facilities.

20.3 SOCIAL AND COMMUNITY REQUIREMENTS

Up to when the Project was suspended in 2014, a series of consultations and negotiations and/or agreements, had been engaged with local aboriginal communities and the Town of Marathon. In the last five years, social and community consultation activity have occurred, however, at a level appropriate for the programs being conducted at the property at the time.

20.3.1 Aboriginal Communities

The Project site is within the boundaries of those lands that fall within the Robinson-Superior Treaty. It is also within lands claimed by Biigtigong Nishnaabeg (Pic River First Nation ["PRFN"]) as its exclusive traditional territory. Initially several First Nations and Métis groups were identified as having interest in the Project. However, through consultation with and direction from Federal and Provincial governments during the EA process, it was determined that there are six aboriginal groups having interest in the Project based on asserted aboriginal and traditional rights and/or current land uses and proximity to the Project.

MOU's, Consultation Protocols and Confidentiality Agreements had been signed between the previous Project owners and both the Pic Mobert and Pic River First Nations. "Capacity Funding Agreements" for the EA process had been signed with other aboriginal groups identified and participating in the EA for the Project

20.3.2 Other Communities

Extensive consultation activities were made with the public, various stakeholder organizations and with government agencies. These groups had the opportunity to review and provided feedback on plans and Project alternatives, expert reports and provide comments through the public and private meetings.

Although large scale "Townhall" style engagements haven't occurred since the Project was put on hold, private meetings, engagement and consultations still occur with the Town of Marathon and all the six aboriginal groups who expressed an interest in the Project. Maintaining these relationships will enable a smooth re-establishment and refreshment of comprehensive consultations if the Project is determined to be economically and technically feasible.

20.4 MINE CLOSURE

A draft Conceptual Closure Plan was prepared in 2012 to meet the objective that the Project site would be closed in a manner that minimizes residual social and natural environment impacts.

An updated Closure Plan can be expected that will also satisfy all regulatory requirements and be consistent with best Canadian industrial practice. The Plan will be submitted to the Ontario Ministry of Energy, Northern Development and Mines is expected to include:

- Results of consultations with First Nations, Métis, local communities and provincial agencies;
- Provision for progressive closure of PSMF (tailings), WRSF (waste rock storage) and mined-out pits;
- Restoration of creek diversions, ponds and any diked-off lake sections; and
- Restoration of plant and infrastructure sites.

Some key aspects of the 2012 Closure Plan can be expected to be included in a new Plan, including:

- Allowing mined-out pits to naturally flood;
- Mine rock and/or process solids disposed in the earliest mined-out pits in later years of operations;
- Boulder fencing around the ridge of open pits;
- Mine openings expert-examined for long term stability;
- All buildings, infrastructure and equipment removed from the Project site;
- Re-establishment of natural water courses and drainage routes;
- All disturbed surfaces including the PSMF prepared for assisted and natural re-vegetation; and
- Provide ongoing monitoring of the PSMF and WRSF for a period of time sufficient to confirm suitable water quality and ongoing stability of the facility.

For closure planning and financial assurance considerations closure can be addressed in four phases:

- Construction and pre-production;
- Production and modification of production;
- End of operations; and
- Post-closure.

The closed-out Marathon Project site can essentially be a "walk-away" situation, that is, no significant post operation active treatment would be required. Surface water quality should return to pre-mining conditions and the flooded pits will be allowed to self-establish aquatic biology.

21.0 CAPITAL AND OPERATING COSTS

This section is not applicable to this Technical Report.

22.0 ECONOMIC ANALYSIS

This section is not applicable to this Technical Report.

23.0 ADJACENT PROPERTIES

23.1 INTRODUCTION

Since its acquisition of the Marathon Property in January 2004, Marathon PGM Corp. had systematically added to its land position through the periodic optioning, purchasing and staking of adjacent lands as has Gen Mining in 2019. The PGM-Cu mineralization appears to extend onto some of these lands that had been the subject of drilling by Anaconda in the 1960s. A 12-km strike length of the mineralized trend that runs along the contact between the intrusive gabbro of the Coldwell Complex and the older volcanic and sedimentary rock is now covered by the land package controlled by Gen Mining.

23.2 REGIONAL PROPERTIES

The Marathon Deposit is one of two contact-type PGM deposits in the Coldwell Complex that have been described in the literature (Good and Crocket, 1994). The second is the Geordie Deposit which Marathon PGM Corp. acquired in 2008 and is located within the current Gen Mining Marathon Palladium-Copper Property boundaries.

Cu-Ni-PGM exploration in northern Ontario has been focused in five regions, as follows: Marathon to Manitouwadge area; Nipigon region; Shebandowan district; Norton-McFaulds Lake Group or Ring of Fire region; and, the East Bull Lake District or River Valley area (Figure 23.1). These five regions have drawn interest from multiple exploration and mining companies because of the high potential for further Cu- Ni-PGM discovery and development.

FIGURE 23.1 LOCATION MAP OF OTHER PGM (CU, NI) EXPLORATION PROJECTS IN NORTHERN ONTARIO

Source: *Stillwater Canada Inc. (2014)*

23.2.1 Lac Des Iles Deposit

One similar deposit is the Lac des Iles Mine. Although the Lac des Iles Deposit, owned and operated currently by North American Palladium Ltd. ("NAP") (PDL:TSX), is geographically related to and has some similarities with the Marathon Deposit, there are many dissimilarities, including age of formation (2.69 Ga for Lac des Isles compared with 1.1 Ga for Marathon PGM-Cu), dominant mineralization textures, and overall style of mineralization and metal ratios.

The Marathon Deposit contains mineralization textures that are considered fairly typical of contact style mineralization, while textures of the Lac des Iles Deposit display some fundamental differences to that type of deposit. The Marathon Deposit is very fresh and coarse grained when compared with Lac des Iles. The Lac des Iles Deposit is metamorphosed and hydrothermally altered, which translates to a significant difference in metallurgy. Despite the lower palladium grade in the Marathon Deposit, recoveries are similar to Lac des Iles due to the differences in alteration and texture.

The Lac des Iles Deposit is not localized near the contact between the host intrusion and the country rocks and evidence of the assimilation of the host rocks is entirely lacking. Instead, the mineralization at Lac des Iles has many features in common with layered intrusion-hosted deposits, in which pulses of primitive magma introduced the PGM. However, unlike the quiescent magma chambers of most layered deposits, the magmas at Lac des Iles were intruded energetically, forming breccias and magma mingling textures.

The mineralization at Lac des Iles has less Pt with respect to Pd, compared to the Marathon Deposit and most other PGM deposits. With Pd:Pt ratios of 10:1, Lac des Iles stands in marked contrast to other deposits in the general vicinity (e.g. the Marathon) where Pd:Pt ratios average approximately 4:1.

23.2.2 Thunder Bay North Property

The Thunder Bay North property, formerly held by Australia's Magma Metals Pty Ltd. is located approximately 50 km north-northeast of Thunder Bay and covers an area of approximately 700 km^2. Magma Metals was incorporated in 2005 and listed on the TSX in November 2009. The Thunder Bay North Property was its principal project. Panoramic Resources Ltd ("PAN:ASX") purchased the property from Magma in 2012.

Diamond drilling on the northwestern part of the Current Lake Intrusive Complex formed the basis for an initial Mineral Resource Estimate. Currently 145,000 m of diamond drilling has been carried out. Magma Metals has initiated a preliminary assessment of the Project and released a PEA in 2011 of its Thunder Bay North PGM-Cu-Ni Project. The PEA was written by AMEC Americas (press release; February 9, 2011). In 2012 Magma Metals was acquired by Panoramic Resources Ltd. Currently Rio Tinto Exploration Canada Inc. ("RTEC") holds an option to earn a 70% interest in the Property by spending up to $20M over 5 years. In January 2017, RTEC confirmed that it had achieved the minimum expenditures on the project. In 2017 the reported Mineral Resources were: Indicated: 9.83 Mt at 2.34/t Pt-Eq for 741,000 Pt-Eq oz and Inferred Mineral Resources of 0.53 Mt at 2.87 Pt-Eq for 49,000 Pt-Eq oz (http://panoramicresources.com/thunder-bay-north-pgm-project).

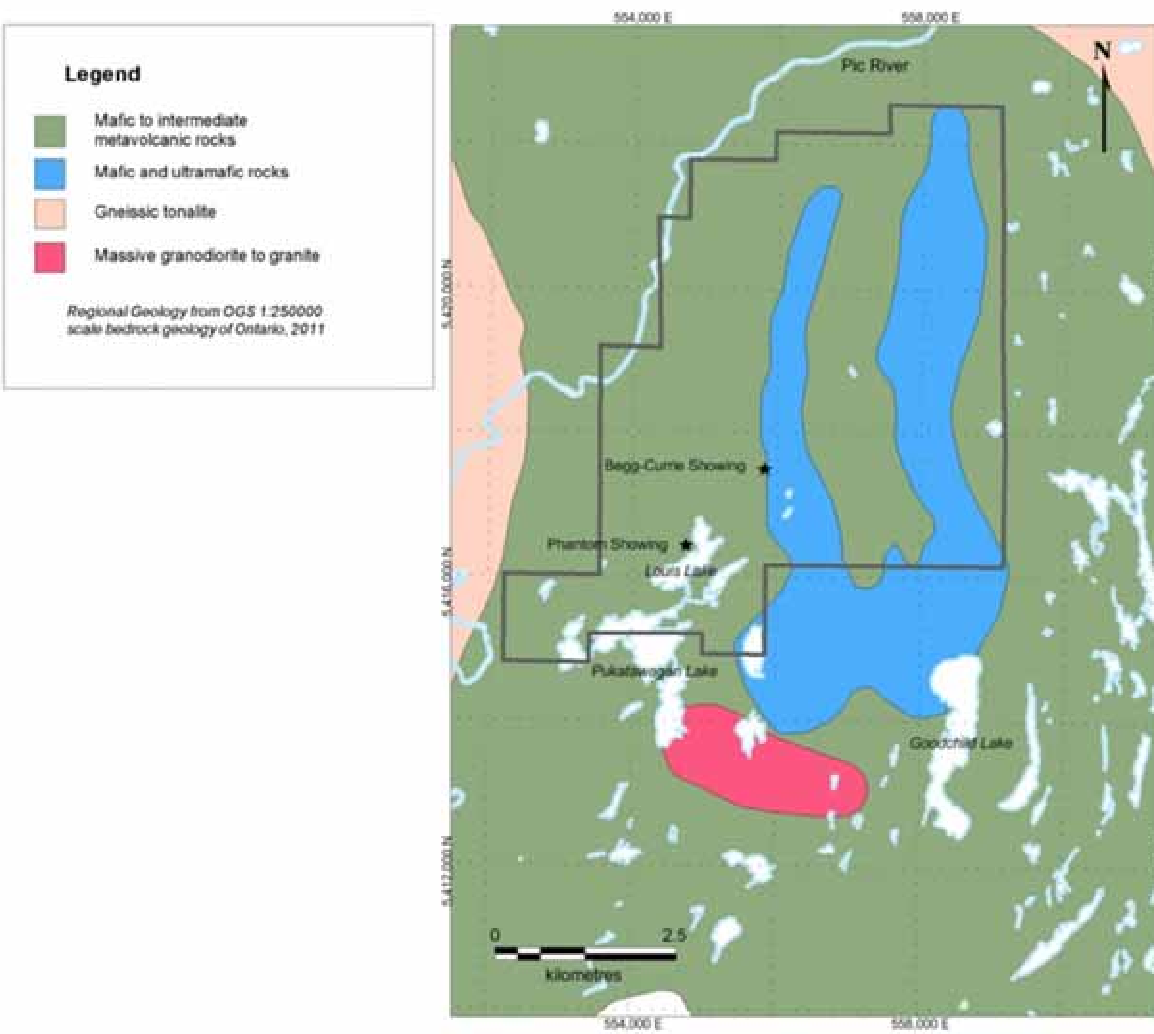
23.2.3 Goodchild Property

The Goodchild property is located 20 km northeast of the town of Marathon and is accessible by helicopter out of the Marathon airport. The Property consists of approximately 19 contiguous mining claims held by Benton Resources Inc.

The Goodchild property is located within the Heron Bay Archean Greenstone Belt. It is underlain by an assemblage of supracrustal rocks, predominantly mafic metavolcanic rocks (basalts) with minor interflow sedimentary rocks including graphitic slate, argillites and iron formation. The supracrustal rocks have been metamorphosed to lower amphibolite facies and trend northeast. The sequence has been intruded by the Goodchild Ultramafic complex which is centered north of Goodchild Lake (Figure 23.2).

The Goodchild Ultramafic complex has a general north-south trend and is comprised of two limbs. The complex is identified as a magnetic high on airborne surveys and measures 8 km long by 4 km wide. The major rock units are serpentinized peridotite, dunite and minor spinifex textured komatiite. Minor units of pyroxenite and gabbro have also been observed.

FIGURE 23.2 MAP OF THE GOODCHILD ULTRAMAFIC COMPLEX



__Note:__ Claim boundary for Benton Capital property. Regional geology from the Ontario Geological Survey.
__Source:__ Stillwater Canada Inc. (2014)

23.2.3.1 Beggs-Currie and Phantom Occurrences

Two main showings referred to as Beggs-Currie and Phantom occur within the boundary of the Benton Resources Inc. claims (Figure 23.2). These occurrences have a long history of exploration.

The Beggs-Currie Showing consists of a sulphide breccia zone along the contact between the mafic volcanic rocks and ultramafic intrusive rocks. It has been described as "composed of 50% ultramafic rock and 50% massive pyrrhotite + chalcopyrite". Grab samples from this zone have returned values up to 12.6% Ni and 0.295% Co.

The Phantom showing is a quartz vein hosted pyrrhotite + chalcopyrite zone associated with shear zones. This style of mineralization has been observed in the footwall mafic volcanics at the

Beggs-Currie Showing. Grab samples at the Phantom Showing have returned values of up to 1.27% Ni and 0.2% Cu. The Beggs-Currie showing has a higher Ni tenor relative to the Phantom Showing.

23.2.4 Other Occurrences in the Nipigon Region

Other known early stage exploration Cu-Ni-PGM properties within the Nipigon Region are listed in Table 23.1.

TABLE 23.1
EARLY STAGE CU-NI-PGM PROSPECTS IN THE NIPIGON REGION

Property	Location	Company	Rock Type	Mineralization	Sample Grades
Eva Kitto	153 km NE of Thunder Bay	Bethlehem Mining Corp, Minfocus Exploration, Rainy Mountain	Ultramafic intrusion		
Seagull	60 km NE of Thunder Bay	Trillium North Minerals, Black Panther Mining Corp. & Rainy Mountain Corp.	Gabbro-Pyroxenite	Disseminated Chalcopyrite	0.44 m @7.9 g/t TPGM 1.72 m @ 3.25 g/t TPGM, 4.28 m @ 1.77 g/t TPGM
Nipigon Reef Seagull North	North of Seagull	Minfocus Exploration Ltd.	Gabbro-Pyroxenite Intrusion		
Weese- Luella	25 km north of Armstrong	Minfocus Exploration Ltd.	Anorthosite, Gabbro-peridotite		3.2% Cu, 1.3% Ni over 10 m
Awkward Lake	50 km south of Armstrong	Cascadia International Resources Inc.	Gabbro	Disseminated to massive chalcopyrite, pentlandite and pyrrhotite	Drilling – 0.21% Cu, 0.33% Ni over 4.5 m grab sample in massive sulphide, 4.53% Ni
Sunday Lake	25 km NE of Thunder Bay	Transition Metals Corp., Implats	Mafic to ultramafic intrusion	Semi-massive vein; disseminated to blebby Cu and Po	3.22 g/t TPGM over 20.2 m
Hele	75 km NE of Thunder Bay	Transition Metals Corp., HTX Minerals Corp.	Mafic-ultramafic intrusion		No significant mineralization

Note: *TPGM = total PGM.*

24.0 OTHER RELEVANT DATA AND INFORMATION

24.1 INTRODUCTION

Micon International Limited ("Micon") was retained by Marathon PGM Corporation to update a Feasibility Study on the Marathon PGM-Cu property near Marathon, Ontario. The previous Feasibility Study was completed in January 2010 and the full version is available on SEDAR.

As part of this update of the study Micon prepared an updated Mineral Resource Estimate, a new open pit mine design and new mine schedule, and a new Mineral Reserve Estimate. Met-Chem Canada Inc. ("Met-Chem") was retained through, and under the supervision of, Micon to update the process plant design and process and infrastructure capital and operating cost estimates. AMEC Earth and Environmental ("AMEC") and EcoMetrix Incorporated ("EcoMetrix") were retained directly by Marathon PGM to review process solids disposal methods and costs, and environmental and permitting issues, respectively. Additional metallurgical testwork was undertaken by Xstrata Process Support ("XPS") under the supervision of Micon. Andrew Falls of Exen Consulting Services ("Exen") was retained directly by Marathon PGM to provide an updated analysis of the markets for the metals to be produced from the Marathon PGM-Cu deposit.

The 2010 technical report (Micon) presents the updated Mineral Resource and Mineral Reserve Estimates and discusses the results of the updated Feasibility Study for the Marathon PGM-Cu deposit.

The effective date of the updated Feasibility Study is 24 November 2009. The Qualified Persons responsible for this report are the following: Charley Murahwi, P.Geo., Micon International Limited Sam Shoemaker, MAusIMM, Micon International Limited Richard Gowans, P.Eng., Micon International Limited John Lemieux, ing., AMEC Earth & Environmental Christopher Jacobs, C.Eng., MIMMM, Micon International Limited.

The Marathon PGM-Cu project is located approximately 10 km north of the Town of Marathon, Ontario. The Hemlo Mining Camp is located 30 km to the southeast. The population of Marathon is approximately 5,000, and the town is situated adjacent to the Trans-Canada Highway No. 17 on the northeast shore of Lake Superior. The centre of the Property sits at approximately 48° 45' N latitude, 86° 19' W longitude. Marathon is approximately 300 km east of Thunder Bay by highway and 400 km northwest of Sault Ste- Marie by highway. Primary industries supporting the Town of Marathon are pulp-and-paper and mining.

The climate is typical of northern areas within the Canadian Shield with long winters and short, warm summers. The Marathon PGM-Cu property is located in an area characterized by moderate to steep hilly terrain with a series of creeks and lakes and dense vegetation. The Project area is bounded to the east by the Pic River and Lake Superior to the south and west.

24.2 GEOLOGY AND MINERALIZATION

The Marathon PGM-Cu deposit is hosted within the Eastern Gabbro Series of the Proterozoic Coldwell Complex which intrudes and bisects the much older Archean Schreiber-Hemlo Greenstone Belt. The sub-circular complex has a diameter of 25 km and a surface area of 580 km^2 and is the largest alkaline intrusive complex in North America. The Coldwell Complex was emplaced as three nested intrusive centres that were active during cauldron subsidence near where the northern end of the Thiel Fault intersected Archean rocks, on the north shore of Lake Superior.

Mineralization at the Marathon PGM-Cu deposit is part of a very large magmatic system that consists of at least three cross-cutting intrusive olivine gabbro units that comprise the Eastern Gabbro Series of the Coldwell Complex. In order of intrusion, the three gabbroic units consist of Layered Gabbro Series, Layered Magnetite Olivine Cumulate ("LMOC") and Two Duck Gabbro ("TDL Gabbro"). The relative size and abundance of the gabbroic units decrease in the order Layered Gabbro Series>TDL Gabbro>>LMOC. Late quartz syenite and augite syenite dykes cut all of the gabbros but form a minor component of the intrusive assemblage. The TDL Gabbro is the dominant host rock for copper-PGM mineralization and is the focus of exploration. The mineralized zones occur as shallow dipping sub parallel lenses that follow the basal gabbro contact and are labeled as footwall, main, hanging wall zones and the W Horizon. The Main Zone is the thickest and most continuous zone. Additional accumulations of copper-PGM mineralization are associated with LMOC and occur in the hanging wall of the deposit.

24.3 EXPLORATION, SAMPLING AND ASSAYING

Since acquiring the Marathon PGM-Cu deposit from Polymet Mining Corp. ("Polymet") in December 2003 Marathon PGM has funded continuous programs of advanced exploration and diamond drilling commencing with its surface exploration program in June 2004.

A total of 705 drill holes totaling 130,560 m of drill core were used to delineate the Mineral Resource Estimate described in this Technical Report. In 2007, 36,779 m were drilled including 176 holes drilled for a total of 35,057 m as infill and step out holes within the Marathon PGM-Cu deposit, and 1,722 m drilled in 13 holes outside the pit area. A total of 19,538 m in 92 holes were drilled in 2008 as infill and step out holes within the Main Zone. An additional 842 m in five holes were drilled for exploration outside the pit area, and four holes for a total of 858 m were drilled as condemnation holes at the process solids management facility ("PSMF"), crusher and mill sites. A total of 2,334 m in 21 holes were drilled in 2009 as step out holes and were primarily intended to expand the resource. Drilling in 2008 on the Benton JV portion of the Project area included 23 holes for a total of 6,862 m.

For the 2007, 2008 and 2009 drilling programs, the NQ core holes were sawn in half and sampled on regular 2-m intervals through the mineralized zone. Samples were delivered to Accurassay Laboratories ("Accurassay") in Thunder Bay, Ontario. All samples were analyzed for Cu, Ni, Au, Pt and Pd. Rhodium analysis was requested on samples within an intersection of two or more consecutive samples with an NSR value greater than $8, as well as the two samples on either side of the intersection, even though the values are likely to be below detection limit.

Independent verification sampling was carried out by Charley Murahwi who made an independent selection of sample pulps in October 2009. Independent repeat analyses on the pulps showed a good degree of reproducibility by the Accurassay laboratory.

A QA/QC program, initially instituted in 2006, was maintained throughout 2007, 2008 and 2009. Uncertified property standards named APG1 and APP7, as well as the Canmet certified standard WMG-1, were used as reference materials. In mid-2007, the supply of APP7 was exhausted and was replaced by another property standard, APG6. The QC program was monitored on a real-time basis by Marathon PGM throughout 2007, 2008 and 2009.

24.4 MINERAL PROCESSING AND METALLURGICAL TESTWORK

The updated feasibility metallurgical flowsheet and process design criteria are based on a program of flotation circuit optimization testing, including a mini pilot plant ("MPP") run in April, 2009, at XPS, Sudbury, Ontario and a detailed program of metallurgical testwork undertaken by SGS Lakefield Research ("SGS-L") at Lakefield between March 2007 and March 2008. This work is complemented by a substantial amount of historical work ranging from the 1960s.

Other testwork completed for the feasibility includes two pilot scale programs to test the suitability and gather scale-up data for high pressure grinding roll technology. This work was undertaken at the testing facilities of KHD Humboldt Wedag GmbH ("KHD") located near Cologne, Germany.

A number of general and PGM specific mineralogical investigations have been conducted on samples of Marathon PGM-Cu mineralization.

24.5 MINERAL RESOURCE ESTIMATES

The revised Mineral Resource Estimate for the Marathon PGM-Cu property was undertaken by Sam Shoemaker, MAusIMM, and Charley Murahwi, P.Geo., of Micon with the assistance of David Good, Ph.D., P.Geo., V.P. Exploration of Marathon PGM.

A review of the basis for the previous Mineral Resource Estimate (geologic cross-sections) was completed by Micon using both the previously used drill holes along with the additional 21 new drill holes. The new in-fill drilling indicated minor changes from the previously interpreted geologic model which required that an updated cross-sectional interpretation be completed before a new Mineral Resource Estimate could be established. In order to better represent the geology of the Marathon PGM-Cu deposit, a new block model was constructed which used an unfolding technique on the sample search ellipsoid. This approach allowed a search ellipsoid to better reflect the actual trend of the mineralization. In addition, smaller block sizes were used in the mineralized zones to further help delineate the overall potential resource.

The diluted block model was exported to Whittle where the model was prepared for optimization. A number of pit optimization runs were completed at along with extensive sensitivity analysis. Table 24.1 shows the estimated pit shell Mineral Resource contained within the selected optimized pit shell.

TABLE 24.1 MARATHON PGM-CU PIT SHELL MINERAL RESOURCE (DILUTED BLOCK MODEL) TOTAL RESOURCE (LOWER AND HIGHER GRADE) ABOVE $10.50/T NSR CUT-OFF											
Classification	**Pit Shell 46 Mineral Resource**						**Contained Metal**				
	Tonnes (M)	**Pd (g/t)**	**Pt (g/t)**	**Au (g/t)**	**Cu (%)**	**Ag (g/t)**	**Pd (koz)**	**Pt (koz)**	**Au (koz)**	**Cu (Mlb)**	**Ag (koz))**
Measured	94.3	0.846	0.243	0.088	0.262	1.599	2,564	736	266	545	4,847
Indicated	20.5	0.451	0.160	0.062	0.140	1.421	386	133	50	73	976
Measured + Indicated	114.8	0.775	0.228	0.083	0.241	1.567	2,950	869	316	618	5,823
Inferred	6.2	0.306	0.104	0.047	0.151	1.459	61	21	9	21	290

The Mineral Resources presented above are the subject of the Feasibility Study discussed in the present Technical Report.

The quantity and grade of reported Inferred Mineral Resources in this estimate are conceptual in nature and there has been insufficient exploration to define them as Indicated Mineral Resources. It is uncertain if further exploration will result in their conversion to Indicated or Measured Mineral Resources.

Following the completion of 21 additional exploration drill holes in September 2009, the block model was updated. The Mineral Resource Estimate provided is effective as of 24 November 2009.

24.6 MINING AND MINERAL RESERVE ESTIMATES

The Marathon PGM-Cu project comprises open pit mining and processing at an average rate of 22,000 tpd of ore to produce a saleable flotation concentrate containing Cu, Pd, Pt, Au, Ag and Rh. The life of the operation is estimated at approximately 11.5 years.

The proposed Marathon PGM-Cu open pit will be a conventional open pit mining operation that will be developed by the Owner using its own equipment and workforce.

The Mineral Resource model used for the pit optimization, pit design, and production scheduling is the diluted block model developed by Micon in 2009 and used to estimate the Mineral Resources. Only material in the block model with the resource classification of 'measured' or 'indicated' were considered as potential mill feed. In addition to the estimated grade values for Cu, Pd, Pt, Au, Ag, and Rh contained within the diluted block model, other variables were calculated or input into the diluted block model. These included the net smelter return, geotechnical parameters, block economic net value, haulage simulation results, block material type, and Whittle rock types.

In order to complete an open pit design on the Marathon PGM-Cu deposit, Micon used:

- The available geotechnical data describing the inter ramp slope angle, slope sectors, and berm widths that are required to develop a geotechnically stable pit design.
- Economic and metallurgical criteria such as estimated metal pricing, metal recoveries, downstream operating costs (smelting, refining, and shipping), currency conversion rates, and projected annual mill feed requirements.
- Pit optimization based on the economic, metallurgical, geotechnical and production requirements for the Project.

Pit optimization was completed using a Lerchs-Grossmann algorithm ("LG") on the block model. Gemcom's LG software, the Whittle optimizer was selected. Once a pit optimization was completed, the selected pit shell was used as a design basis for the open pit. For the Marathon PGM-Cu deposit, three major mining areas are present, the North pit, South pit, and Malachite pit. Once these three pit areas were designed, a production schedule was prepared, followed by equipment selection and estimation of operating costs, capital costs and personnel requirements.

Mineral Reserves have been estimated for the North, South and Malachite pits from the diluted block model, pit optimization and pit design. The Mineral Reserves are summarized in Table 24.2.

TABLE 24.2 MINERAL RESERVES FOR THE MARATHON PGM-CU DEPOSIT											
Classification	**Tonnes**	**Pd (g/t)**	**Pt (g/t)**	**Au (g/t)**	**Cu (%)**	**Ag (g/t)**	**Cu (Mlb)**	**Pd (koz)**	**Pt (koz)**	**Au (koz)**	**Ag (koz)**
Proven	76,461,000	0.910	0.254	0.090	0.268	1.464	452	2,237	625	222	3,600
Probable	14,986,000	0.435	0.147	0.060	0.138	1.318	46	209	71	29	635
Total	**91,447,000**	**0.832**	**0.237**	**0.085**	**0.247**	**1.440**	**497**	**2,447**	**696**	**251**	**4,235**

The Mineral Reserves presented in Table 24.2 are included in the Mineral Resources presented in Table 24.1.

The Mineral Reserve Estimate presented in Table 24.2 is effective as of 24 November 2009.

The scheduled life of mine tonnes of ore and mine (waste) rock are 91.4 Mt and 263.5 Mt, respectively. The average ore to mine rock ratio is 2.88.

Two mine rock (waste) storage areas ("MRSA") are envisioned for the Marathon PGM-Cu project. The first is the west MRSA with a capacity of 151.3 Mm^3 or 227 Mt. Total surface area impacted by this MRSA is 270 ha. The second storage area is the east MRSA area with a capacity of 40.7 Mm^3 or 61 Mt. Total surface area impacted by this facility is 106 ha. Total mine rock storage capacity is 192.0 Mm^3 or 288 Mt.

24.7 MINERAL PROCESSING

The design of the 22,000 tpd concentrator comprises primary crushing, secondary crushing, high pressure grinding rolls ("HGPR"), ball milling, flotation, concentrate dewatering and process solids (tailings) disposal. The concentrator is designed to produce a copper sulphide flotation concentrate containing PGMs and gold.

Mined ore-grade material is hauled by mine trucks to the primary crusher situated on the eastern side of the main open pit. Primary crushed ore is conveyed onto a coarse ore stockpile from which it is reclaimed to the secondary crushing and screening plant. Product from the secondary crushing plant is fed to the HPGR feed storage bins situated at the main plant facility. Material from the HPGR product storage bins feeds the grinding circuit located in the process plant. Ground material feeds the flotation circuit.

The flotation circuit comprises two conditioners, a primary rougher stage, a primary cleaner stage, a secondary rougher stage, a secondary cleaner stage and a cleaner scavenger stage. The primary cleaning circuit comprises one stages of cleaning and two stages of secondary cleaning. The flotation circuit is based on the metallurgical flowsheet developed by SGS-L and XPS.

The final concentrate is thickened, filtered in a continuous vertical plate type pressure filter and stored in a stockpile located on the ground floor of the mill building. The concentrate is periodically loaded into trucks and transported to the concentrate storage and rail load-out area, which is situated in Marathon.

24.8 INFRASTRUCTURE

The access road to the site will be routed in a northeast direction from the extension of Peninsula road branching north from the Trans Canada Highway No. 17 at the Marathon Town intersection.

Infrastructure facilities for the operation comprise:

- Site roads.
- Construction camp.
- Plant buildings and facilities.
- Mine equipment and maintenance building.
- Site water systems and potable water treatment.
- Heating, ventilation and air conditioning.
- Fuel storage and delivery systems.
- Fire protection equipment.
- Plant mobile equipment.
- Mine rock disposal.
- Explosives plant and storage.
- Concentrate load-out facility.
- Process solids thickening plant.
- Electrical power supply and distribution.

- Automation and control systems.
- Communications.

24.9 DISPOSAL OF PROCESS SOLIDS

AMEC of Pointe Claire, Quebec, Canada, was retained by Marathon PGM in 2009 to carry out a new study for the disposal of process solids (tailings). AMEC's report presented three options based on criteria related to: the production objectives proposed by Marathon PGM; process data obtained by other consultants; the sulphur content of the process solids; the available meteorological data for the region; and the environmental criteria in effect. AMEC's conclusions were based on basic design elements and criteria, preliminary analysis of potential sites, water assessments, evaluation of typical sections of dykes and dams, fill plans, material borrow areas and capital costs estimates.

The three options designed and costed by AMEC were:

1. Base case – Sub-aqueous storage of process solids in Bamoos Lake.

2. Option 1A – Land-based separated low and high sulphur process solids management facility with excess treated water discharge to the environment through the operational/emergency spillway of the high sulphur PSMA into Stream 6.

3. Option 1B - Modified version of Option 1A to release water to the environment directly to Hare Lake via Hare Creek.

24.10 ENVIRONMENTAL ISSUES

Environmental baseline studies have been ongoing since 2005. In 2009, Marathon retained EcoMetrix and True Grit Consulting Ltd., ("True Grit") to provide the environmental research relevant through 2009 and into 2010 and beyond. The overarching objective of this research is to provide the necessary information to develop an EIA and ultimately deliver the EIS for the Marathon PGM-Cu Project to the government. The detailed results from these field studies will form part of the EIS.

24.11 PROJECT SCHEDULE

A list of the key project development milestones is provided below:

Complete updated Feasibility Study	November 2009
Project Description for EA issued	December 2009
EA Report issued to authorities	April 2010
Process optimization and basic engineering start	May 2010
Detailed engineering start	July 2010
Long lead equipment purchased	September 2010
Process optimization and basic engineering complete	February 2011
Mobilization on site	February 2011

Environmental assessment approved and all permits granted	December 2011
Detailed engineering complete	December 2011
Ball mill delivery to site	February 2012
Construction complete	January 2013
Wet commissioning start	January 2013
Production start-up completed	May 2013.

Assuming that basic construction access is granted prior to the final approval of the EA, the estimated production start-up date is May 2013. If access is only acceptable after all permits are in place and the EA has been approved, which is the scenario currently assumed in the Project Description document, then the estimated start-up date is December 2013.

24.12 CONCENTRATE MARKETING

Andrew Falls of Exen was retained by Marathon PGM to prepare an updated analysis of the market for concentrate to be produced from the Marathon PGM-Cu Project. The concentrate is considered a copper concentrate from a marketing perspective, notwithstanding the relatively high PGM content. In this respect, the concentrate is relatively unusual but the copper content, at about 22% Cu, is low compared to the majority of copper concentrates, and will have to be blended in order to meet the requirements of almost all smelters.

Mr. Falls' analysis has resulted in the identification of a small number of potential buyers which are able to handle copper-PGM materials in their smelting/refining facilities and which, because of the high grade of precious metals, may be anticipated to provide reasonable credit for precious metals in the Marathon PGM-Cu concentrate.

24.13 CAPITAL AND OPERATING COST ESTIMATES

The estimated pre-production project capital costs are summarized in Table24.3.

TABLE 24.3
SUMMARY OF ESTIMATED PRE-PRODUCTION PROJECT CAPITAL COSTS

Area	Cost ($000s)
Mining pre strip	5,762
Mine equipment[1]	18,536
Process plant and infrastructure	261,695
PSMF and water treatment	8,396
Owners Costs	7,202
Contingency	49,531
Pre-production Total	**351,122**

Note: *Assumes a 10% down payment on the cost of mining equipment and financing of the balance over 5 years at 9% per year interest rate.*

The life-of-mine capital cost estimate is $495 million comprising $351 million of pre- production capital and $144 million of sustaining and closure capital. The sustaining capital consists of mainly $103 million for mining, which includes a credit for mine equipment salvage. The total average life-of-mine unit operating costs are presented in Table 24.4.

TABLE 24.4
ESTIMATED LOM UNIT OPERATING COST

Component Cost	$/t Processed
Mining	5.67
Processing	6.79
Water treatment	0.05
General and administration - site	0.58
General and administration – mine equipment financing	0.29
Total on-site cost	13.39
Concentrate transportation, smelting and refining	3.25
Total operating cost	**16.64**

24.14 ECONOMIC ANALYSIS

The overall level of accuracy of the cost estimates in the Feasibility Study is ±15%.

Micon has prepared its assessment of the Project on the basis of a discounted cash flow model, from which net present value (“NPV”), internal rate of return (“IRR”), payback and other measures of Project viability can be determined. Assessments of NPV are generally accepted within the mining industry as representing the economic value of a project after allowing for the cost of capital invested.

The objective of the study was to evaluate the potential for establishing a viable open pit mine and concentrator to exploit the Marathon PGM-Cu Deposit. In order to do this, the cash flow arising from the base case has been forecast, enabling a computation of the NPV to be made. The sensitivity of this NPV to changes in the base case assumptions is then examined.

For the purposes of the Feasibility Study evaluation, the three-year trailing average prices were selected to provide a base case against which each of the other scenarios could be compared (see Table 24.5). As part of its sensitivity analysis, Micon also tested a range of prices 30% above and below these base case values.

TABLE 24.5 METAL PRICE FORECASTS LOM AVERAGES				
Item	**Units**	**3-Year Trailing**	**Bank Forecast**	**5-Year Trailing**
Copper	US$/lb	2.91	2.031	2.63
Platinum	US$/oz	1,346.65	1,750.00	1205.73
Palladium	US$/oz	321.44	400.00	293.23
Gold	US$/oz	819.22	900.00	695.11
Silver	US$/oz	14.10	13.00	12.04
Exchange rate	$/US$	1.099	1.10	1.131

Note: *US$2.50/lb Cu in 2013 (Yr 1), US$2.00/lb Cu long term.*

Using the parameters outlined in the undated Feasibility Study, a cash flow and net present value projection was prepared for the base case. This projection is summarized in Table 24.6 and Figure 24.1, based on a discount rate of 6%/y (NPV_6).

The results show that the Project generates an IRR of 21.2% before tax and 17.4% after tax. The undiscounted payback period is 4.4 years, and the discounted cash flow is positive after six years. The NPV_6 is $250.7 million after tax.

The results of sensitivity analysis of product price and capital and operating costs are shown in Figure 24.2.

Given the sensitivity to price assumptions, and the volatility in metal prices observed in the market, Micon tested the cash flow using several other price scenarios.

It is apparent that the Project provides an attractive return when using the base case 'three-year trailing' average prices obtaining during the 36 months to October 31, 2009. Similar returns are seen when using the independent forecast of a leading Canadian commercial bank, published in October 2009. Returns using the five-year trailing average are also positive, but less attractive.

TABLE 24.6 CASH FLOW PROJECTION				
Item	**LOM Total ($000s)**	**$/t Treated**	**US$/lb Cu**	**NPV6 ($000s)**
NSR copper only	1,222,847	13.37	2.58	723,170
NSR co-products	1,347,385	14.73	2.84	812,451
less Royalty	4,928	0.05	0.01	3,715
Sub-total net revenue	**2,565,304**	**28.05**	**5.41**	**1,531,906**
Operating costs				
Mining costs - open pit	518,591	5.67	1.09	314,610
Processing costs	625,962	6.85	1.32	368,129
General & Administrative costs	79,524	0.87	0.17	50,683
Contingency	-	-	-	-
Total cash operating cost	**1,224,078**	**13.39**	**2.58**	**733,422**
Net operating margin	1,341,226	14.67	2.83	798,484
Capital expenditure	494,645	5.41	1.04	415,104
Pre-tax cash flow	846,581	9.26	1.79	383,380
Taxation	249,768	2.73	0.53	132,663
Net cash flow after tax	**596,813**	**6.53**	**1.26**	**250,718**

FIGURE 24.1 LOM CASH FLOW PROJECTION

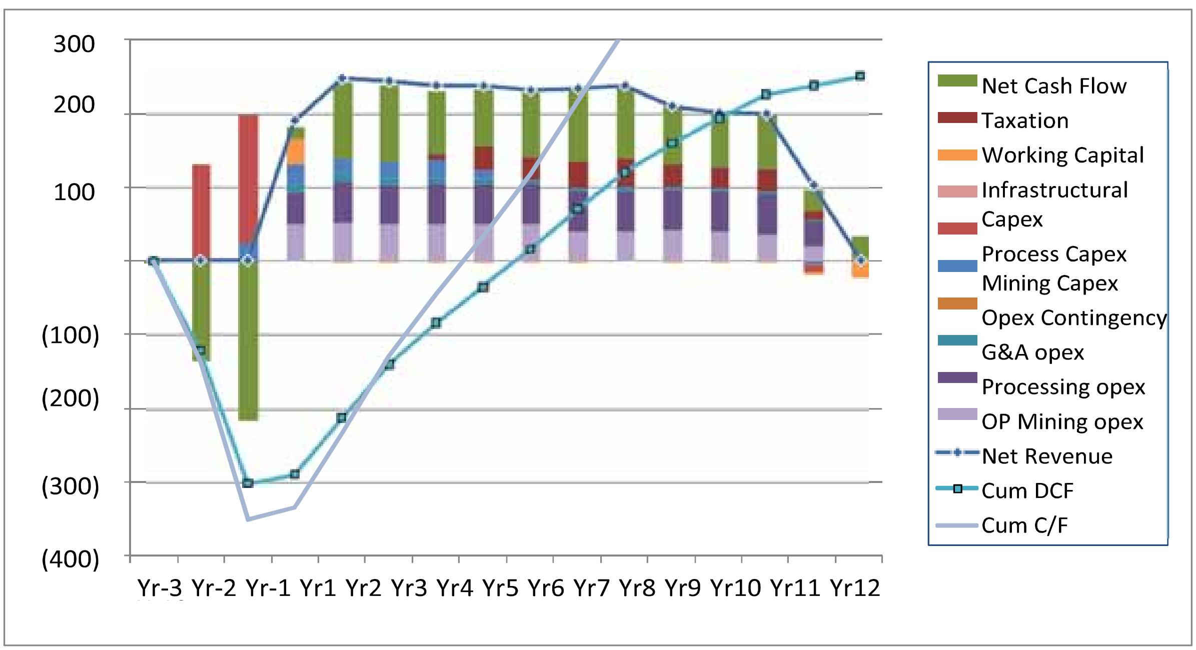
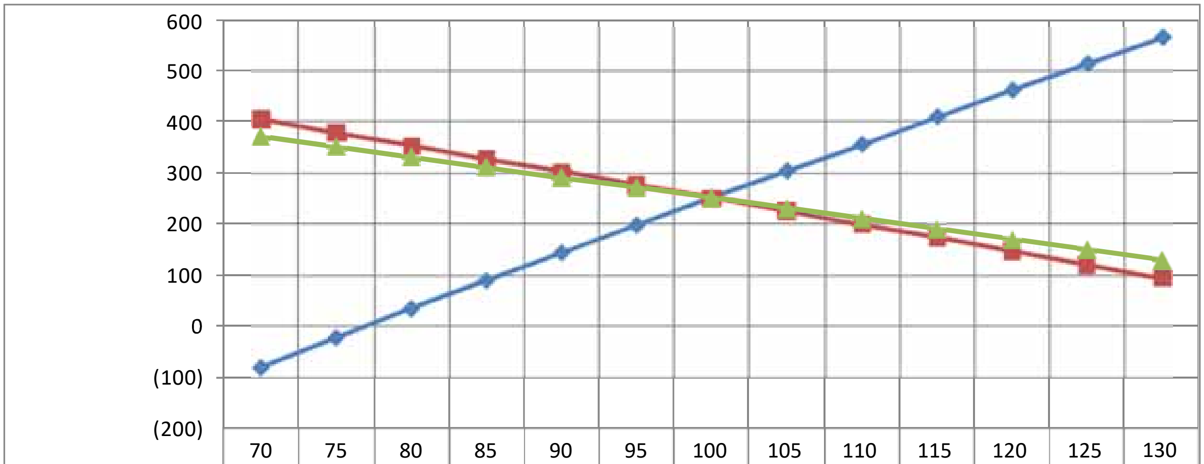


FIGURE 24.2 NPV SENSITIVITY DIAGRAM



	70	75	80	85	90	95	100	105	110	115	120	125	130
Product Price	(81)	(23)	34	89	143	197	251	303	356	409	461	513	565
Opcosts	405	379	353	327	302	276	251	224	199	173	146	120	93
Capex	372	351	331	311	291	271	251	231	210	190	170	150	130

The base case cash flow considers the leasing of the mining fleet. Micon also considered the outright cash purchase of the equipment as an alternative strategy. The NPV_6 for the all- equity fleet purchase option is $261M, an increase of $10M versus the leasing scenario, though, at the same time, the Project IRR falls from 17.4% to 17.0%.

The base case cash flow provides for the sub-aqueous deposition of process solids within Bamoos Lake. In this case, no thickening of the process slurry before pumping to storage is required, and minimal capital costs are associated with establishing the impoundment.

Using the alternative process solids disposal option, Option A1, (sub-aerial deposition of tailings) the impact of this on project economics is a reduction in NPV from $251M to $211M, and a reduction in Project IRR from 17.4% to 15.3%.

24.15 CONCLUSIONS AND RECOMMENDATIONS

The updated Feasibility Study completed on the Marathon PGM-Cu Project demonstrates the potential to generate strong cash flow under appropriate metal price assumptions. The base case results show that the Project generates an IRR of 21.2% before tax and 17.4% after tax. The undiscounted payback period is 4.4 years, and the discounted cash flow is positive after 6 years. The NPV_6 is $250.7 million after tax. The sensitivity studies demonstrate that the Project is quite sensitive to adverse changes in price assumptions and moderately sensitive to changes in operating cost or capital expenditure.

The Project schedule suggests that production of copper/PGM/Au concentrate could commence at the end of 2013. The present critical path item is the environmental assessment approval process and associated receipt of the required construction and operating permits.

The immediate efforts of Marathon PGM will be concentrated on securing the required funding to proceed with the development of the deposit. Throughout the process, the company will undoubtedly be restructuring toward a producing mining company, with exploration geared toward reserve and resource sustainability.

24.15.1 Project Development

As a result of its Feasibility Study on the Marathon PGM-Cu Project, Micon recommends that Marathon PGM proceeds with the development of the Project.

The life-of-mine capital cost for the Marathon PGM-Cu project is $495M, including estimated initial capital costs of $351M, as noted above. The estimated annual expenditures over the first three years of project development (Years -3 through -1) are detailed in Table 24.3, which provides the base case annual cash flows for the Project.

The metallurgical testwork programs completed to date were used to design the process used in the updated Feasibility Study. This work includes a pilot plant run in 1986, bench scale tests including locked cycle tests ("LCT") at SGS-L in 2004, 2007 and 2008, and LCT and a 6-day continuous mini pilot plant run completed by XPS in 2008 and 2009. Although Micon believes that the metallurgical testwork completed to date on the Marathon PGM-Cu deposit provides ample proof that good metallurgical performance can be achieved using conventional flotation, it is suggested that additional work may be worthwhile in order to try and reduce the reagent costs. This could entail reducing reagent dosage rates or substituting the existing reagent suite with less expensive chemicals.

Three feasible process solids (tailings) management areas ("PSMA") for the Marathon PGM- Cu project were evaluated by AMEC. AMEC concluded that the sub-aquatic option (Bamoos Lake) seems to be the best PSMA since capital investment will be the lowest, no separation process between high/low sulphur process solids will be required and the risks associated to this option are low. However, this option utilizes an existing lake for containment which may be difficult to permit. AMEC commented that Option 1A represented the best on-land PSMA and should continue as an alternative during the advanced development and permitting process. AMEC further recommends the following:

- Detailed operational water management will need to be evaluated to take into account the detailed mining schedule.

- An extended geotechnical investigation is required for detailed design of the PSMA infrastructure. Furthermore, detailed evaluation of available clay deposits is required to determine dam design and cost.

The Marathon PGM-Cu project will likely be subject to both federal and provincial Environmental Assessment processes, and Marathon PGM intends to work in a coordinated way with both governments in order to drive the process forward with regard to achieving the necessary approvals in a timely manner.

25.0 INTERPRETATION AND CONCLUSIONS

The Marathon Property is located approximately 10 km north of the Town of Marathon, Ontario which is situated adjacent to the Trans-Canada Highway No. 17 on the northeast shore of Lake Superior. Thunder Bay is approximately 300 km westward along Highway 17 while Sault Ste-Marie is approximately 400 km to the southeast along the same Highway 17. Marathon has a population of approximately 3,200 (2016 census). Local access to the Property is by gravel road from highway 17 which lies just north of Marathon and immediately south of the Property.

Gen Mining owns a 51% interest (with an option to earn up to an 80% interest through a Joint Venture arrangement) in the Marathon Deposit and the Property from Stillwater Canada Inc. (a wholly owned subsidiary of Sibanye Gold Limited). This increase in ownership would be through spending of $10 million and preparing a Preliminary Economic Assessment within four years of the Property acquisition date marked as July 11, 2019. Gen Mining acts as the operator of the joint venture and once Gen Mining reaches an 80% interest, a Joint Venture will be formed. The original Marathon Property held by Stillwater Canada Inc. from 2010 to 2019 has since been enlarged by Gen Mining through the periodic staking of unpatented mining claims. Gen Mining during the summer of 2019 staked an additional 215 claim blocks totalling 4,558 ha. This increases Gen Mining's land position to include 45 leases and 1,071 claims, or 21,965 ha (219.65 square kilometres) at the effective date of this Technical Report.

The Marathon Property is located at latitude 48°45' N and longitude 86°19' W. Local access to the Property is by gravel roads. The Property is characterized by moderate to steep hilly terrain with a series of interconnected creeks and lakes surrounded by dense vegetation. Occasional outcrops of gabbro are present on the Property and overburden which consists of boulder till with gabbro and mafic volcanic boulders, ranges from 3 m to 10 m in thickness. The general elevation around the mine site is slightly higher than the overall regional topography. Ground surface elevations in the area of the proposed mine range from about 260 m to over 400 m above sea level with a gradual decrease in elevation from north to south. The climate is typical of northern areas within the Canadian Shield with long winters and short, warm summers. Average annual precipitation in the area of Marathon was 826 mm for the period 1952-1983, of which 240 mm fell as snow. Average annual surface runoff is approximately 390 mm. The annual average temperature is 1°C with the highest average monthly temperature of 15°C in August and lowest in January of -15°C.

The Marathon Property was explored by various companies over the past 40+ years, and during this time, a total of 883 drill holes and 1,008 trenches totalling 199,343 metres were completed. The majority of drilling was completed to outline the Marathon Deposit. Exploration for copper and nickel deposits in the Marathon area commenced in the 1920s and has continued until the present. In the 1940s, the discovery of titaniferous magnetite and disseminated chalcopyrite occurrences was made. During the past five decades, the Marathon Property has undergone several phases of exploration and economic evaluation, including geophysical surveys, prospecting, trenching, diamond drilling programs, geological studies, resource estimates, metallurgical studies, mining studies, and economic analyses. The Property was developed from 1985 to 2014 by various companies. These studies have successively enhanced the knowledge base on the Deposit.

Metallurgical testwork results and flowsheet design for the Marathon Project originate from a series of bench-scale metallurgical at several testing laboratories over several years. Tests included crushing, grinding, batch, cycle and mini pilot scale froth flotation testing. Early mineralogical examination revealed that the copper mineralization was bi-modal – most of the chalcopyrite was coarse grained (>100 µM), with the balance being fine grained. Essentially all of the PGM mineralization was very fine grained (80% <10 µm). The production of a mineral concentrate for sale to a smelter is the most reasonable strategy for the Marathon Project. Early testwork results indicated that a rougher flotation of copper (chalcopyrite) at a coarse grain size followed by regrinding of the flotation tails and production of a rougher PGM-rich concentrate. Later testwork revealed that regrinding of both of the rougher concentrates combined with repeated cleaner flotation tailings would successfully produce smelter-acceptable grades of concentrate and at high recoveries of copper and PGM's.

The Marathon Property is situated along the eastern margin of the Coldwell Complex, which is part of the Keweenawan igneous rocks that were emplaced around, and in the vicinity of, the Great Lakes of the Mid-continent Rift System. The Marathon Deposit is hosted by the Two Duck Lake Gabbro ("TDL Gabbro"), a late intrusive phase of the Eastern Gabbro. The Eastern Gabbro is a composite intrusion and occurs along the northern and eastern margin of the Proterozoic Coldwell Alkaline Complex ("CAC") which intrudes the much older Archean Schreiber-Hemlo greenstone belt. The entire CAC is believed to have intruded over a relatively short period of time near the beginning of the main stage of the Mid-continent Rift magmatism that occurred between 1108 and 1094 Ma.

On August 19, 2019 Gen Mining announced that it has begun exploration by way of a 12,000-metre drilling program on the Marathon Property. Two drills and crews were mobilized and drilling commenced August 14th. The program is designed to test several high-priority sites along a strike length of more than 40 km.

All data generated for quality control standards, blanks and duplicates are retained with the client's file and are used in the validation of results. For each quality control standard, control charts are produced to monitor the performance of the laboratory. Warning limits are set at +/-2 standard deviations, and control limits are set at +/-3 standard deviations. Any data points for the quality control standards that fall outside the warning limits, but within the control limits require 10% of the samples in that batch to be re-assayed. In 2011, Stillwater Canada Inc. changed assay labs and initiated analyses at ALS Chemex Labs in Thunder Bay. ALS Chemex uses a similar lab protocol but with the exception that PGM analyses are conducted by ICP-MS instead of Atomic Absorption as at Accurassay. All samples were analyzed for Cu, Ni, Ag, Au, Pt and Pd. Rhodium analysis was requested on certain higher grade samples. The core and trench cut sampling protocol (preparation, analysis and security procedures) instituted and used by past project operator Marathon PGM Corp. in each of their drilling and other rock sampling programs were identical to those reported in earlier NI 43-101 compliant reports.

The Marathon Project was visited by Mr. David Burga, P.Geo., an independent Qualified Person as defined by NI 43-101 on April 4, 2012 and he collected ten verification samples from nine holes which were taken to AGAT Labs in Mississauga, ON for analysis. A site visit to the Marathon Project was undertaken by Bruce Mackie Geological Consulting Services on May 4, 2019. As part of the site visit, twelve verification samples from nine diamond drill holes intervals were taken by Mr. Mackie, P.Geo., were submitted to Activation Laboratories Ltd. in Thunder

Bay, ON. For both site visits (Burga and Mackie), drill logs for the sections reviewed were found to be appropriately detailed and present a reasonable representation of geology, alteration mineralization and structure. No discrepancies in the sample tag numbers within the core trays and the intervals quoted in the above mentioned Excel spreadsheets were noted.

The Updated Mineral Resource Estimate prepared in this Technical Report was based on a total of 883 drill holes and 1,008 trenches totalling 199,343 metres The Measured plus Indicated material included in the estimate totals 179.2 M tonnes at an average grade of 0.56 g/t, Pd, 0.18 g/t Pt. 0.20% Cu, 0.07 g/t Au and 1.6 g/t Ag. The 2019 P&E Mineral Resource Estimate is a significant tonnage and total metal increase over the previous 2010 Micon Mineral Resource Estimate of 115 million tonnes at an average grade of 0.78 g/t, Pd, 0.23 g/t Pt. 0.24% Cu, 0.08 g/t Au and 1.6 g/t Ag used in the updated 2010 Feasibility Study

The main differences between the Micon and current P&E Mineral Resource Estimates are as follows:

- Pd price used rose from US$300/oz to US$1,100/oz;
- 46 additional drill holes; and
- Correction of some anomalous Pd grade block interpolation errors.

The existing studies provide a basis for assessment of the nature, extent and duration of potential biophysical and socioeconomic effects resulting from mine development, operation and closure. A Closure Plan that will minimize long term care and maintenance requirements had been prepared and is anticipated to remain valid and acceptable. The consultation process is ongoing but would amplify following a positive Feasibility Study. Detailed and comprehensive environmental and socioeconomic baseline studies had been undertaken and essentially completed since 2005 to support robust environmental management and the acquisition of all of the necessary federal and provincial approvals and permits. A comprehensive collection of data was compiled in 2010 and combined with other Project information into a detailed Project Description to commence the Environmental Assessment (‘EA’) process. Subsequently, in June 2012 an Environmental Impact Statement (‘EIS’) was submitted to a federal and provincial Joint Review Panel (“JRP”) which had been formed for expert review of the Project.

26.0 RECOMMENDATIONS

P&E considers that the Marathon Project contains a significant precious metal and copper Mineral Resource that is associated with a well-defined mineralized trend and model. P&E considers that the Project has significant potential for a Mineral Resource increase and advancement to an economic study.

Specific opportunities for advancing the Property include:

- Passive seismic surveys in the Marathon and Sally areas;
- Exploration drilling in the Boyer, Geordie and Sally areas;
- Confirmatory and West Feeder Zone drilling in the Marathon Deposit;
- Down hole electromagnetic surveys where off-hole massive sulphides are suspected;
- Undertake a Preliminary Economic Assessment; and
- Evaluate potential to optimize potential Pd recoveries by additional metallurgical test work.

The Property has other numerous target areas with significant potential for discovery of additional mineralization with geophysics, trenching, geological mapping and drilling.

The proposed program for CAD$3,410,000 is summarized in Table 26.1.

TABLE 26.1
RECOMMENDED PROGRAM AND BUDGET

Program	Units	Unit Cost ($)	Budget ($)
Exploration			450,000
Drilling – infill and Mineral Resource expansion	12,000	$170/m	2,040,000
Environmental			120,000
PEA			400,000
Management SG&A			400,000
Total			**3,410,000**

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28.0 CERTIFICATES

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, 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 "Technical Report, Updated Mineral Resource Estimate of the Marathon Deposit, Thunder Bay Mining District Northwestern Ontario, Canada", (The "Technical Report") with an effective date of September 9, 2019.
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 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 visited the Property that is the subject of this Technical Report numerous times between 2005 and 2010.
5. I am responsible for authoring Sections 2, 3, and co-authoring Sections 1, 14, 25, 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. 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 "Updated Technical Report and Preliminary Economic Assessment on the Marathon PGM-Cu Property Marathon Area, Thunder Bay Mining District, Northwestern Ontario, Canada", with an effective date of April 5, 2007.
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: September 9, 2019

Signed Date: October 24, 2019

{SIGNED AND SEALED}

[Eugene Puritch]

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Eugene Puritch, P.Eng., FEC, CET

CERTIFICATE OF QUALIFIED PERSON

FRED H. BROWN, P.GEO.

I, Fred H. Brown, of PO Box 332, Lynden, WA, USA, do hereby certify that:

1. I am an independent geological consultant and have worked as a geologist continuously since my graduation from university in 1987.
2. This certificate applies to the Technical Report titled "Technical Report, Updated Mineral Resource Estimate of the Marathon Deposit, Thunder Bay Mining District Northwestern Ontario, Canada", (The "Technical Report") with an effective date of September 9, 2019.
3. I graduated with a Bachelor of Science degree in Geology from New Mexico State University in 1987. I obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science in Engineering (Civil) from the University of the Witwatersrand in 2005. I am registered with the South African Council for Natural Scientific Professions as a Professional Geological Scientist (registration number 400008/04), the Association of Professional Engineers and Geoscientists of British Columbia as a Professional Geoscientist (171602) and the Society for Mining, Metallurgy and Exploration as a Registered Member (#4152172).

   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:

Underground Mine Geologist, Freegold Mine, AAC	1987-1995
Mineral Resource Manager, Vaal Reefs Mine, Anglogold	1995-1997
Resident Geologist, Venetia Mine, De Beers	1997-2000
Chief Geologist, De Beers Consolidated Mines	2000-2004
Consulting Geologist	2004-2008
P&E Mining Consultants Inc. – Sr. Associate Geologist	2008-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, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for an internal company report in November of 2012.
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: September 9, 2019
Signed Date: October 24, 2019

{SIGNED AND SEALED}
[Fred H. Brown]

Fred H. Brown, 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, 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 "Technical Report, Updated Mineral Resource Estimate of the Marathon Deposit, Thunder Bay Mining District Northwestern Ontario, Canada", (The "Technical Report") with an effective date of September 9, 2019.
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 6, 20, and co-authoring Sections 1, 13, 25, and 26 of this Technical Report.
6. I am independent of the issuer applying the test in Section 1.5 of NI 43-101.
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 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: September 9, 2019
Signed Date: October 24, 2019

{SIGNED AND SEALED}
[D. Grant Feasby]

____
D. Grant Feasby, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

PAUL PITMAN, P.GEO.

I, Paul W. Pitman, B.Sc., P.Geo., residing in Brampton, Ontario, do hereby certify that:

1. I am an independent consulting geologist since 1983, President of PWP Consulting and an independent consultant to P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled "Technical Report, Updated Mineral Resource Estimate of the Marathon Deposit, Thunder Bay Mining District Northwestern Ontario, Canada", (The "Technical Report") with an effective date of September 9, 2019.
3. I am an honours graduate of Carleton University, 1969 in geology and have been practicing continuously as a professional since graduation. I have been the principal of a geological consulting practice for a period of 35 years. I am a P.Geo., registered in the Province of Ontario (APGO # 0575). I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of education, affiliation with a profession association and past geological experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

   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.
4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 4 to 10, 23, and co-authoring Sections 1, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
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: September 9, 2019
Signed Date: October 24, 2019

{SIGNED AND SEALED}
[Paul Pitman]

____
Paul W. Pitman, B.Sc. (P.Geo.)

CERTIFICATE OF QUALIFIED PERSON

JARITA BARRY, P.GEO.

I, Jarita Barry, P.Geo., residing at 4 Creek View Close, Mount Clear, Victoria, Australia, 3350, 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 "Technical Report, Updated Mineral Resource Estimate of the Marathon Deposit, Thunder Bay Mining District Northwestern Ontario, Canada", (The "Technical Report") with an effective date of September 9, 2019.
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 a total of 13 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by Engineers and Geoscientists British Columbia (License No. 40875), Professional Engineers and Geoscientists Newfoundland & Labrador (License No. 08399) and Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (License No. L3874). 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. (APEGBC/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, and 26 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 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: September 9, 2019
Signed Date: October 24, 2019

{SIGNED AND SEALED}
[Jarita Barry]

____

Jarita Barry, P.Geo.

CERTIFICATE OF QUALIFIED PERSON

BRUCE W. MACKIE, M.SC., P. GEO.

I, Bruce W. Mackie, P. Geo., residing at 339 Parkridge Crescent, Oakville, Ontario, L6M 1A8 do hereby certify that:

1. I am an independent geological consultant contracted by Generation Mining Limited.
2. This certificate applies to the Technical Report titled "Technical Report, Updated Mineral Resource Estimate of the Marathon Deposit, Thunder Bay Mining District Northwestern Ontario, Canada", (The "Technical Report") with an effective date of September 9, 2019.
3. I graduated with an Honours Bachelor of Science degree in Geology and Chemistry from the Carleton University in 1975 and with a Master of Science degree in Geology from University of Manitoba in 1978. I have worked as a geologist for a total of 40 years since obtaining my M.Sc. degree. I am a member of the Canadian Institute of Mining and Metallurgy and a P. Geo., Registered in the Province of Ontario (APGO No. 0585).

   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.
4. I have visited Marathon Deposit on behalf of Generation Mining Limited on May 4, 2019.
5. I am responsible for co-authoring Sections 1, 12, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
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: September 9, 2019
Signed Date: October 24, 2019

{SIGNED AND SEALED}
[Bruce W. Mackie]

____

Bruce W. Mackie M.Sc., P. Geo.

CERTIFICATE OF QUALIFIED PERSON

DAVID BURGA, P.GEO.

I, David Burga, P. Geo., residing at 3884 Freeman Terrace, Mississauga, Ontario, 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 "Technical Report, Updated Mineral Resource Estimate of the Marathon Deposit, Thunder Bay Mining District Northwestern Ontario, Canada", (The "Technical Report") with an effective date of September 9, 2019.
3. I am a graduate of the University of Toronto with a Bachelor of Science degree in Geological Sciences (1997). I have worked as a geologist for over 20 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by the Association of Professional Geoscientists of Ontario (License No 1836).

   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:

Exploration Geologist, Cameco Gold	1997-1998
Field Geophysicist, Quantec Geoscience	1998-1999
Geological Consultant, Andeburg Consulting Ltd.	1999-2003
Geologist, Aeon Egmond Ltd.	2003-2005
Project Manager, Jacques Whitford	2005-2008
Exploration Manager – Chile, Red Metal Resources	2008-2009
Consulting Geologist	2009-Present

4. I have visited the Property that is the subject of this Technical Report on April 4, 2012.
5. I am responsible for co-authoring Sections 1, 12, 25, and 26 of this Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for an internal company report in November of 2012.
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: September 9, 2019

Signed Date: October 24, 2019

{SIGNED AND SEALED}

[David Burga]

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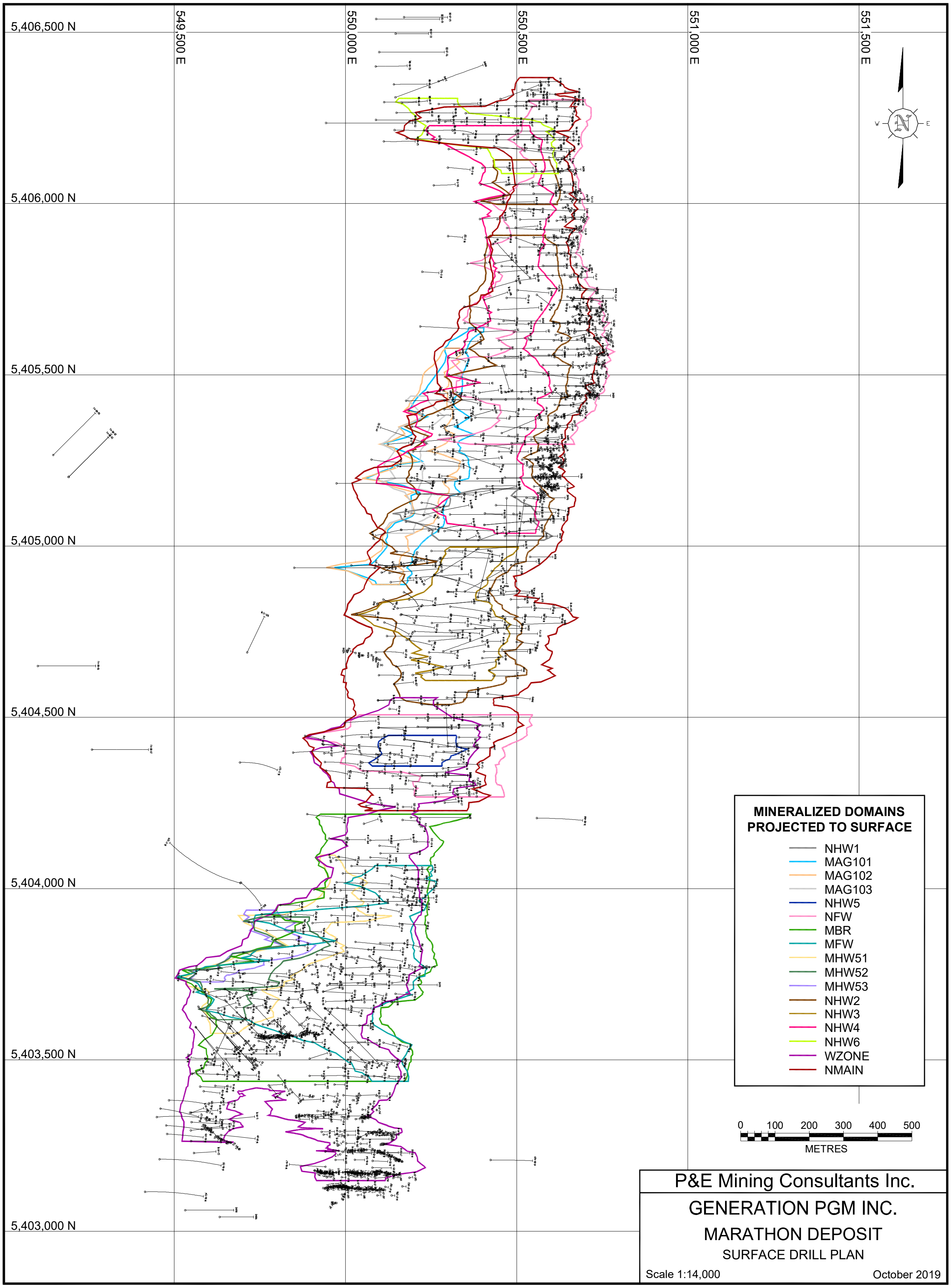
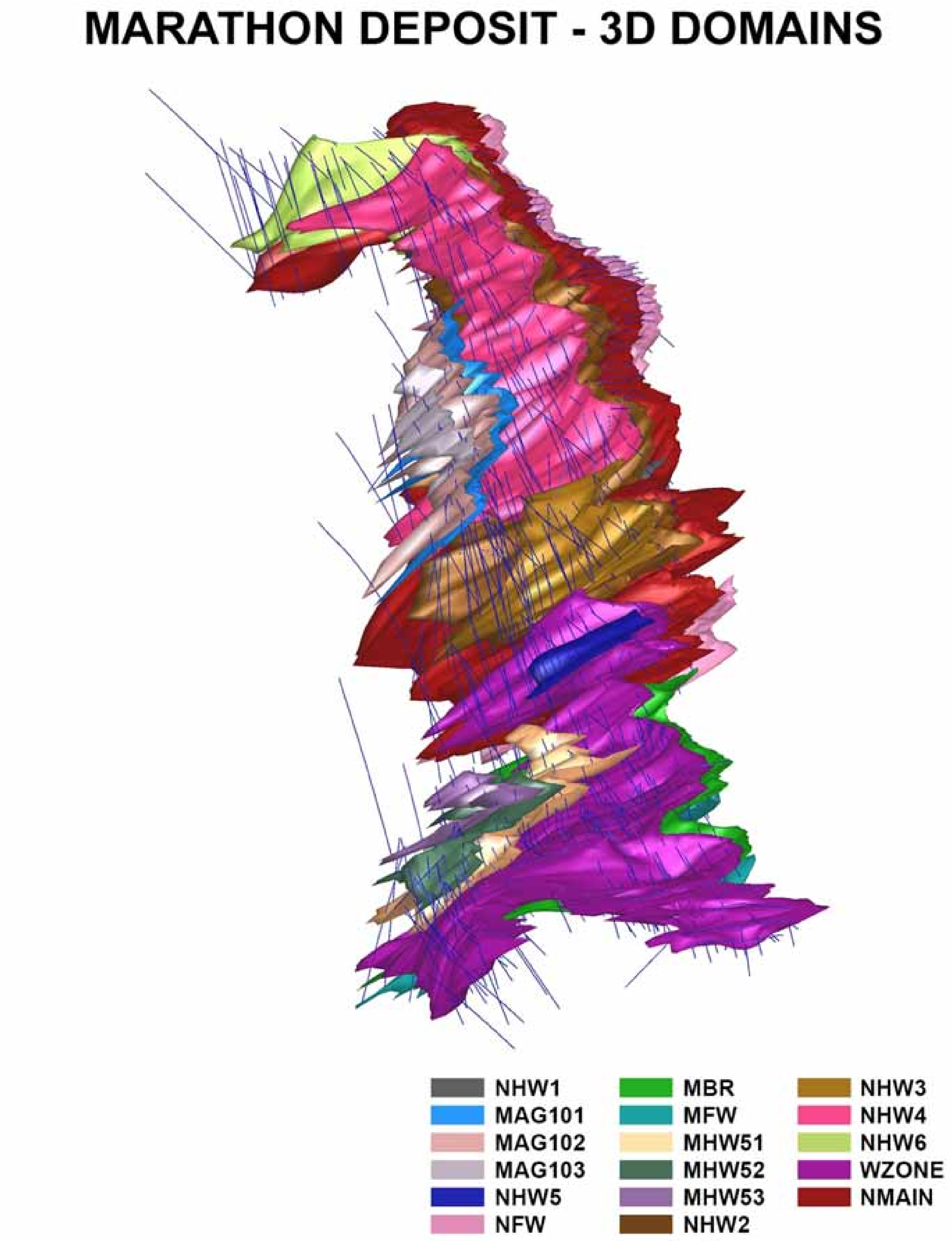
David Burga, P.Geo.

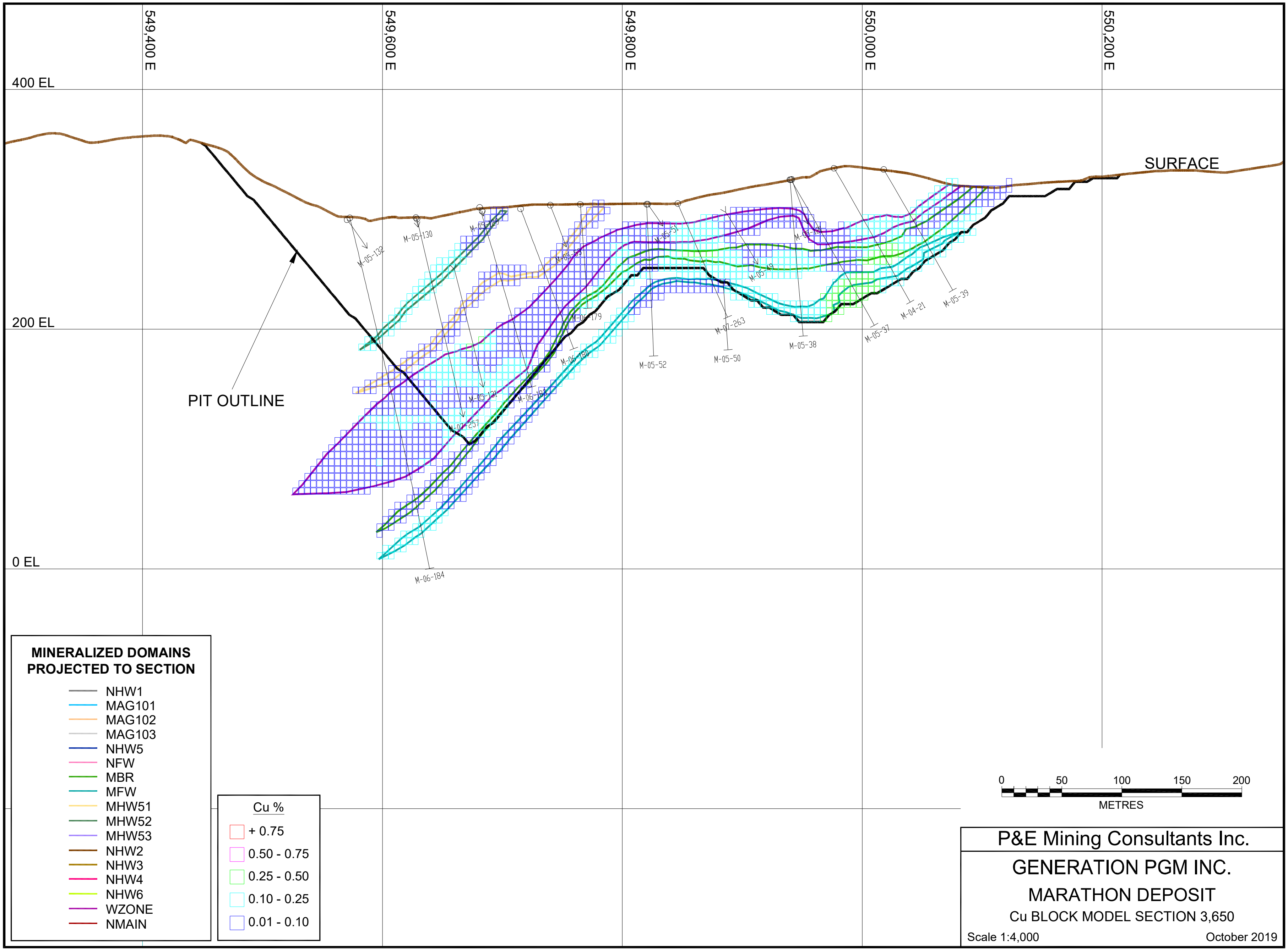
APPENDIX A SURFACE DRILL HOLE PLAN

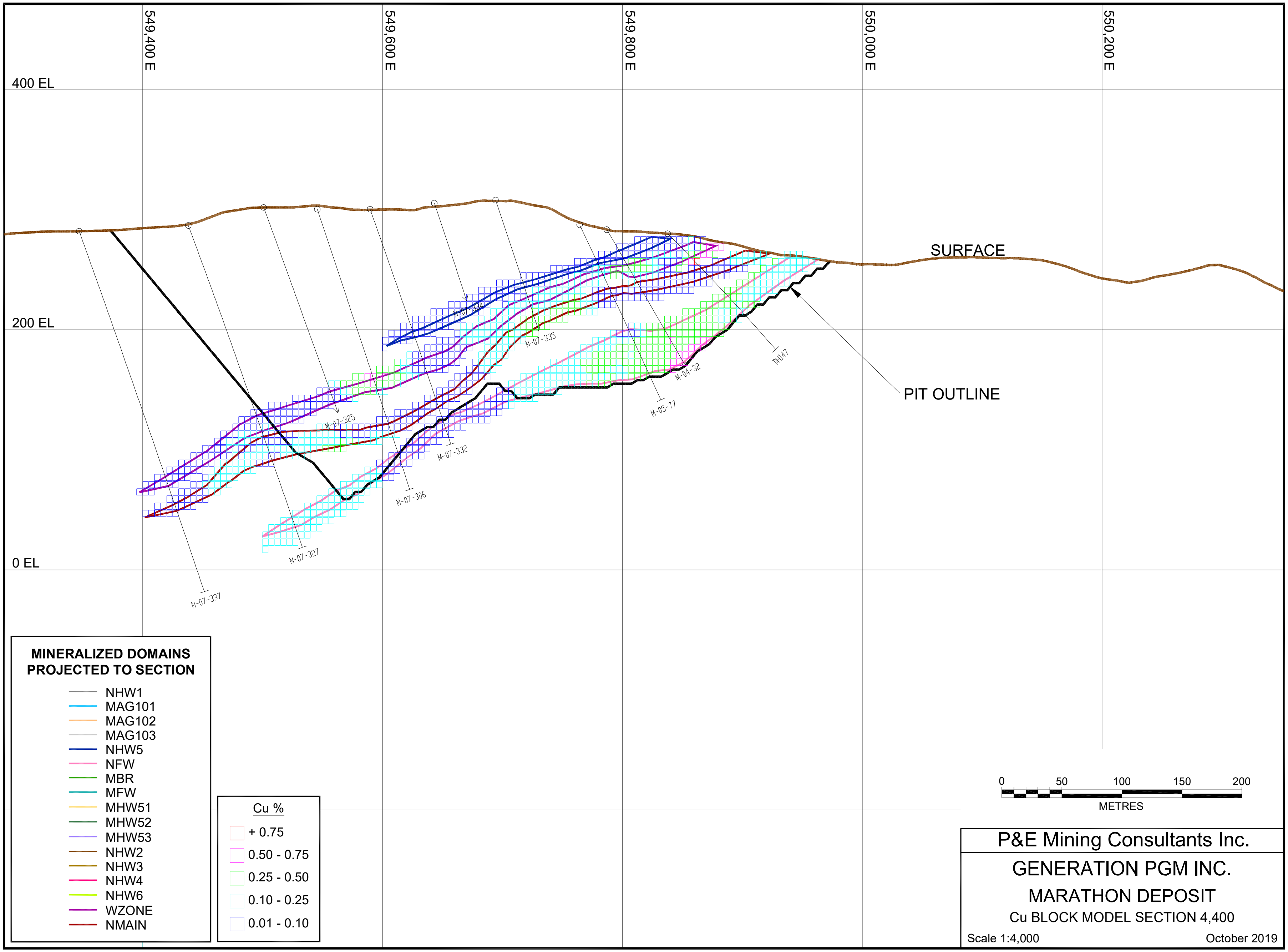


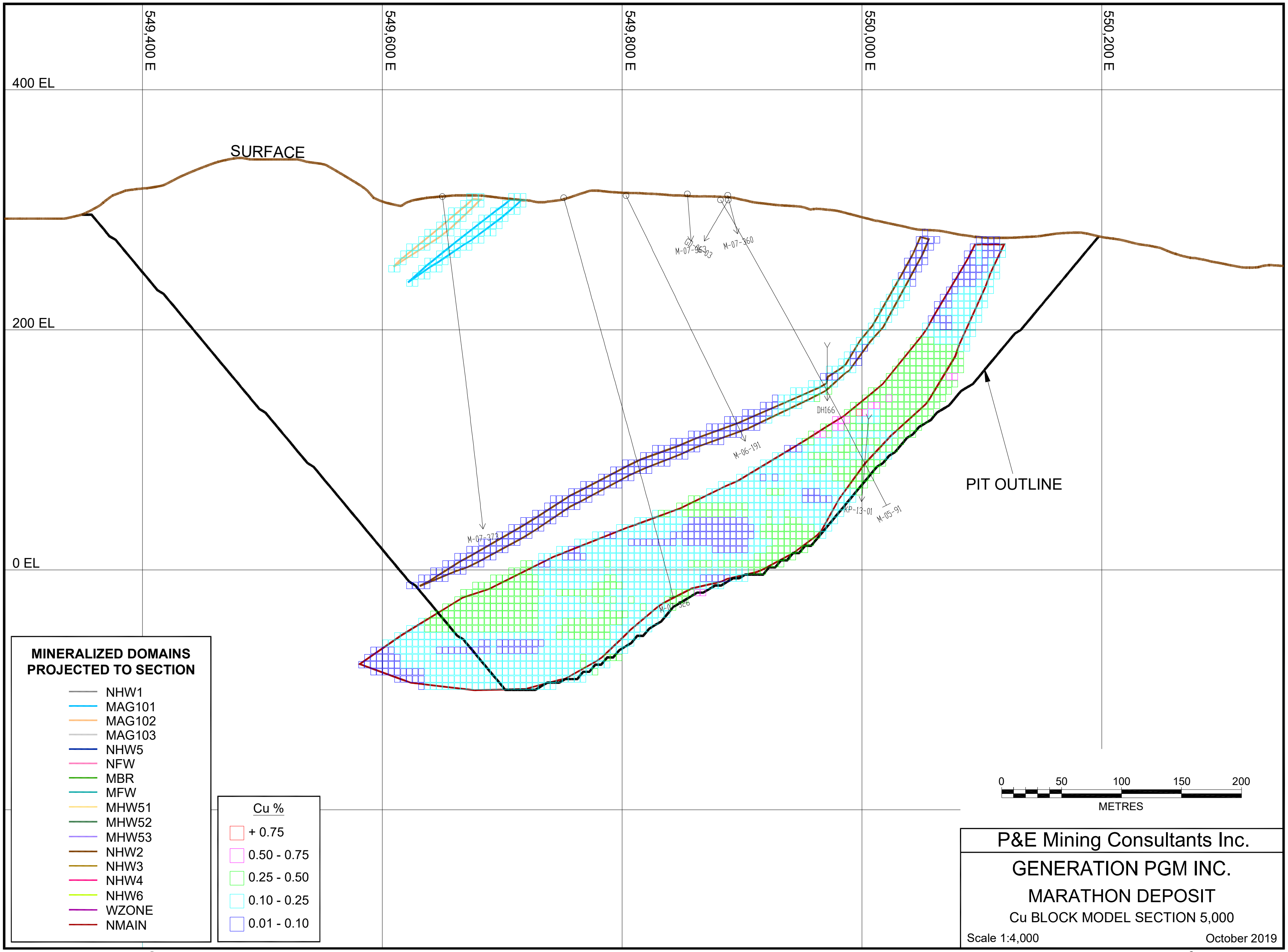
MARATHON DEPOSIT - 3D DOMAINS

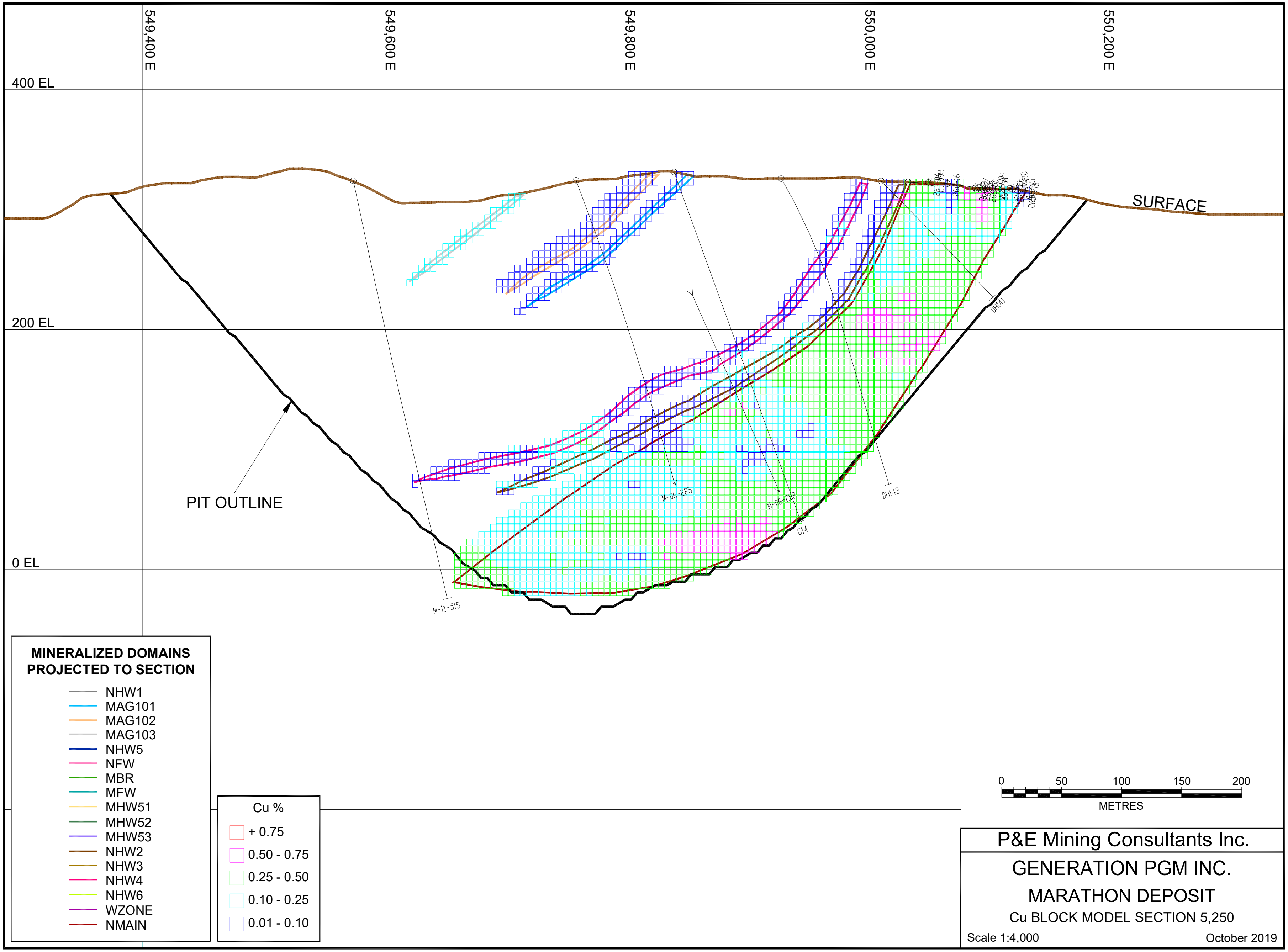


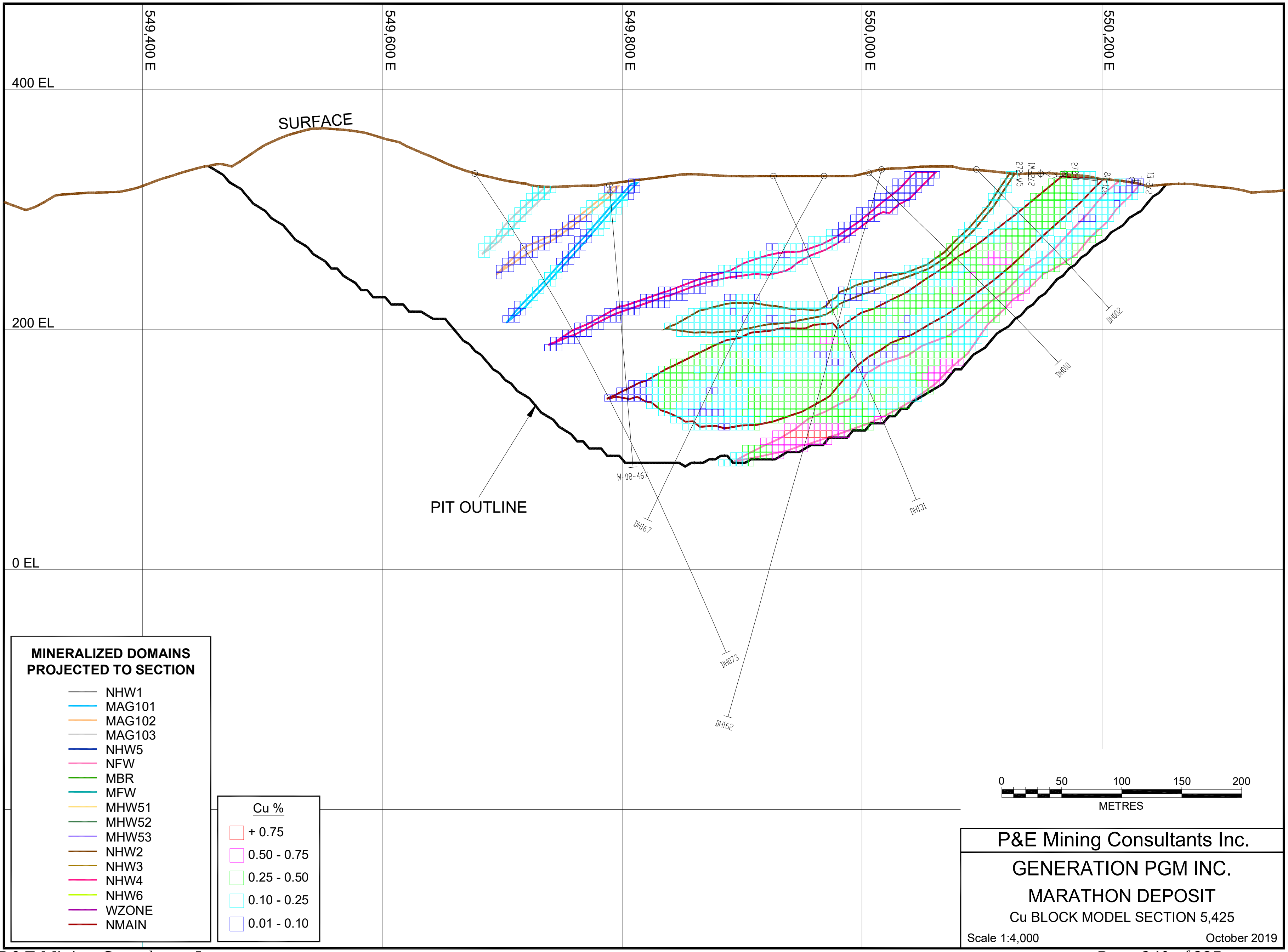
APPENDIX C CU BLOCK MODEL CROSS SECTIONS AND PLANS

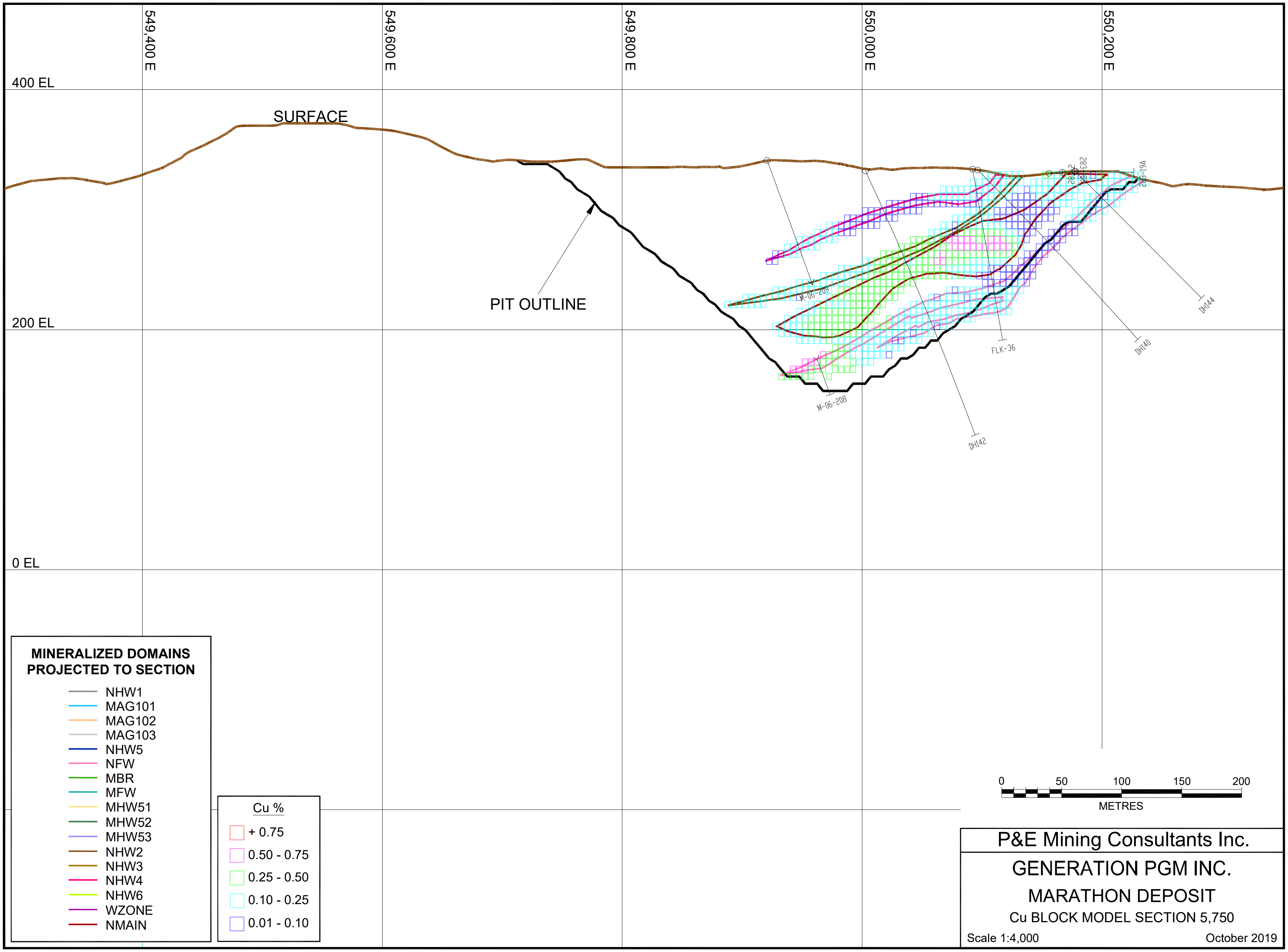

549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL SECTION 3,650
Scale 1:4,000
October 2019

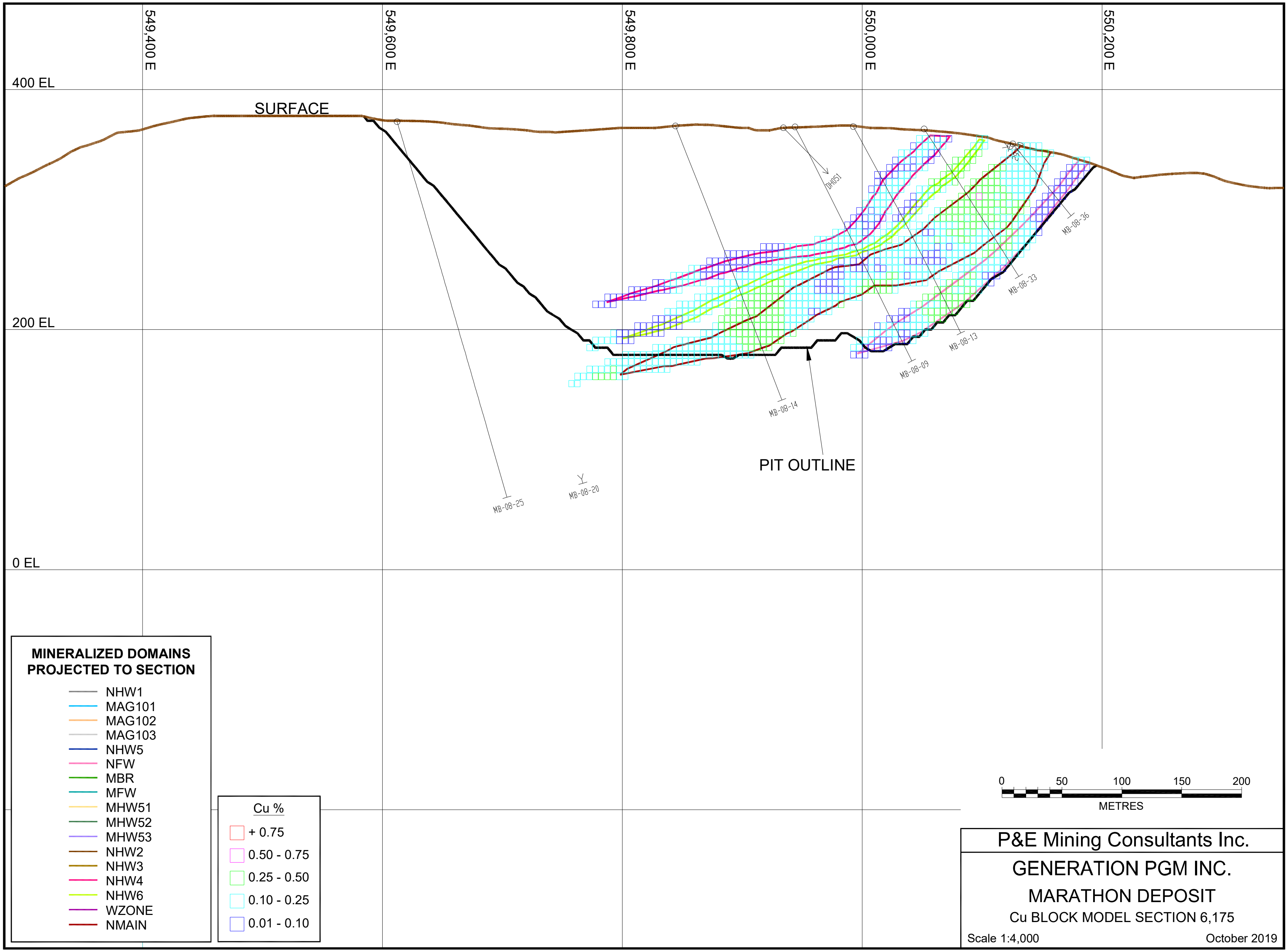

549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-07-337
M-07-327
M-07-306
M-07-332
M-07-325
M-07-335
M-05-77
M-04-32
DH147
MINERALIZED DOMAINS
PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL SECTION 4,400
Scale 1:4,000
October 2019


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL SECTION 5,000
Scale 1:4,000
October 2019

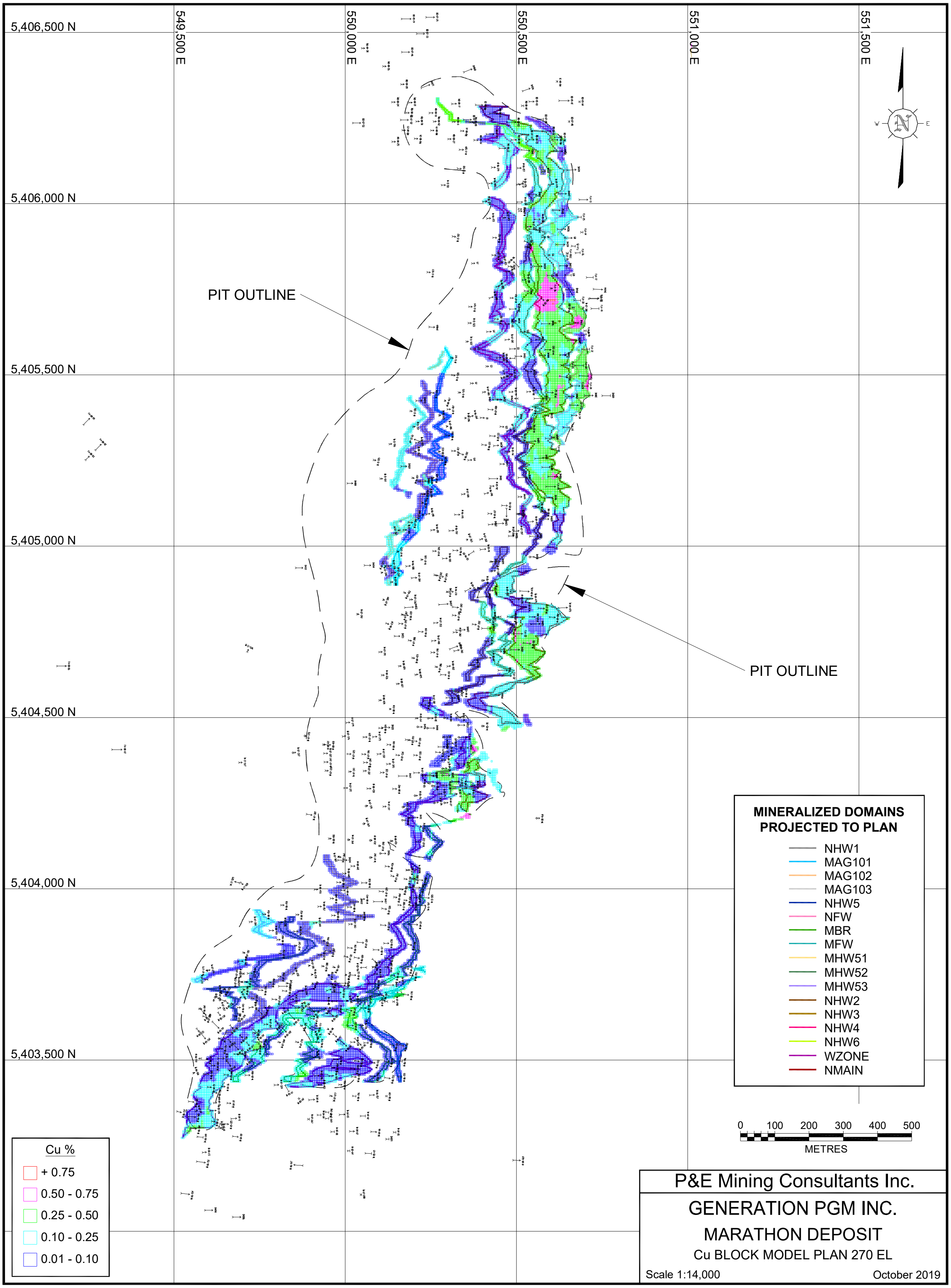

549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-11-515
M-06-225
M-06-202
G14
DH143
DH141
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL SECTION 5,250
Scale 1:4,000
October 2019


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-08-467
DH167
DH073
DH162
DH131
DH010
DH002
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0 50 100 150 200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL SECTION 5,425
Scale 1:4,000
October 2019


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL SECTION 5,750
Scale 1:4,000
October 2019



549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MB-08-25
MB-08-20
MB-08-14
MB-08-09
MB-08-13
MB-08-33
MB-08-36
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL SECTION 6,175
Scale 1:4,000
October 2019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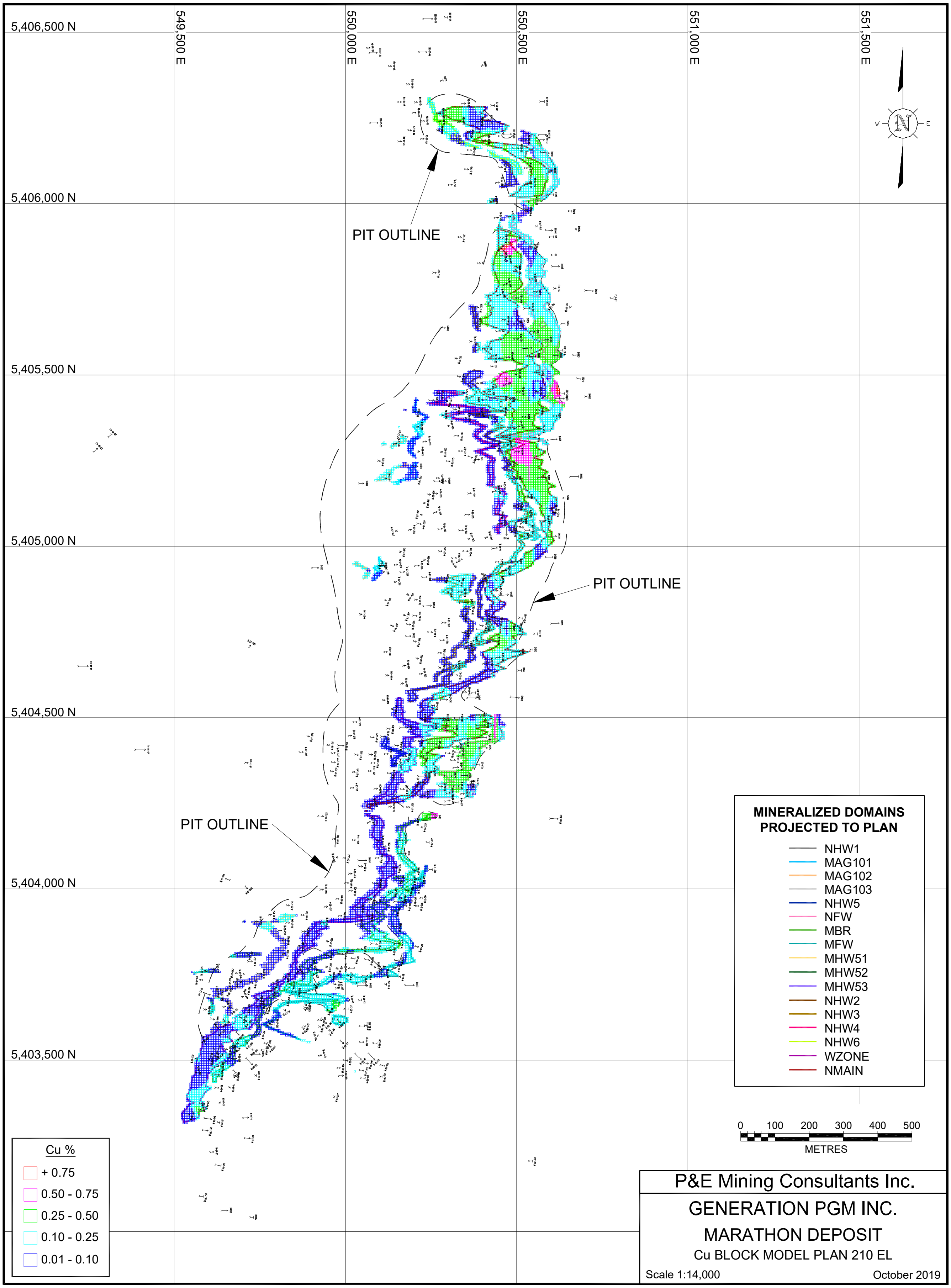
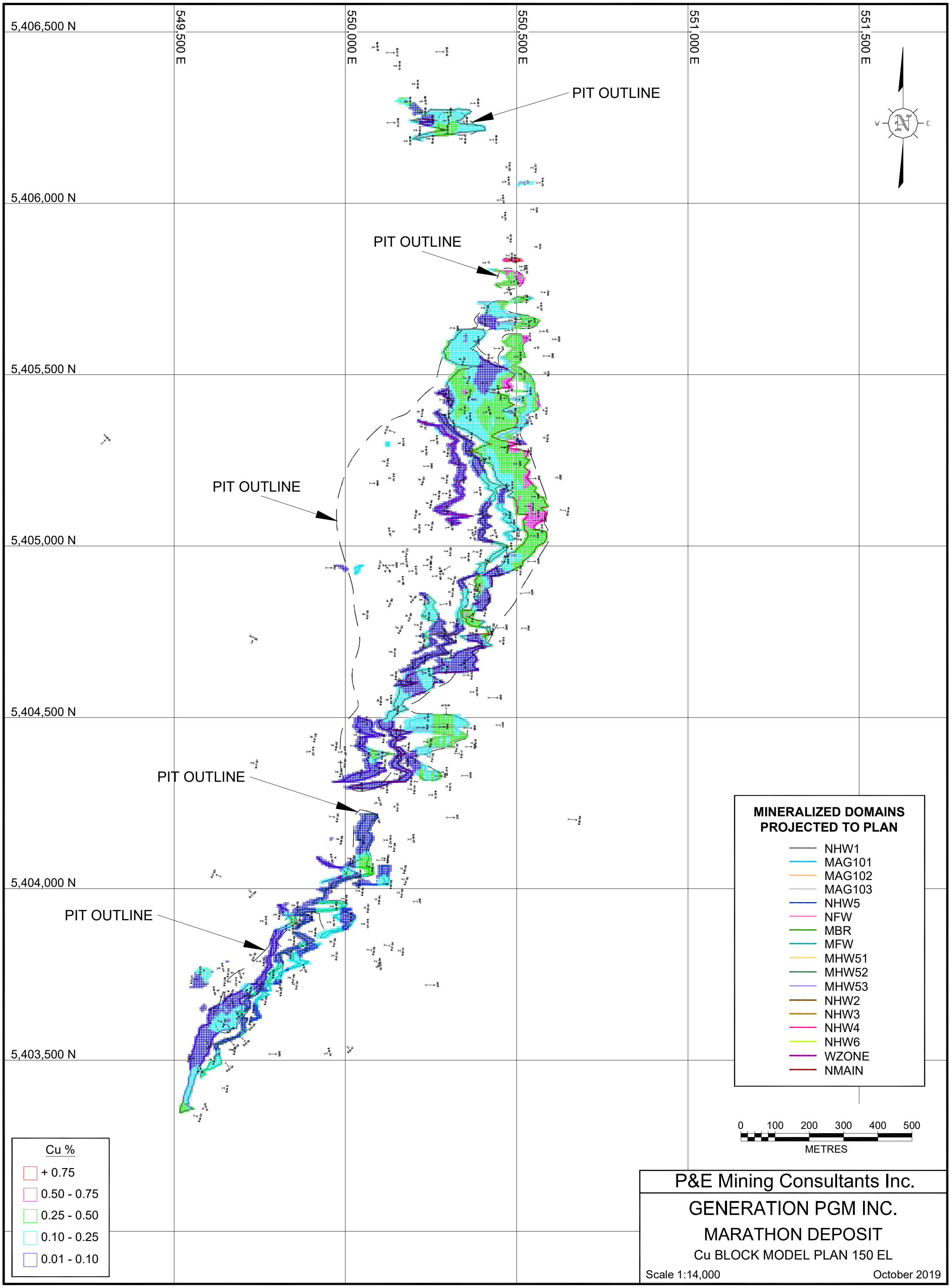
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL PLAN 270 EL
Scale 1:14,000
October 2019



5,406,500 N
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL PLAN 210 EL
Scale 1:14,000
October 2019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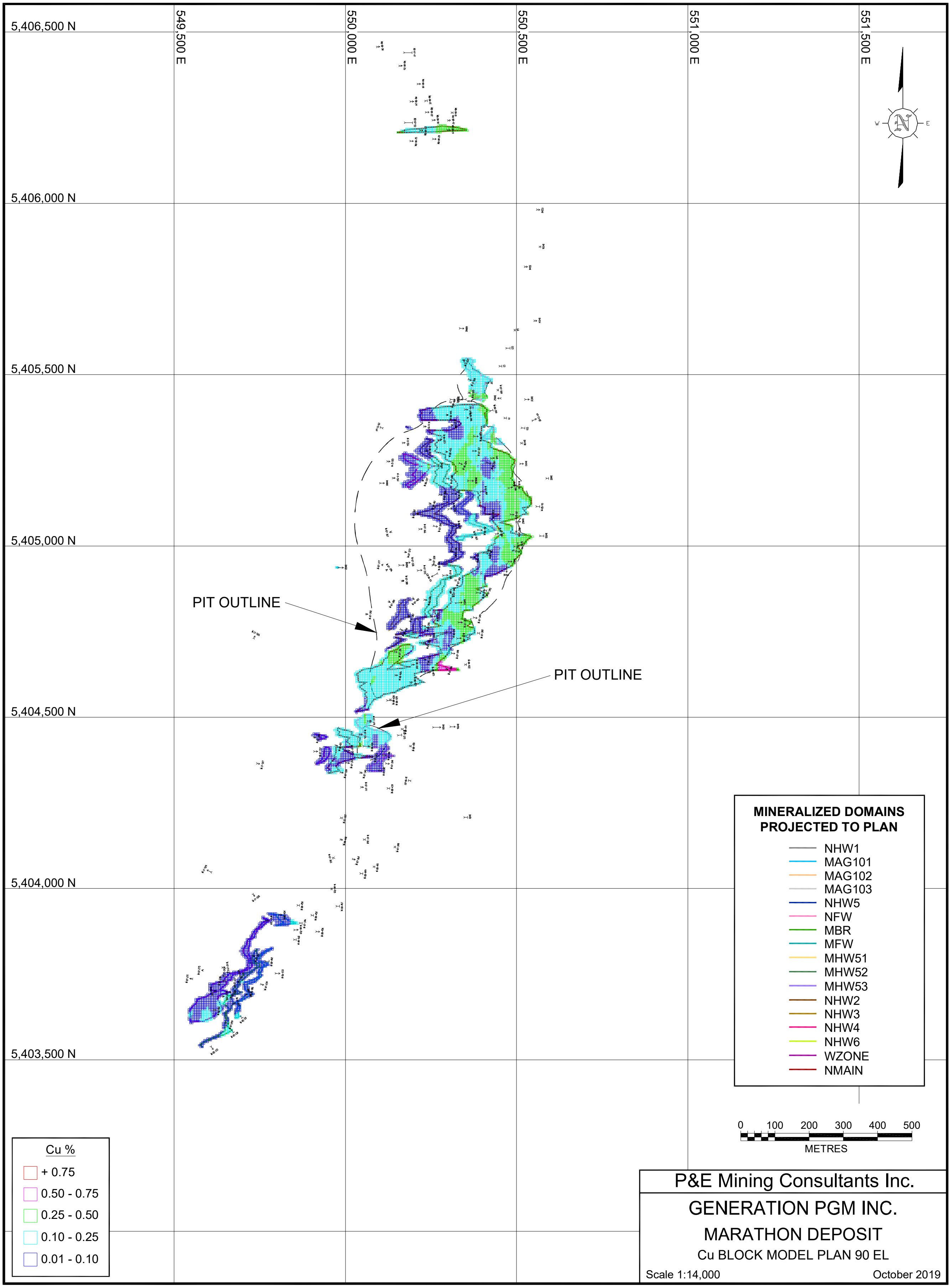
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL PLAN 150 EL
Scale 1:14,000
October 2019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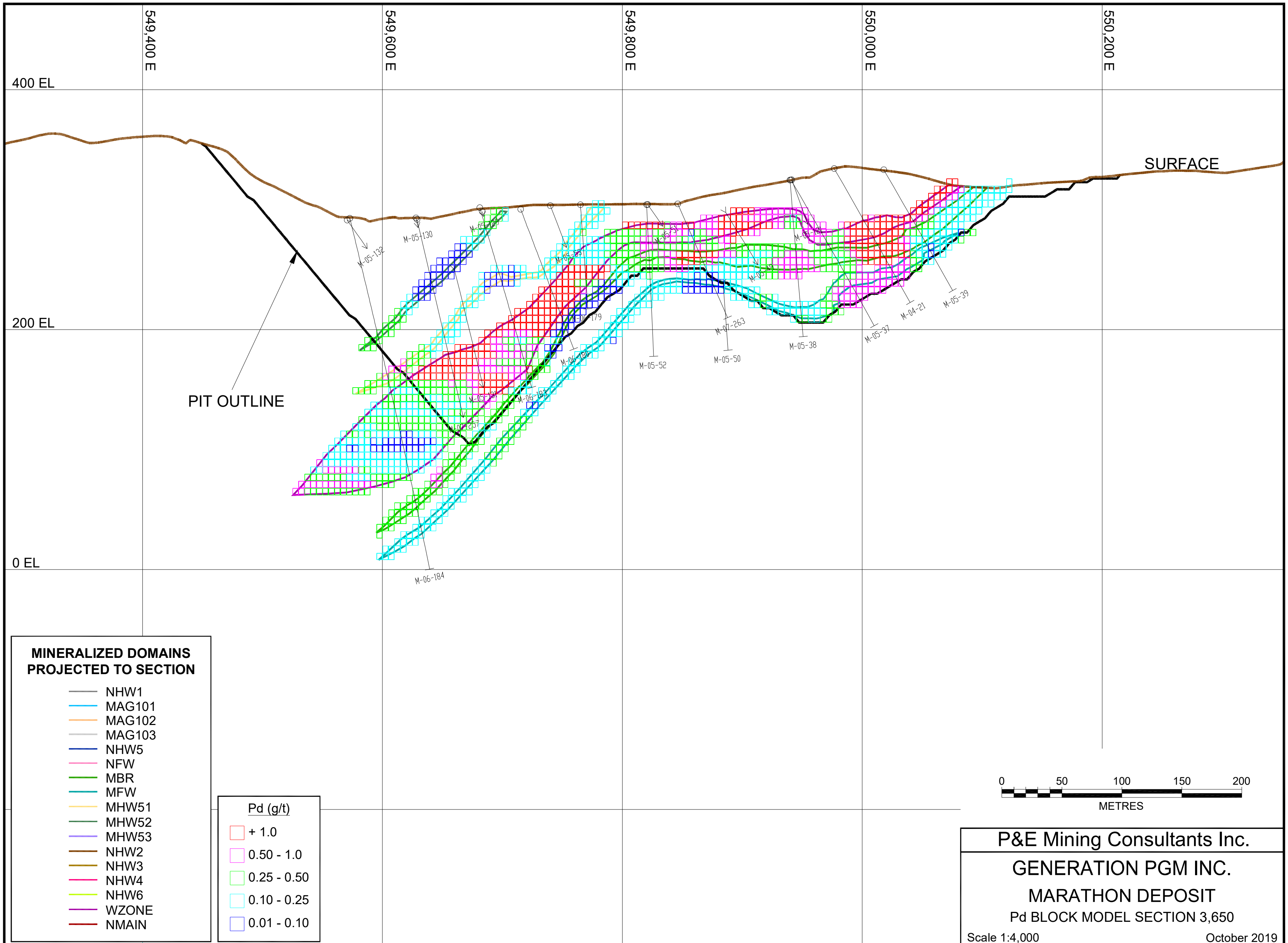
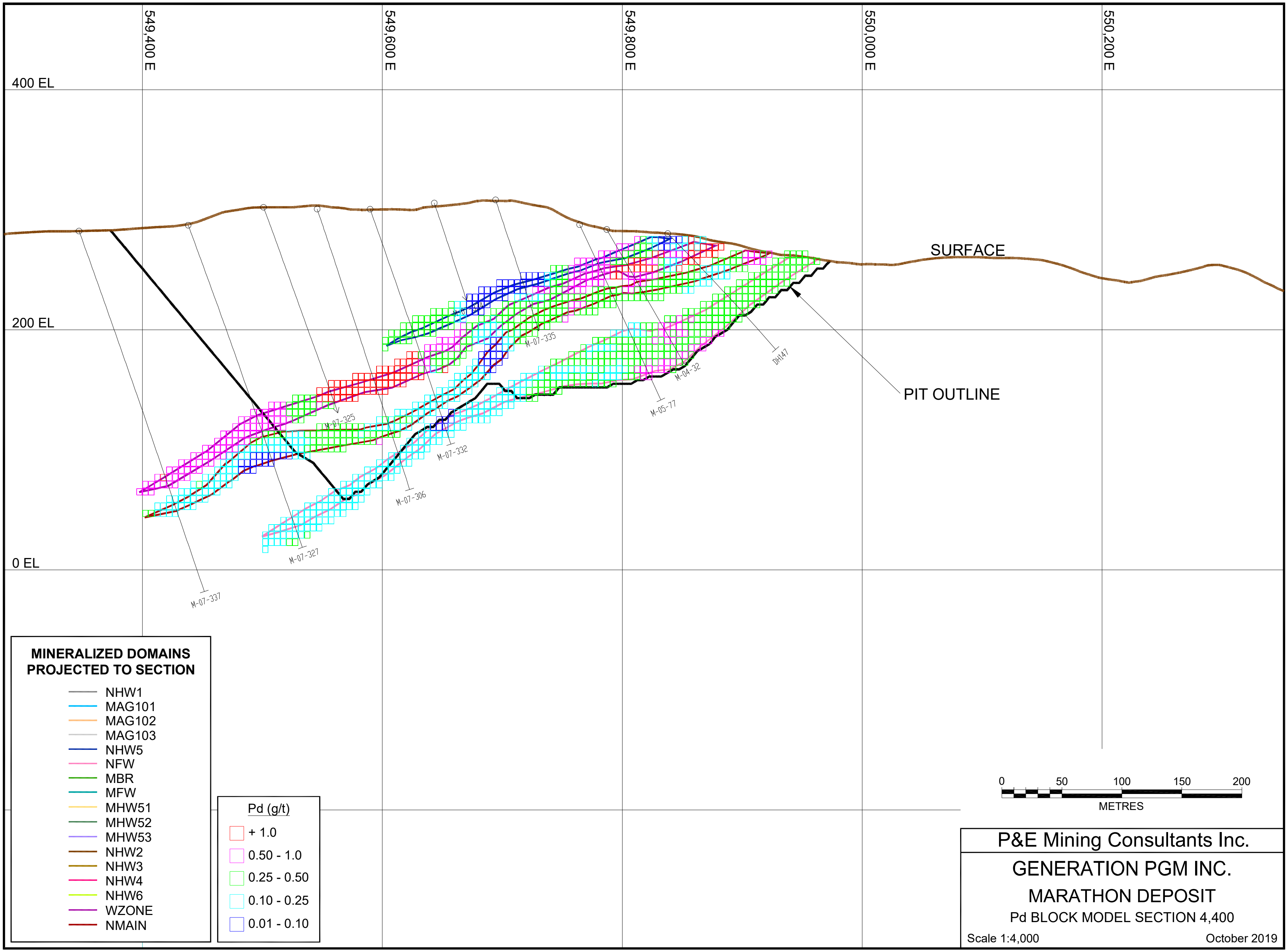
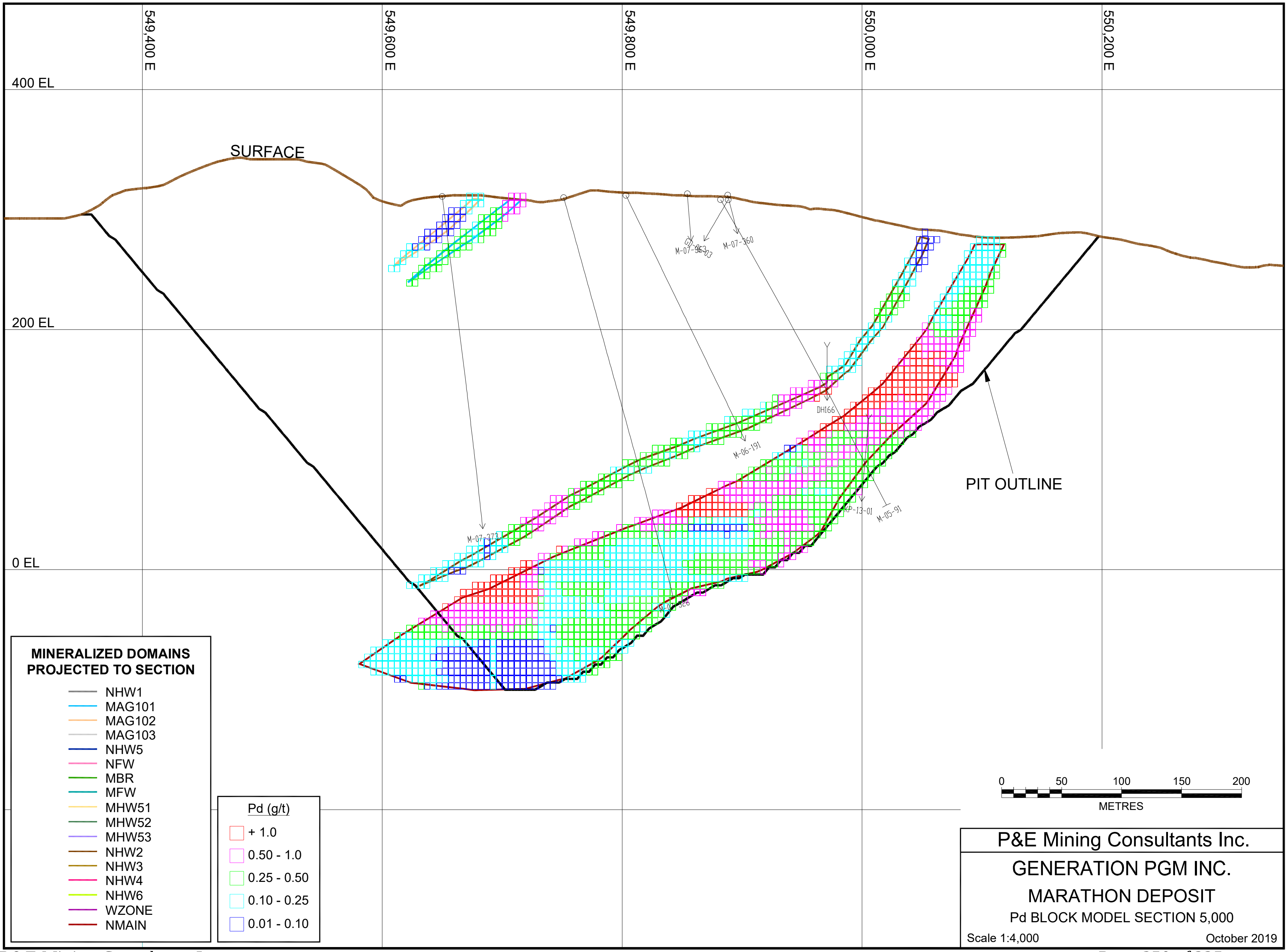
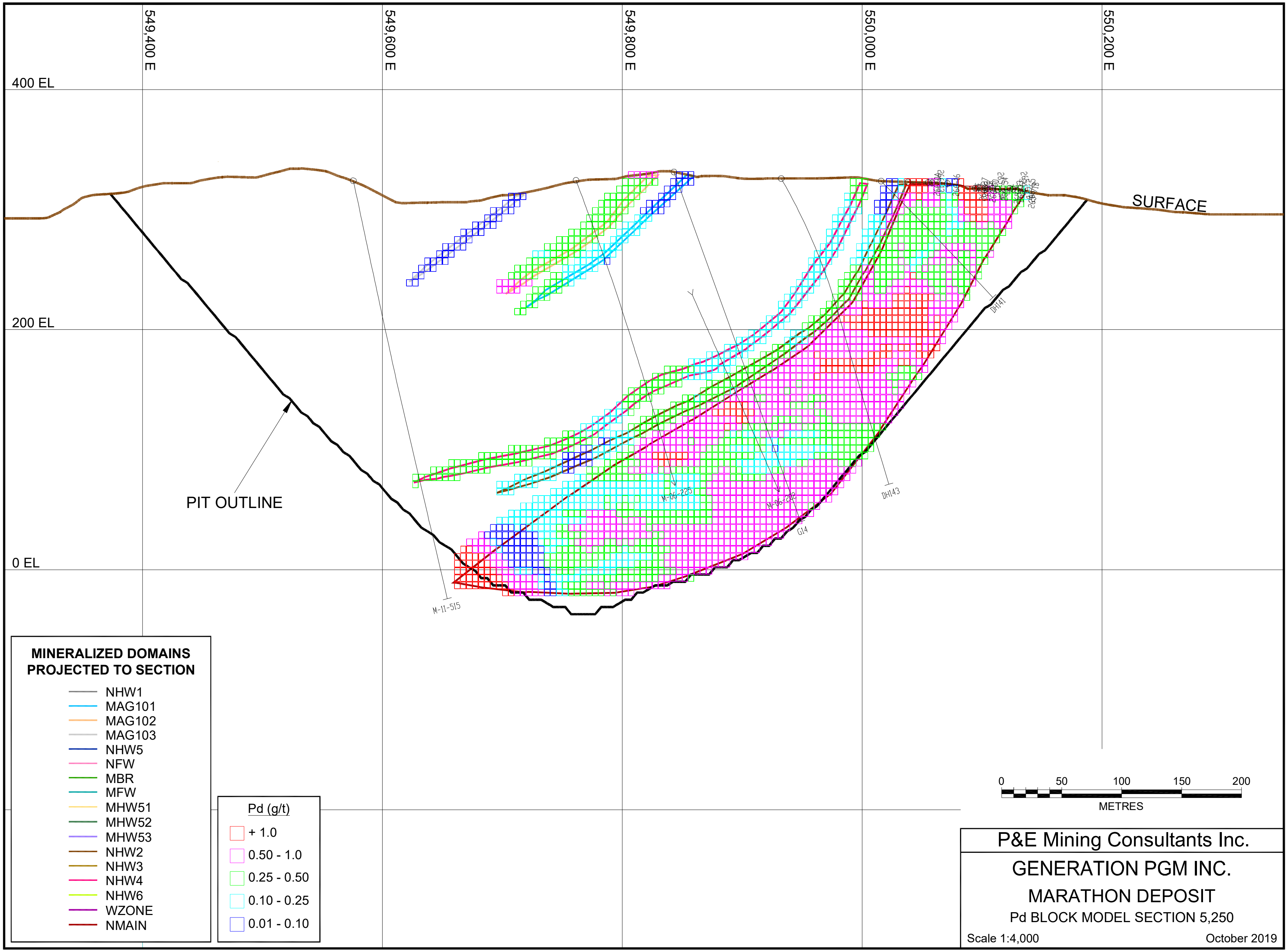
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS
PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
Cu %
+ 0.75
0.50 - 0.75
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Cu BLOCK MODEL PLAN 90 EL
Scale 1:14,000
October 2019

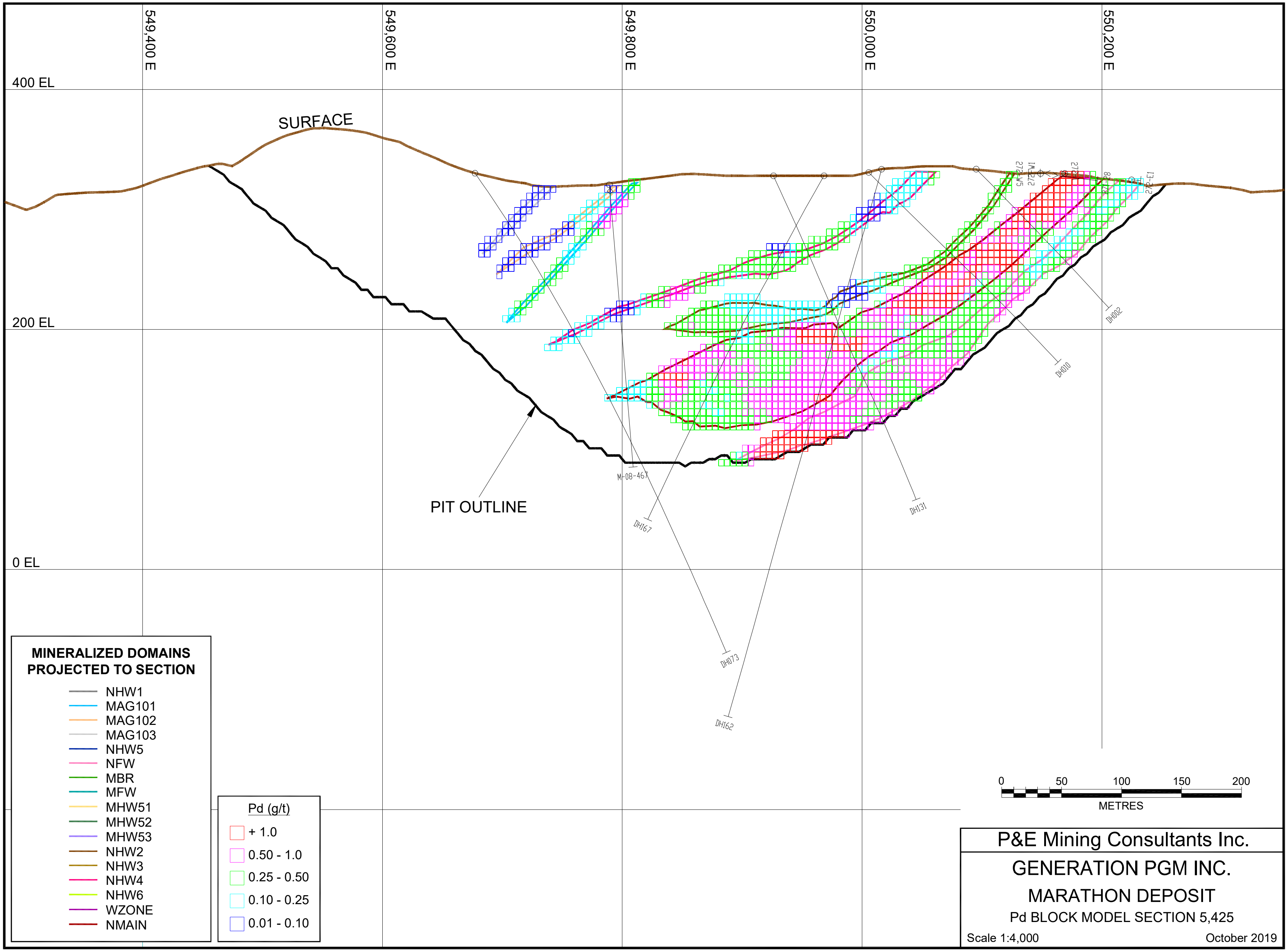
APPENDIX D PD BLOCK MODEL CROSS SECTIONS AND PLANS

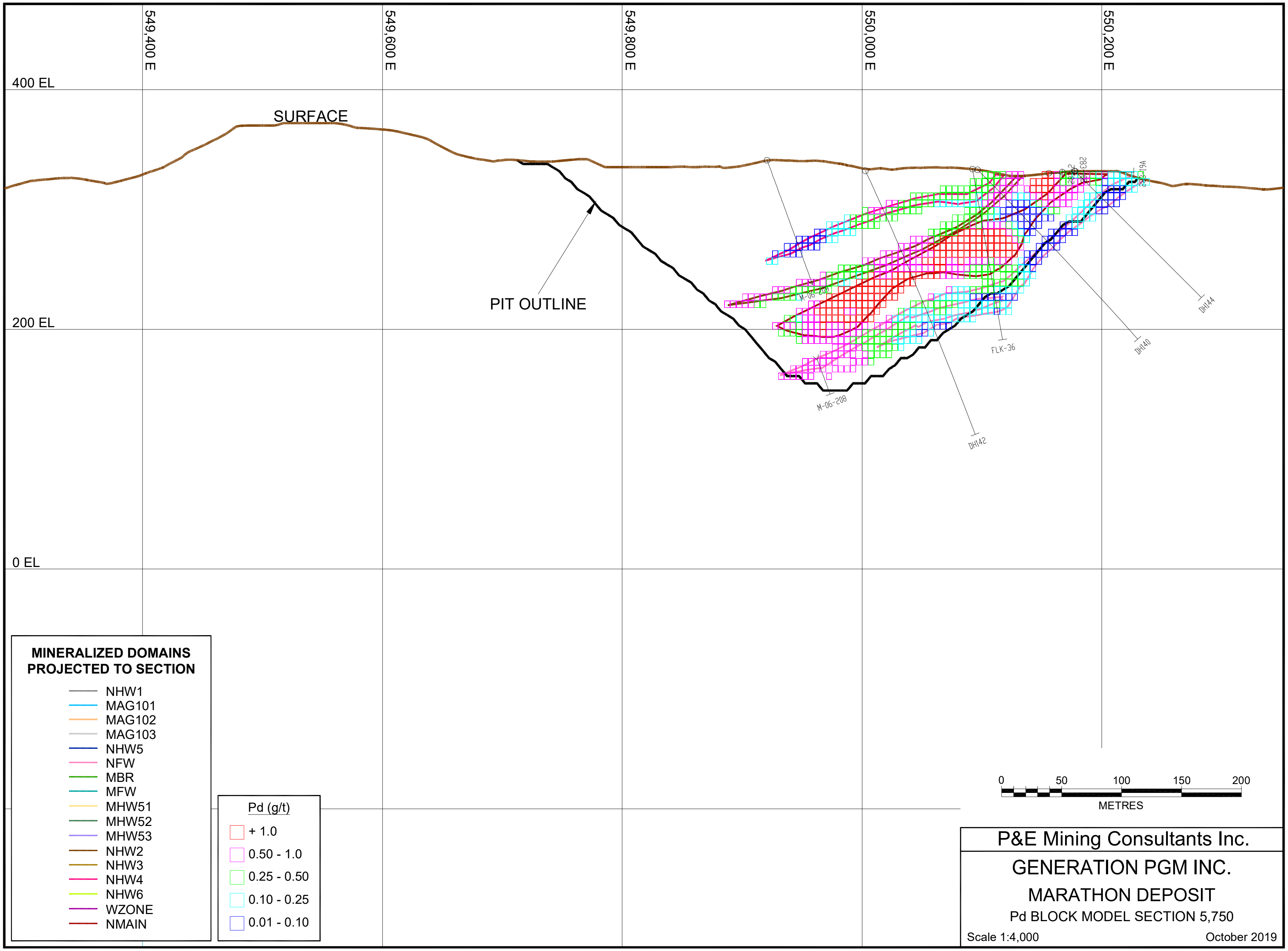

549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL SECTION 3,650
Scale 1:4,000
October 2019

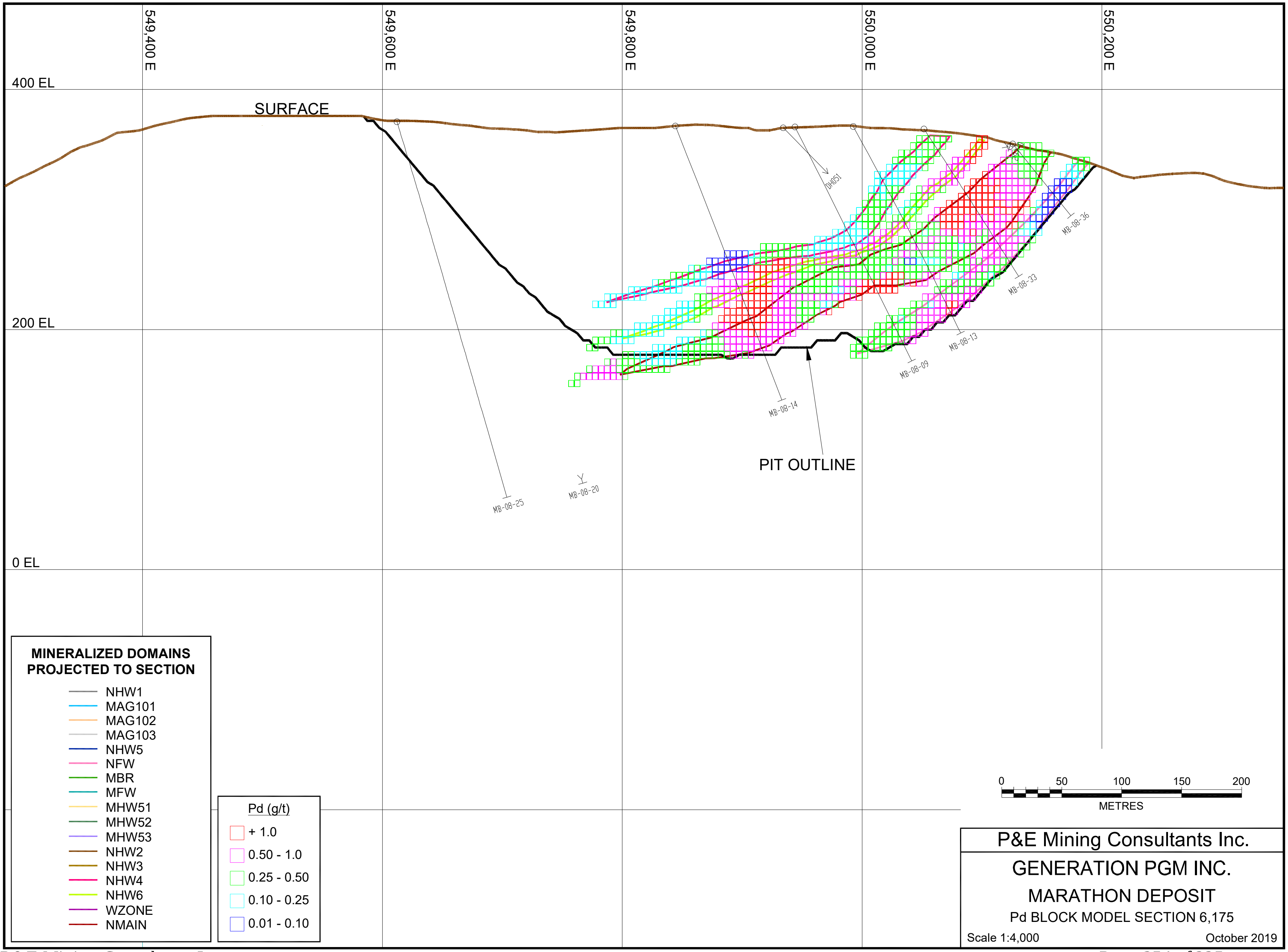

400 EL
200 EL
0 EL
549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL SECTION 4,400
Scale 1:4,000
October 2019


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL SECTION 5,000
Scale 1:4,000
October 2019

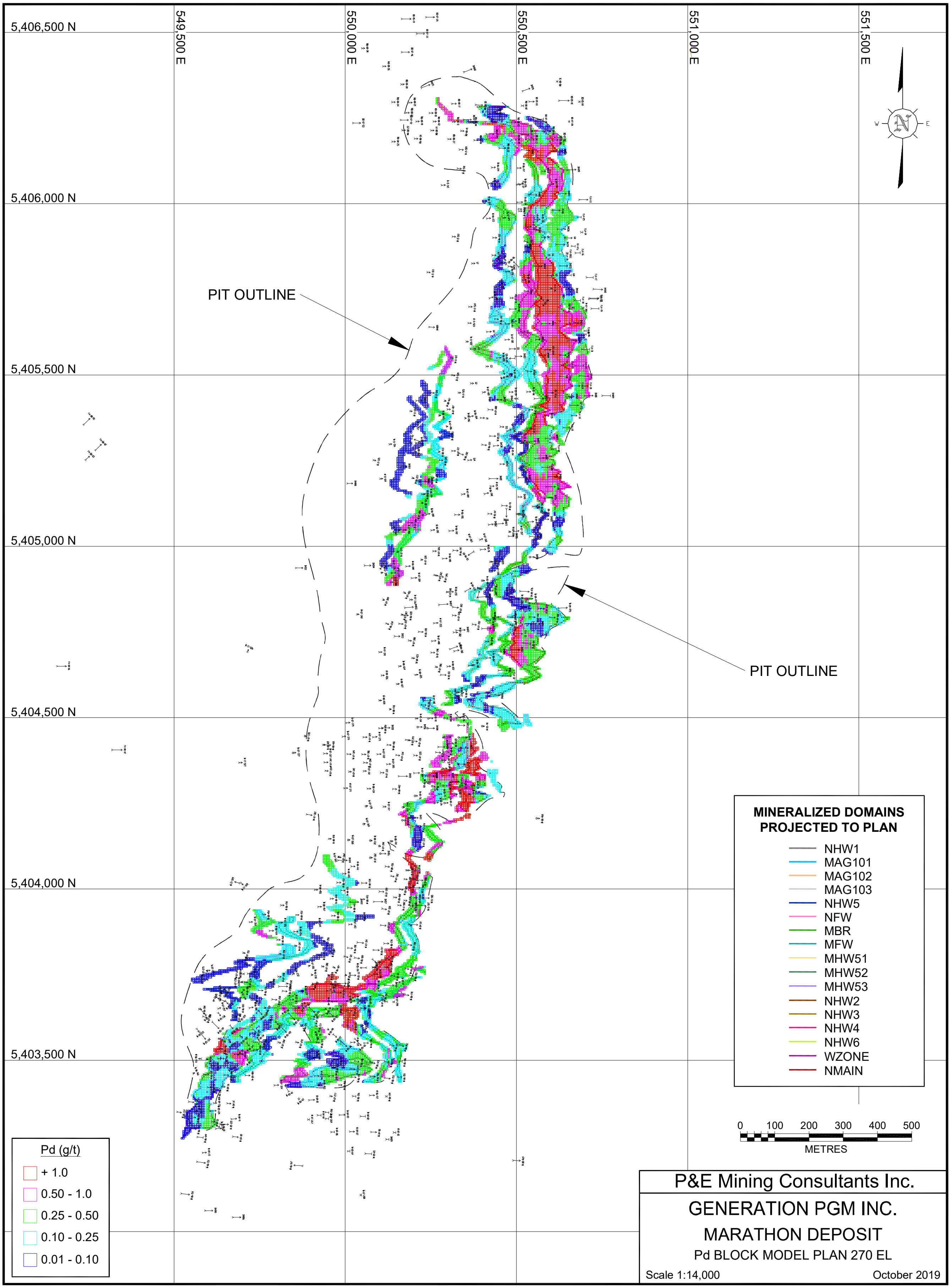

549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL SECTION 5,250
Scale 1:4,000
October 2019


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
DH002
DH010
DH131
DH167
DH073
DH162
M-08-467
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL SECTION 5,425
Scale 1:4,000
October 2019


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-06-208
FLK-36
DH140
DH142
DH144
MINERALIZED DOMAINS
PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL SECTION 5,750
Scale 1:4,000
October 2019



549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MB-08-25
MB-08-20
MB-08-14
MB-08-09
MB-08-13
MB-08-33
MB-08-36
DH051
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL SECTION 6,175
Scale 1:4,000
October 2019



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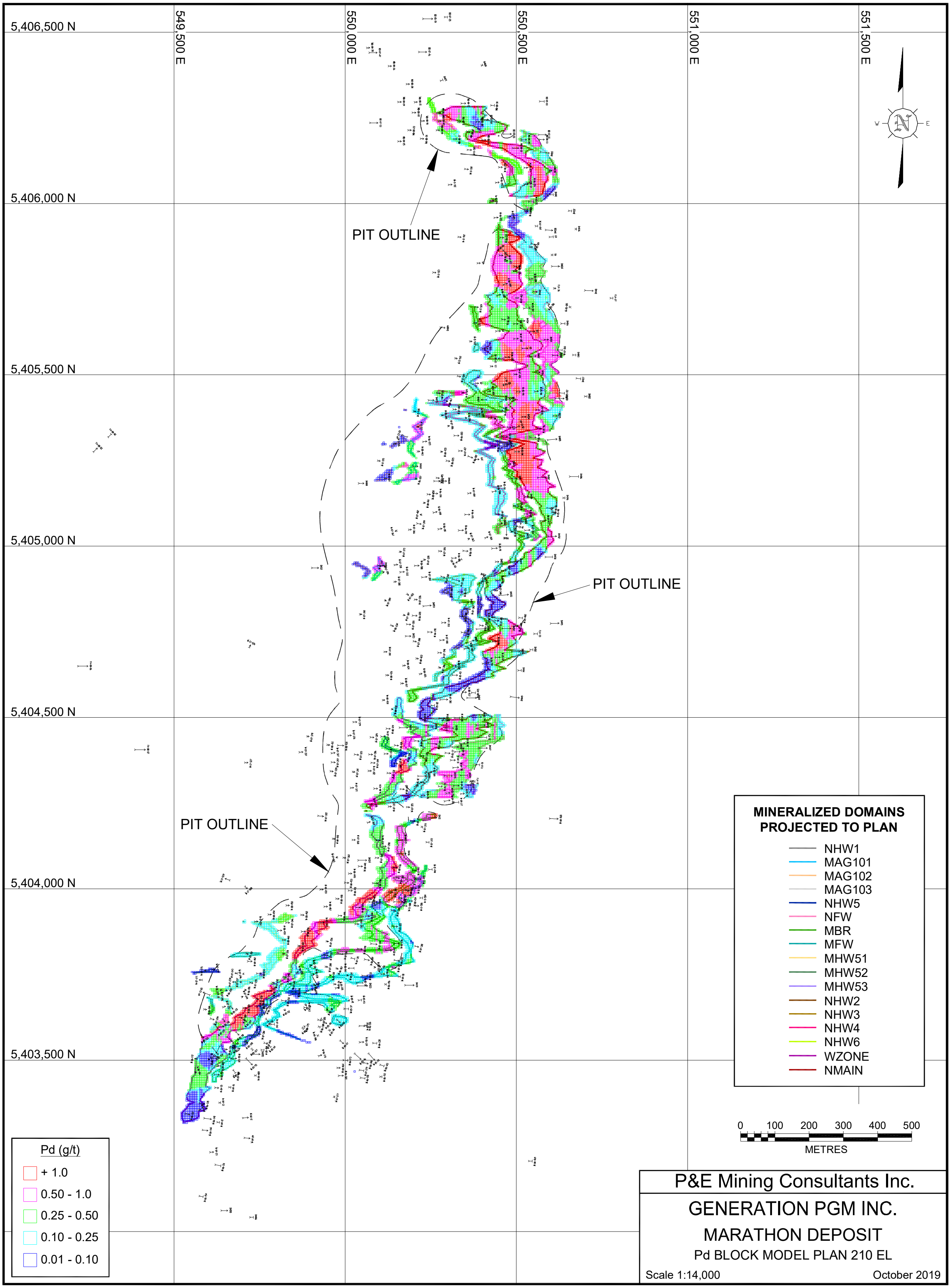
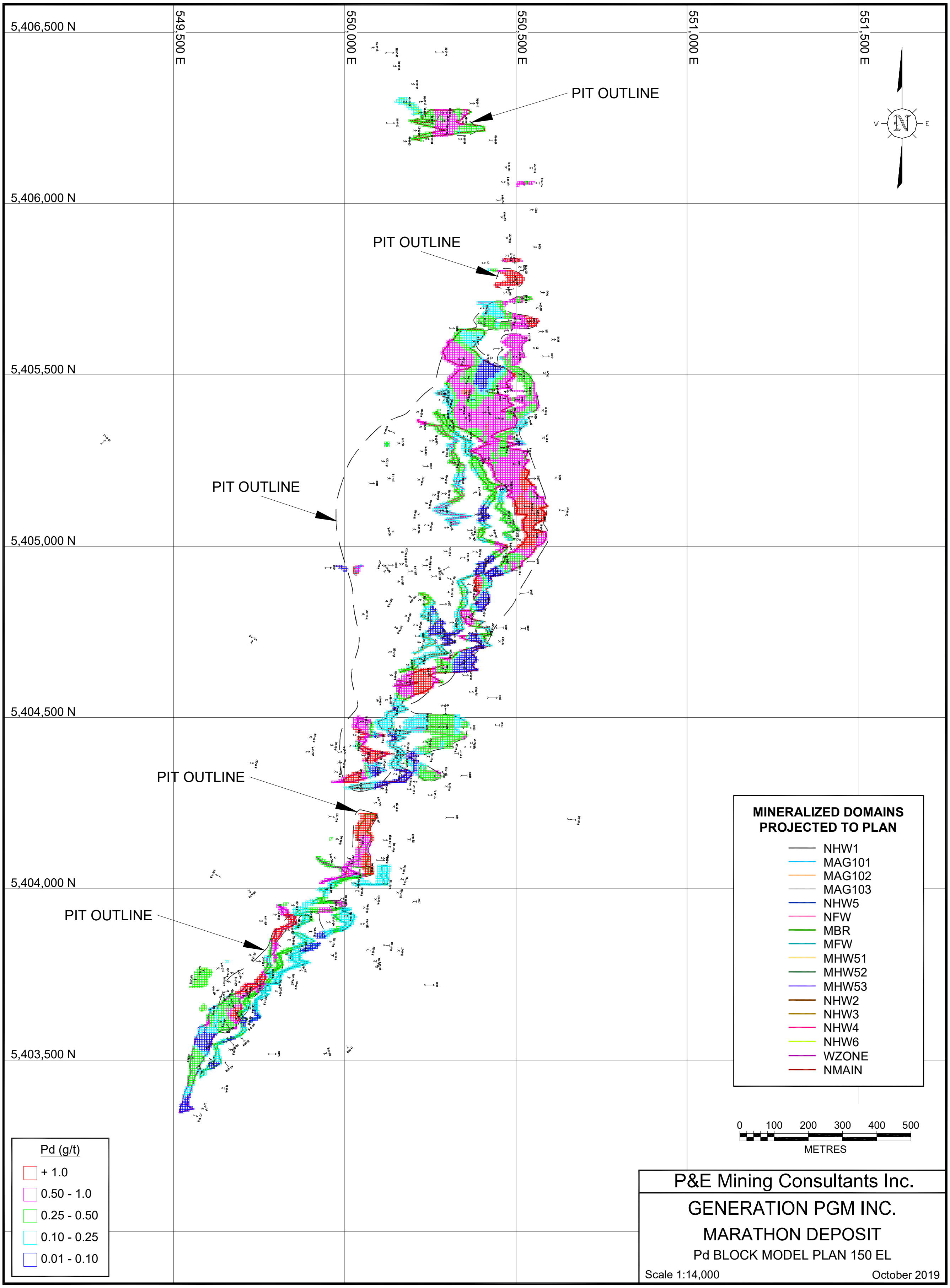
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL PLAN 270 EL
Scale 1:14,000
October 2019


5,406,500 N
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
W
E
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL PLAN 210 EL
Scale 1:14,000
October 2019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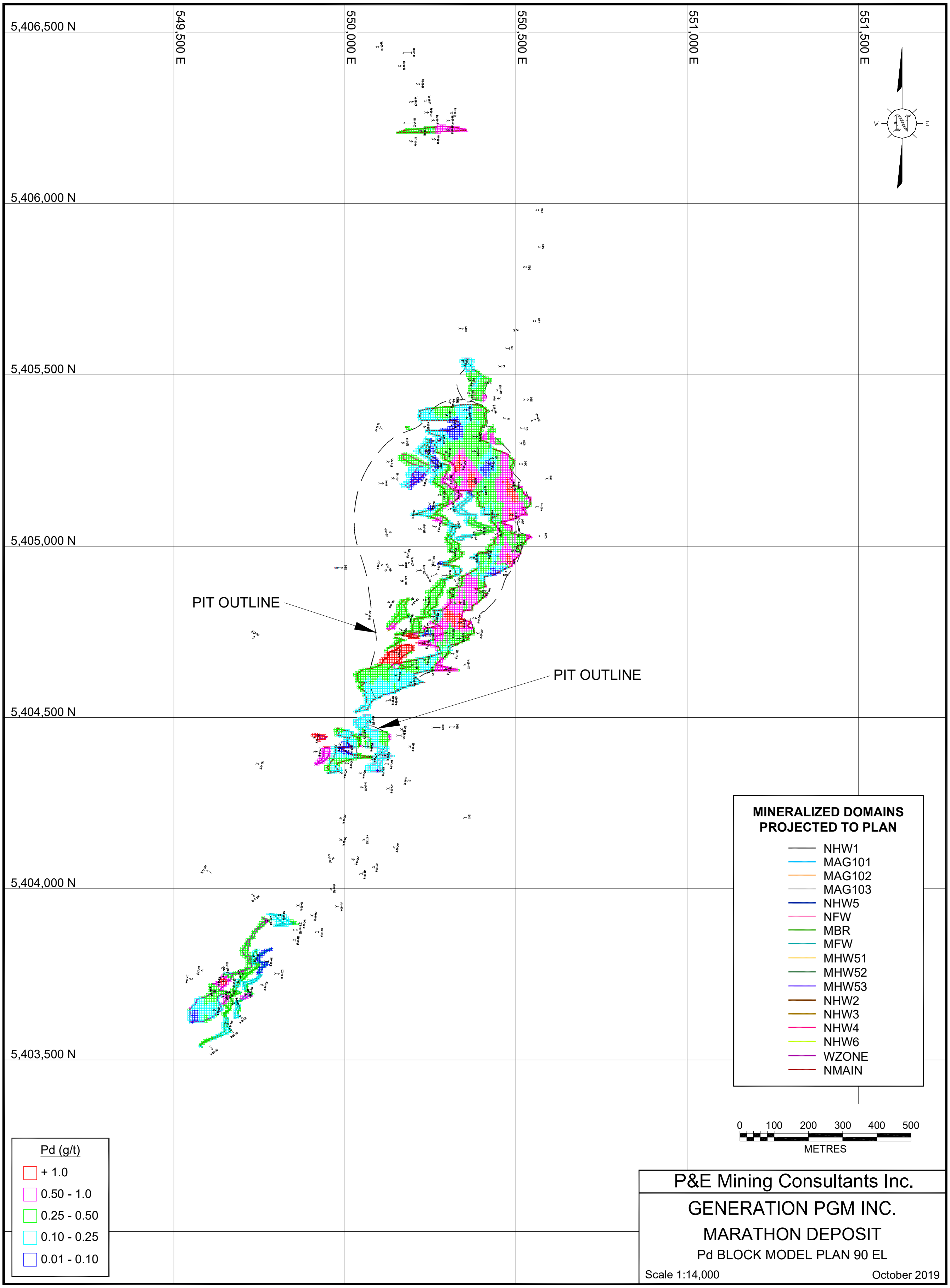
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
N
W
E
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL PLAN 150 EL
Scale 1:14,000
October 2019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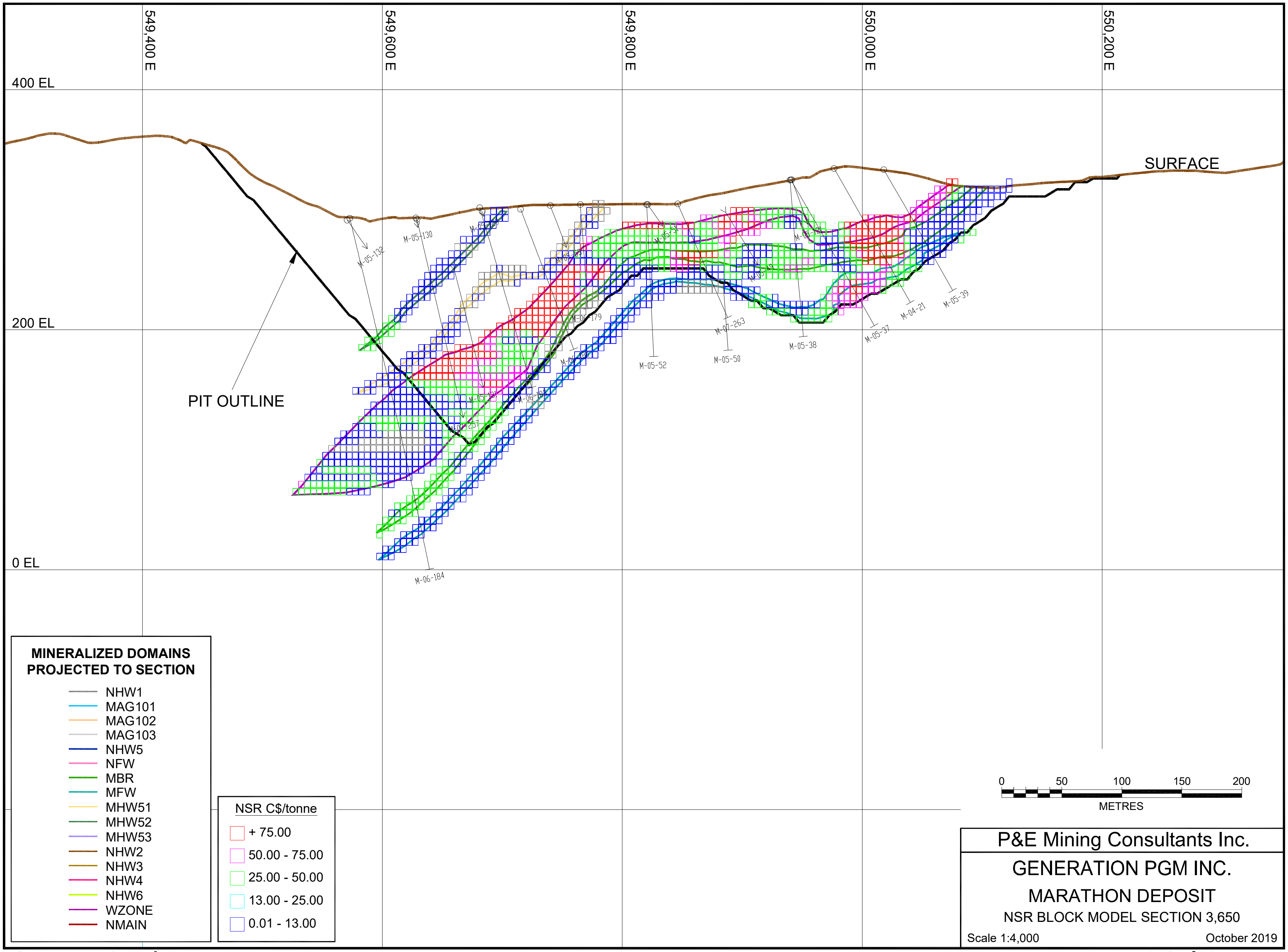
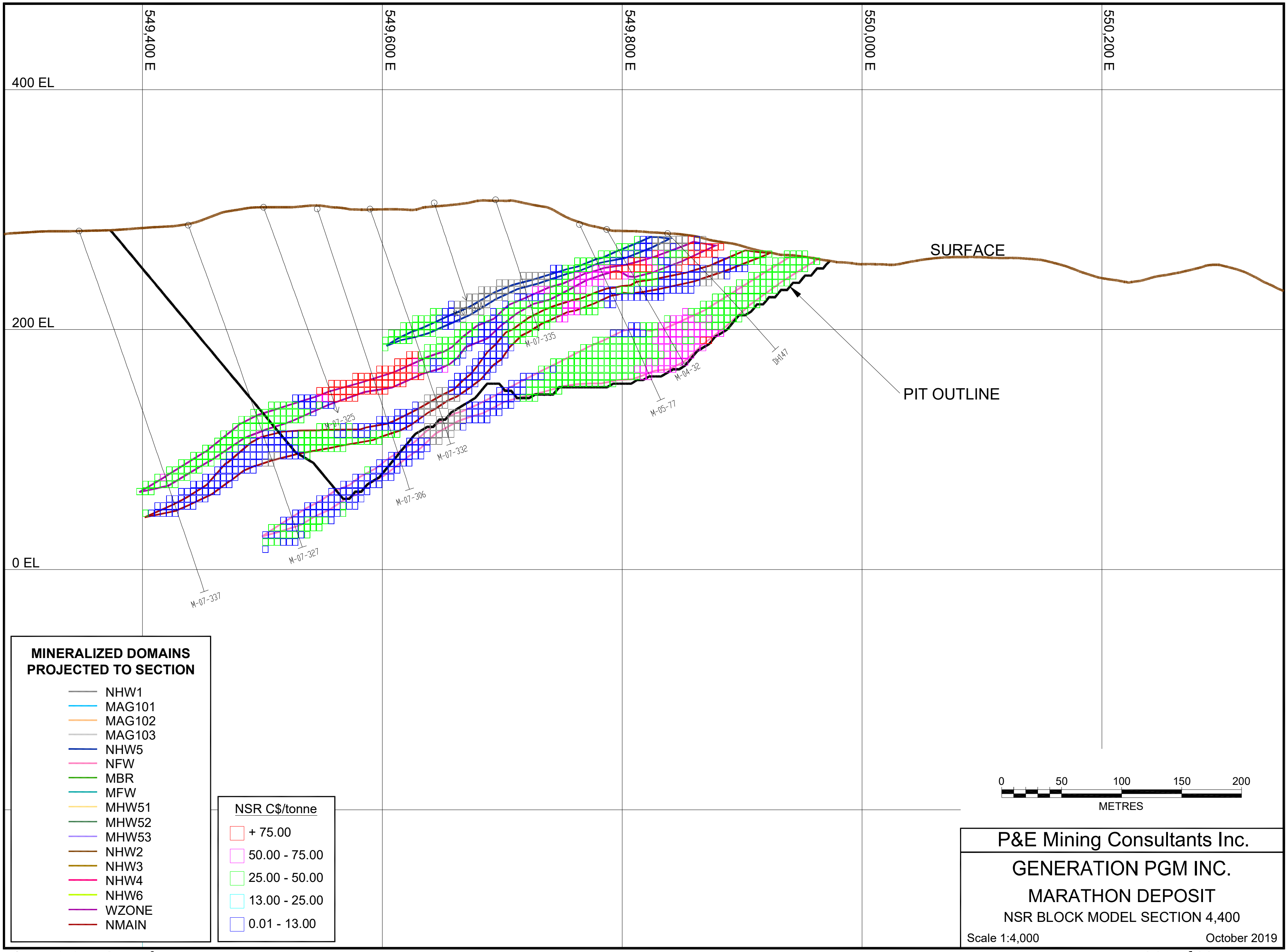
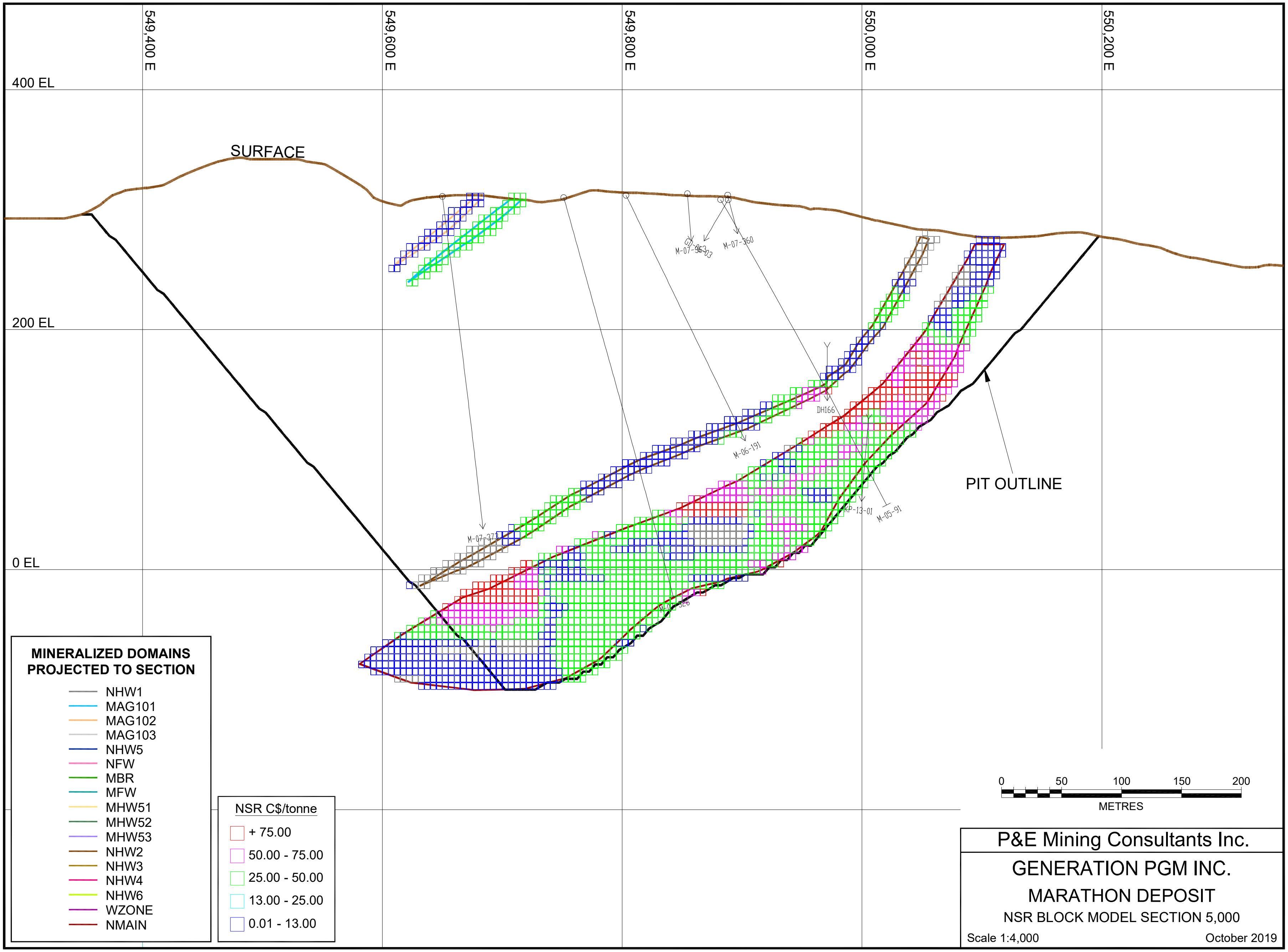
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
Pd (g/t)
+ 1.0
0.50 - 1.0
0.25 - 0.50
0.10 - 0.25
0.01 - 0.10
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
Pd BLOCK MODEL PLAN 90 EL
Scale 1:14,000
October 2019

APPENDIX E NSR BLOCK MODEL CROSS SECTIONS AND PLANS



549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL SECTION 3,650
Scale 1:4,000
October 2019


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-07-337
M-07-327
M-07-306
M-07-332
M-07-325
M-07-335
M-05-77
M-04-32
DH147
MINERALIZED DOMAINS
PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL SECTION 4,400
Scale 1:4,000
October 2019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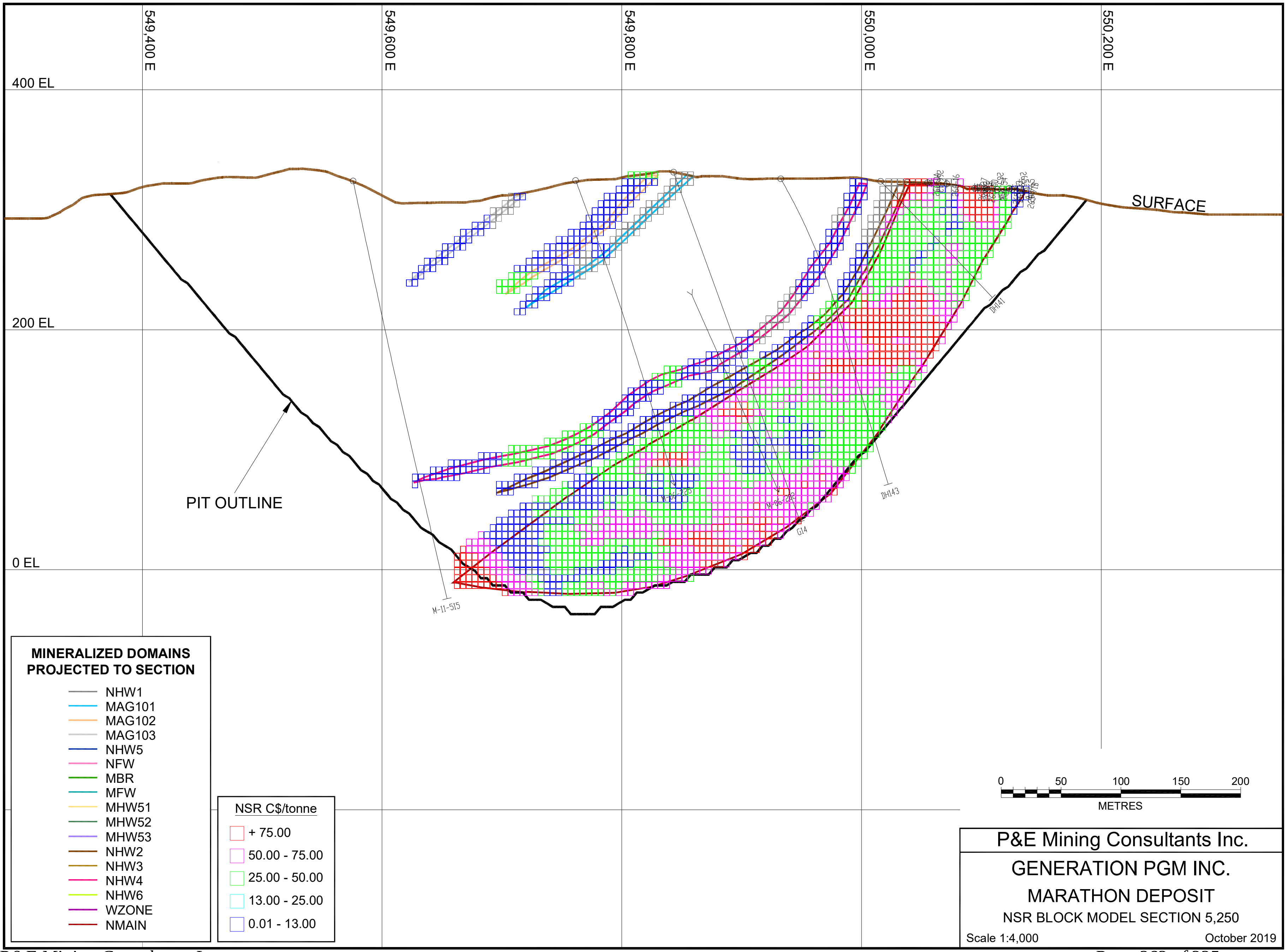
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-07-360
M-06-191
DH166
M-05-91
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL SECTION 5,000
Scale 1:4,000
October 2019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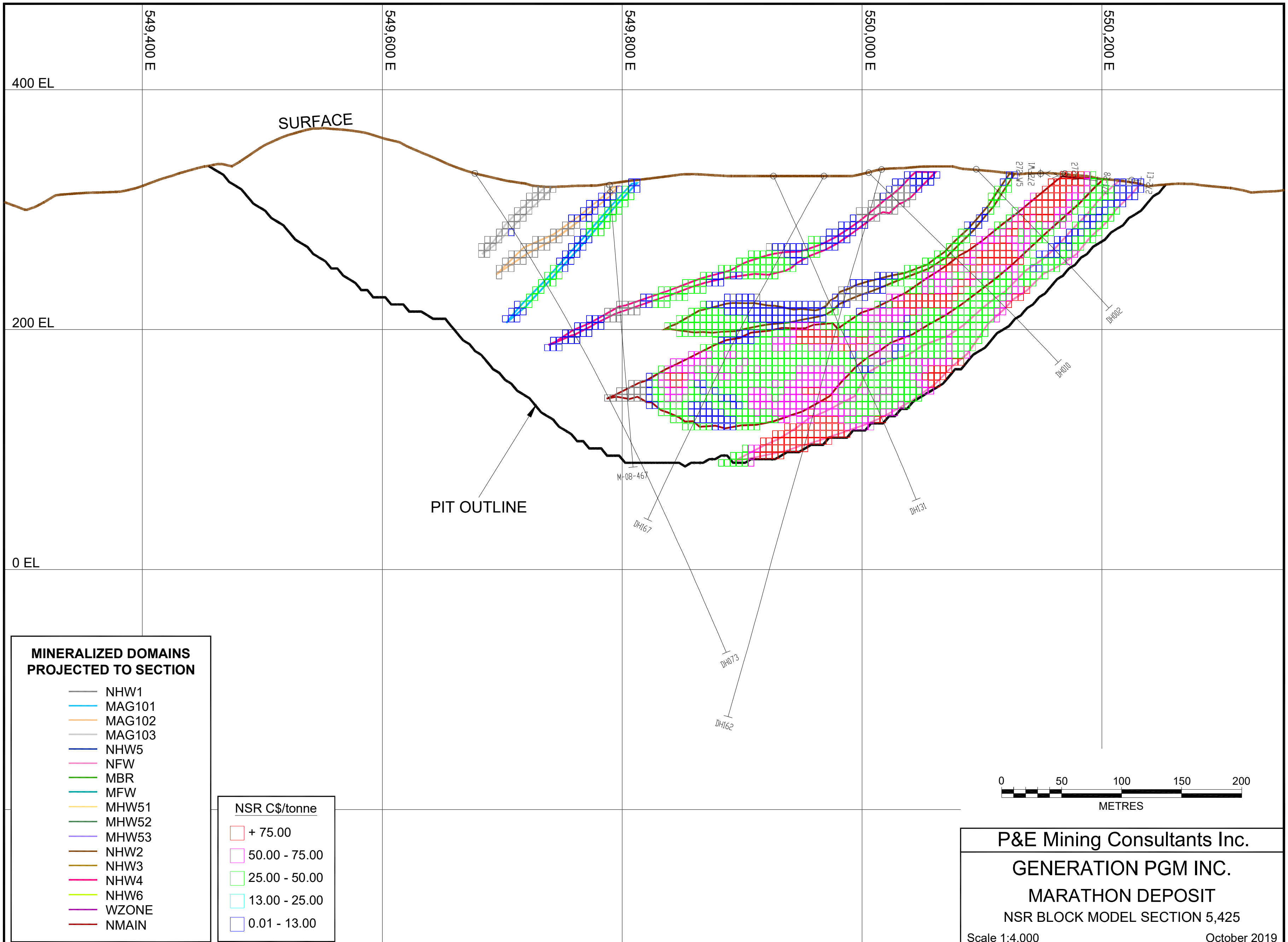
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL SECTION 5,250
Scale 1:4,000
October 2019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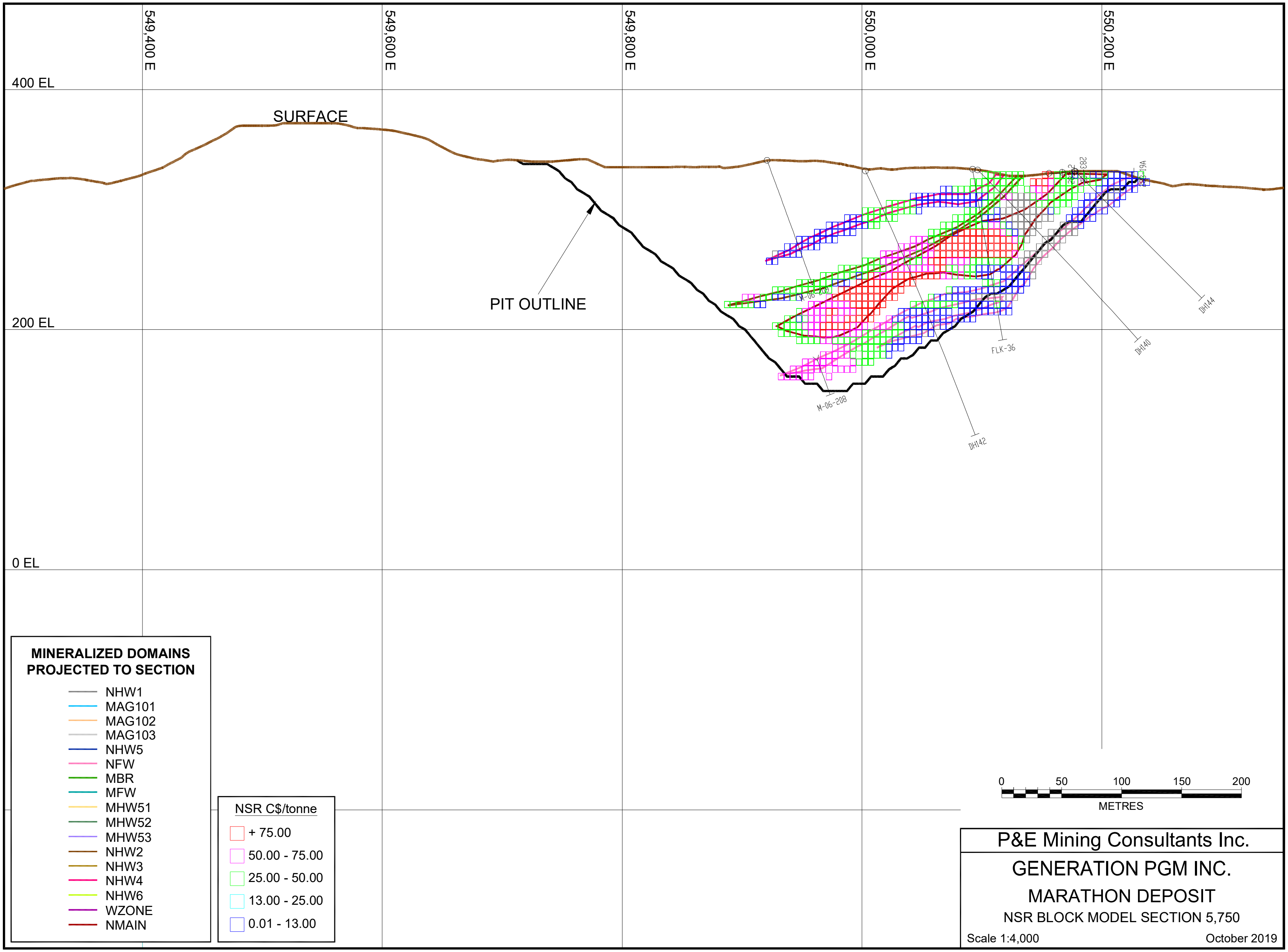
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
0 50 100 150 200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL SECTION 5,425
Scale 1:4,000
October 2019



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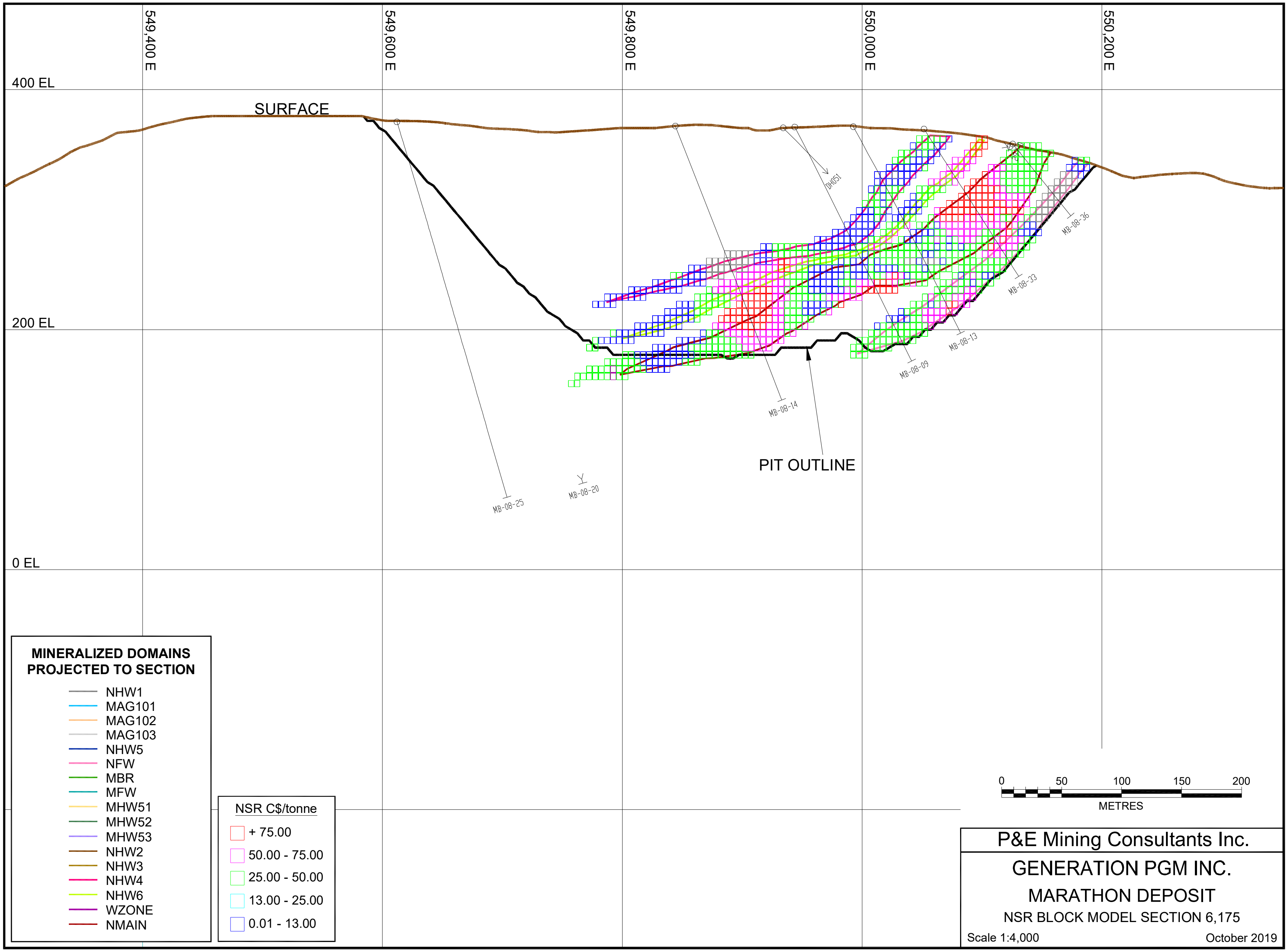
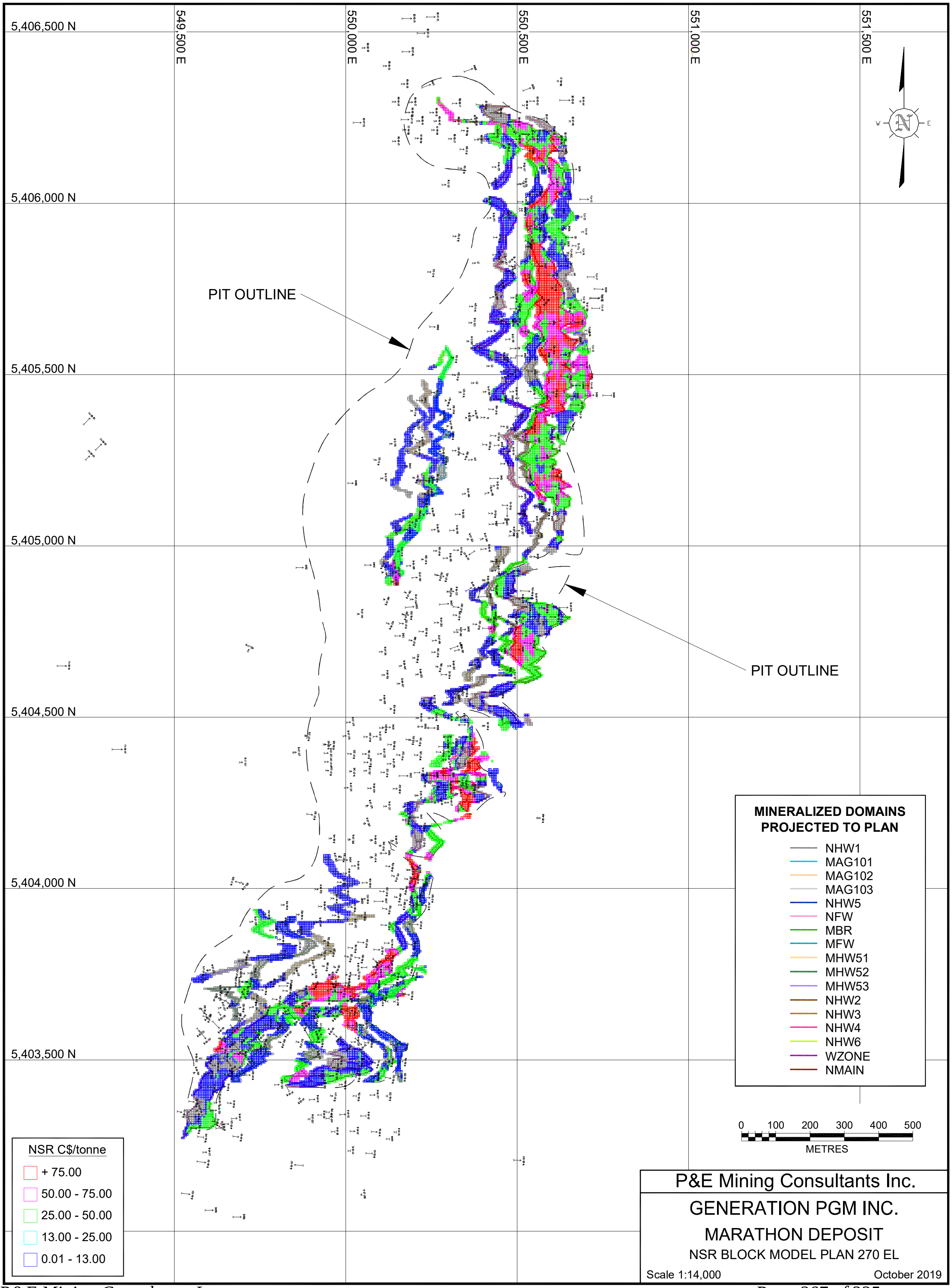
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-06-208
FLK-36
DH140
DH142
DH144
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL SECTION 5,750
Scale 1:4,000
October 2019



549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL SECTION 6,175
Scale 1:4,000
October 2019



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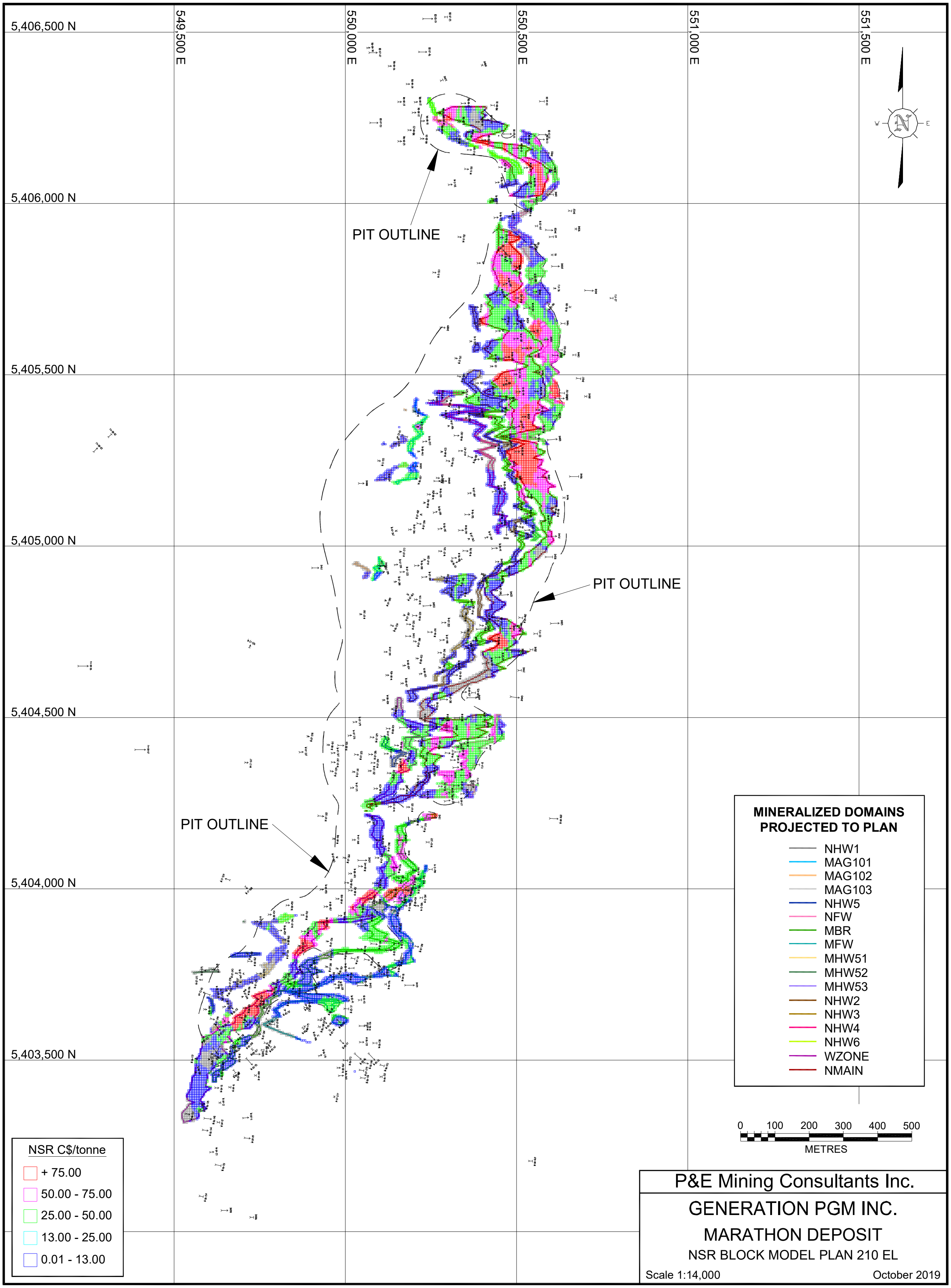
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS
PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL PLAN 270 EL
Scale 1:14,000
October 2019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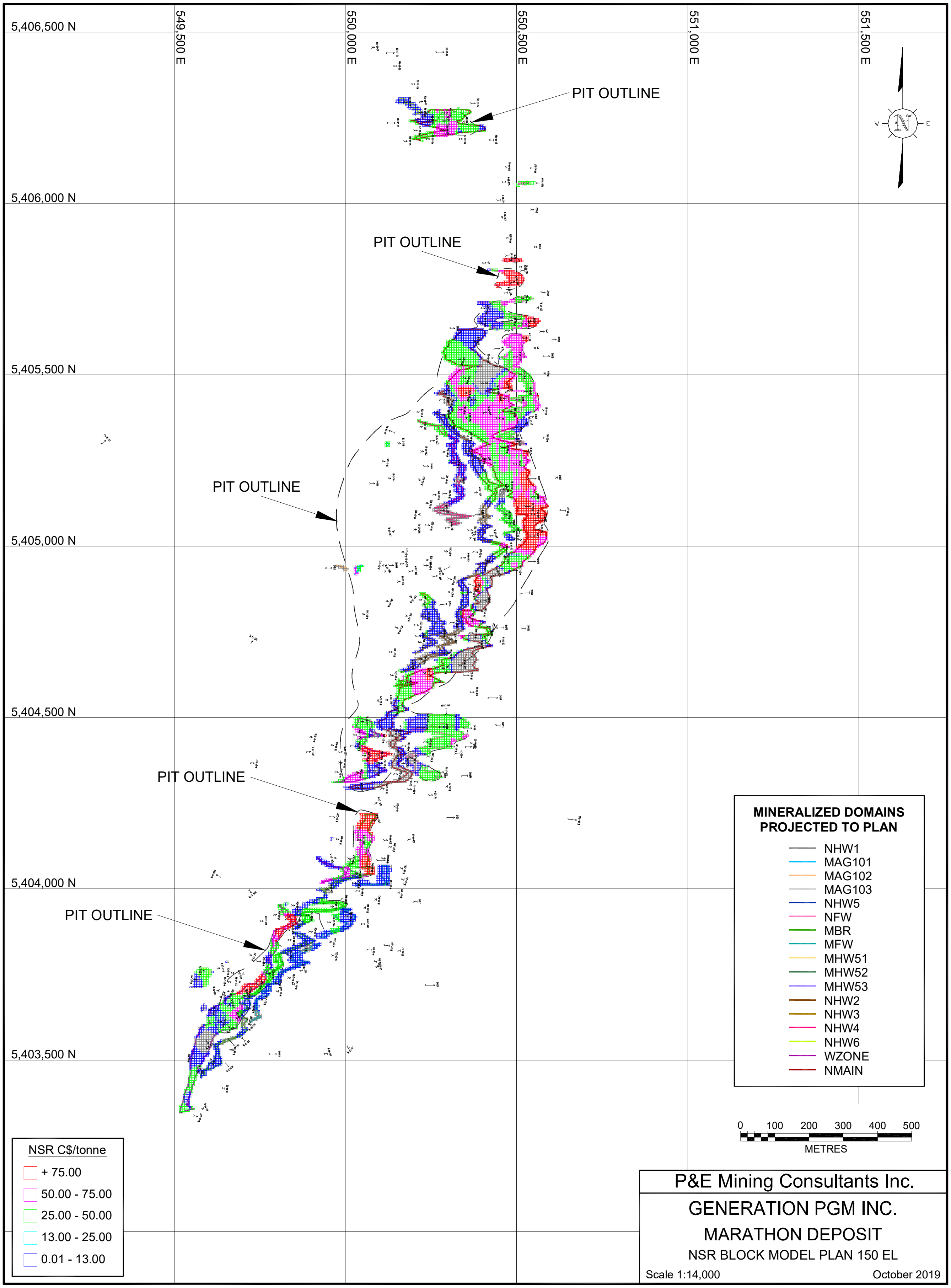
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL PLAN 210 EL
Scale 1:14,000
October 2019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5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
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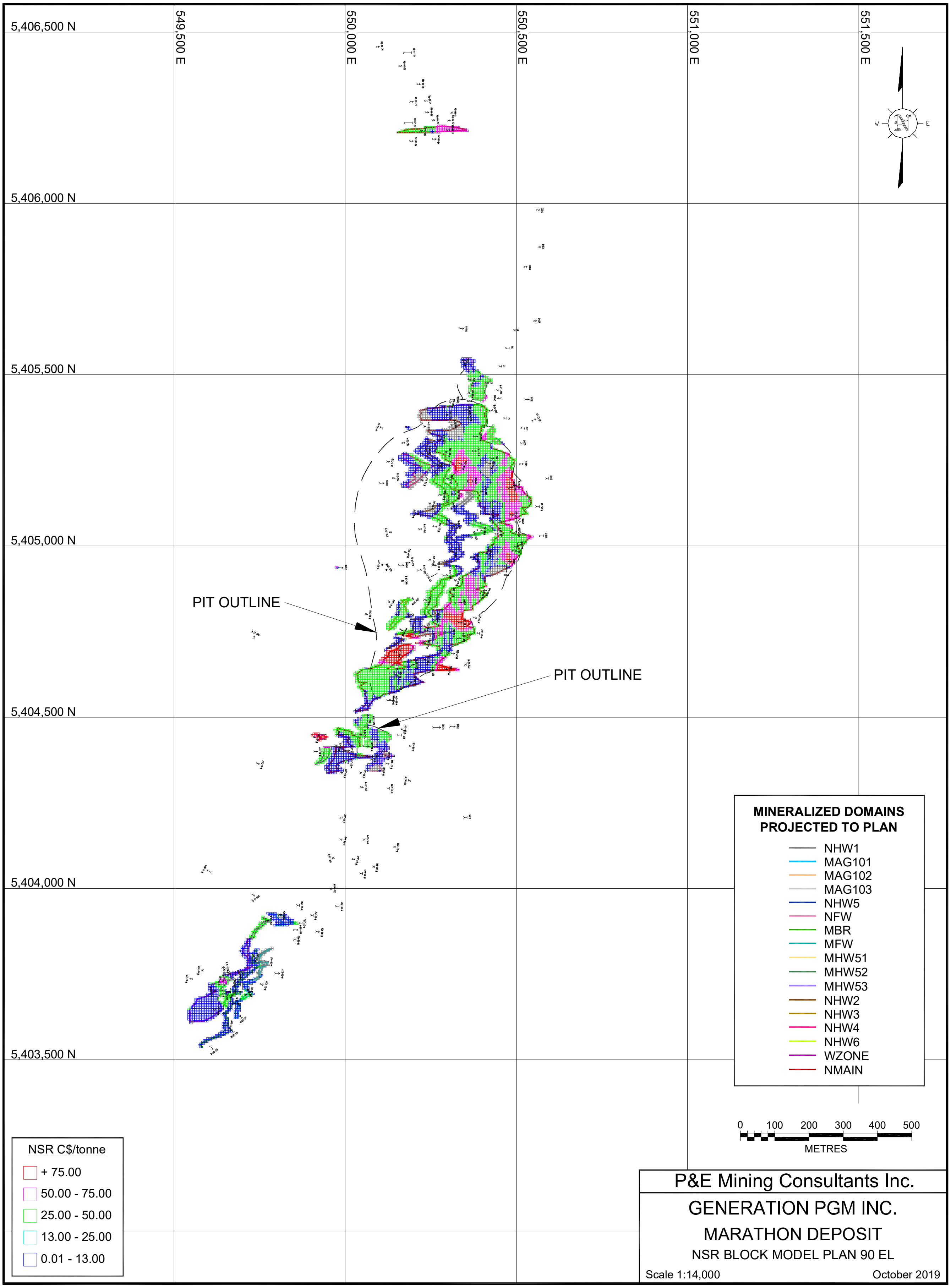
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL PLAN 150 EL
Scale 1:14,000
October 2019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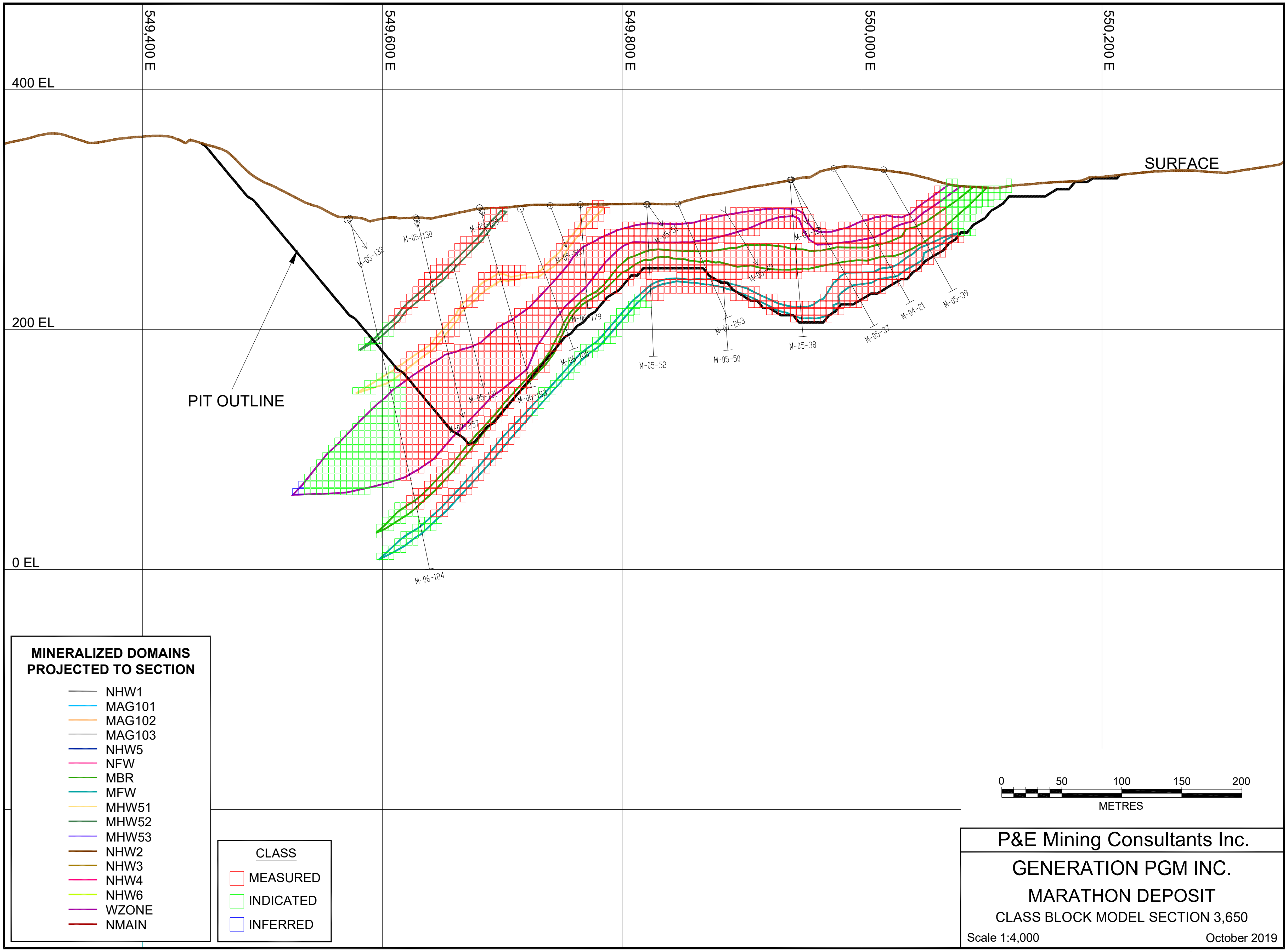
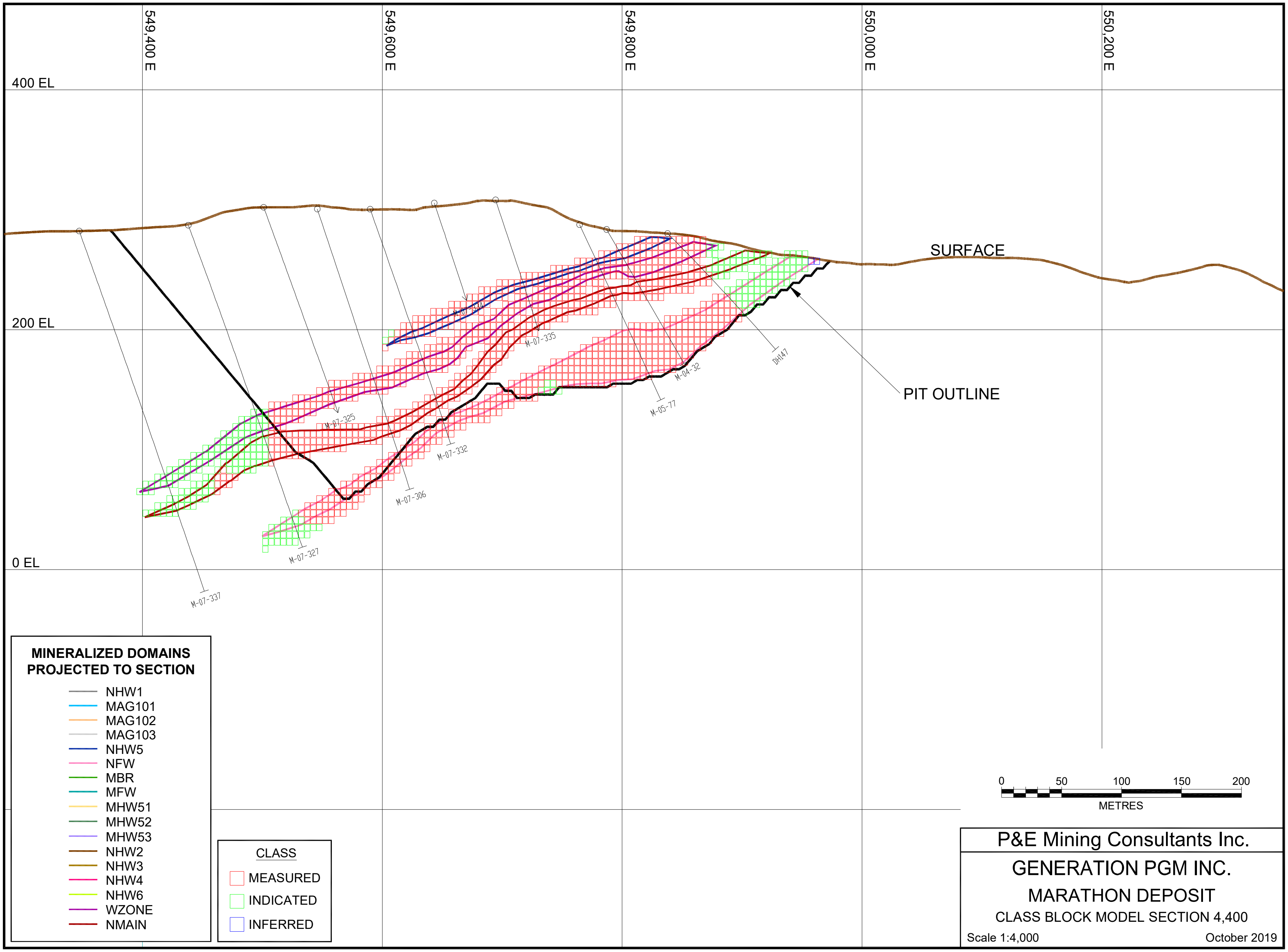
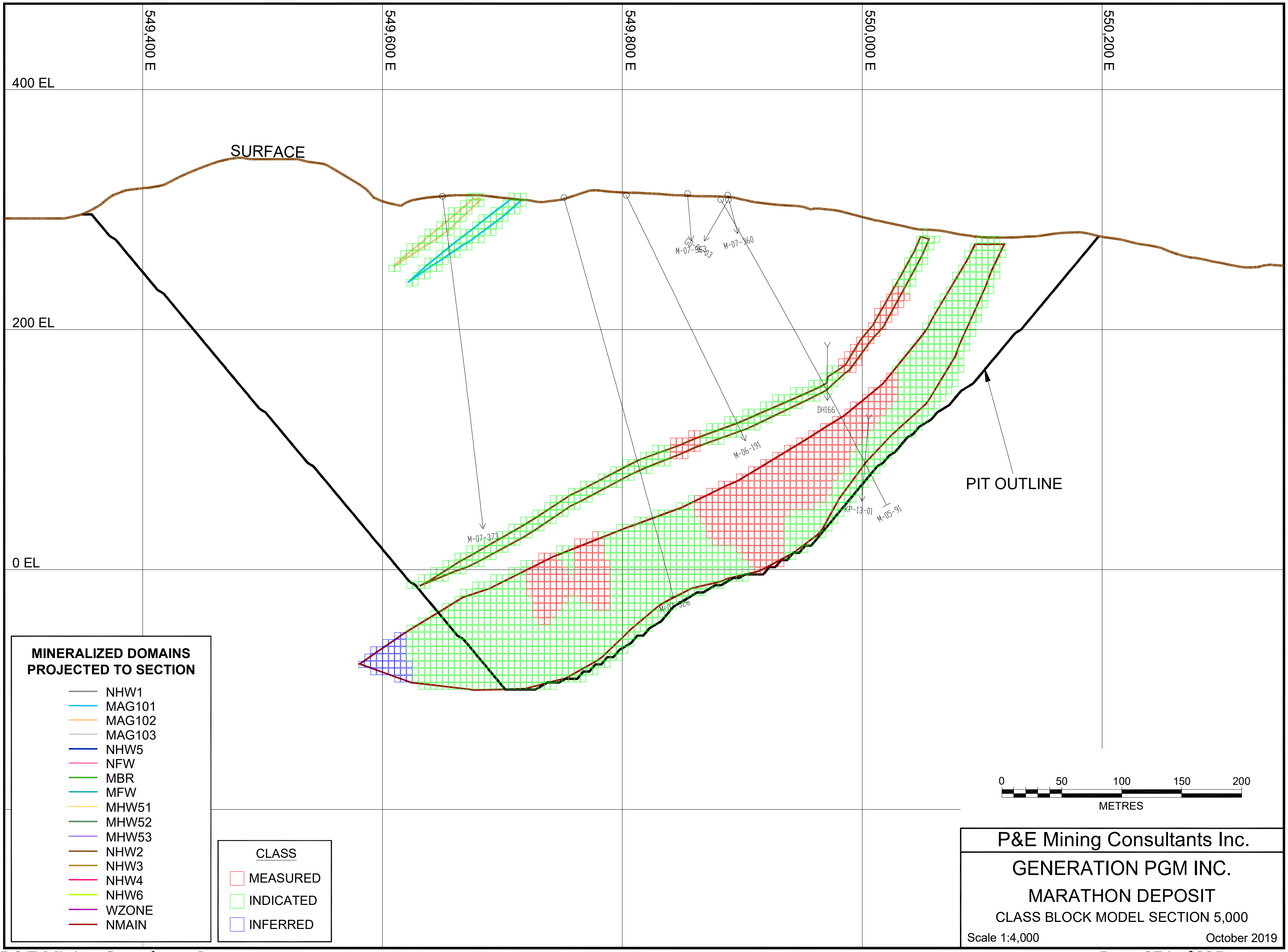
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS
PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0
100
200
300
400
500
METRES
NSR C$/tonne
+ 75.00
50.00 - 75.00
25.00 - 50.00
13.00 - 25.00
0.01 - 13.00
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
NSR BLOCK MODEL PLAN 90 EL
Scale 1:14,000
October 2019

APPENDIX F CLASSIFICATION BLOCK MODEL CROSS SECTIONS AND PLANS

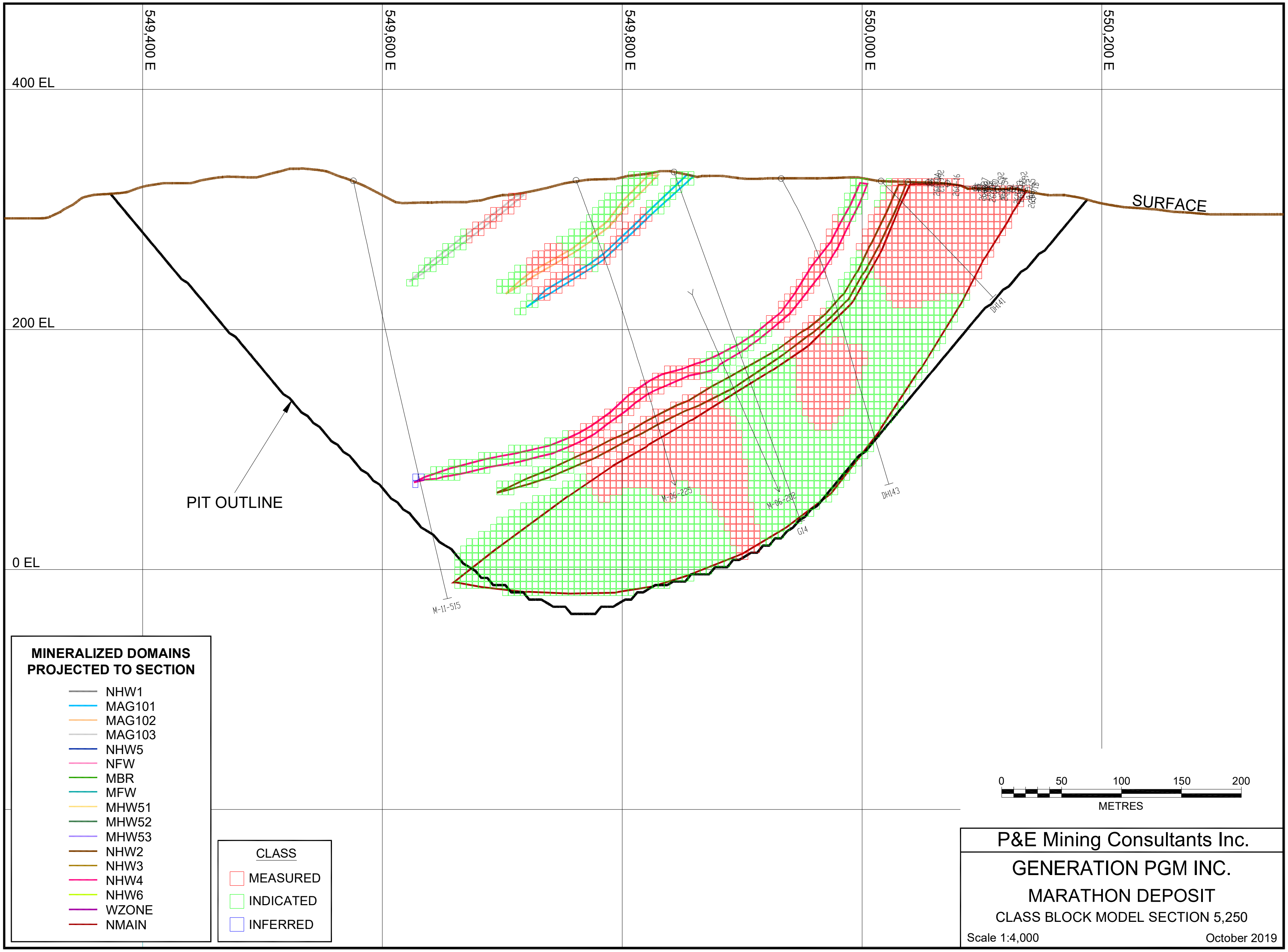


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
CLASS
MEASURED
INDICATED
INFERRED
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL SECTION 3,650
Scale 1:4,000
October 2019


549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-07-337
M-07-327
M-07-325
M-07-306
M-07-332
M-07-335
M-05-77
M-04-32
DH147
MINERALIZED DOMAINS
PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
CLASS
MEASURED
INDICATED
INFERRED
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL SECTION 4,400
Scale 1:4,000
October 2019



549,400 E
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MINERALIZED DOMAINS
PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
CLASS
MEASURED
INDICATED
INFERRED
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL SECTION 5,000
Scale 1:4,000
October 2019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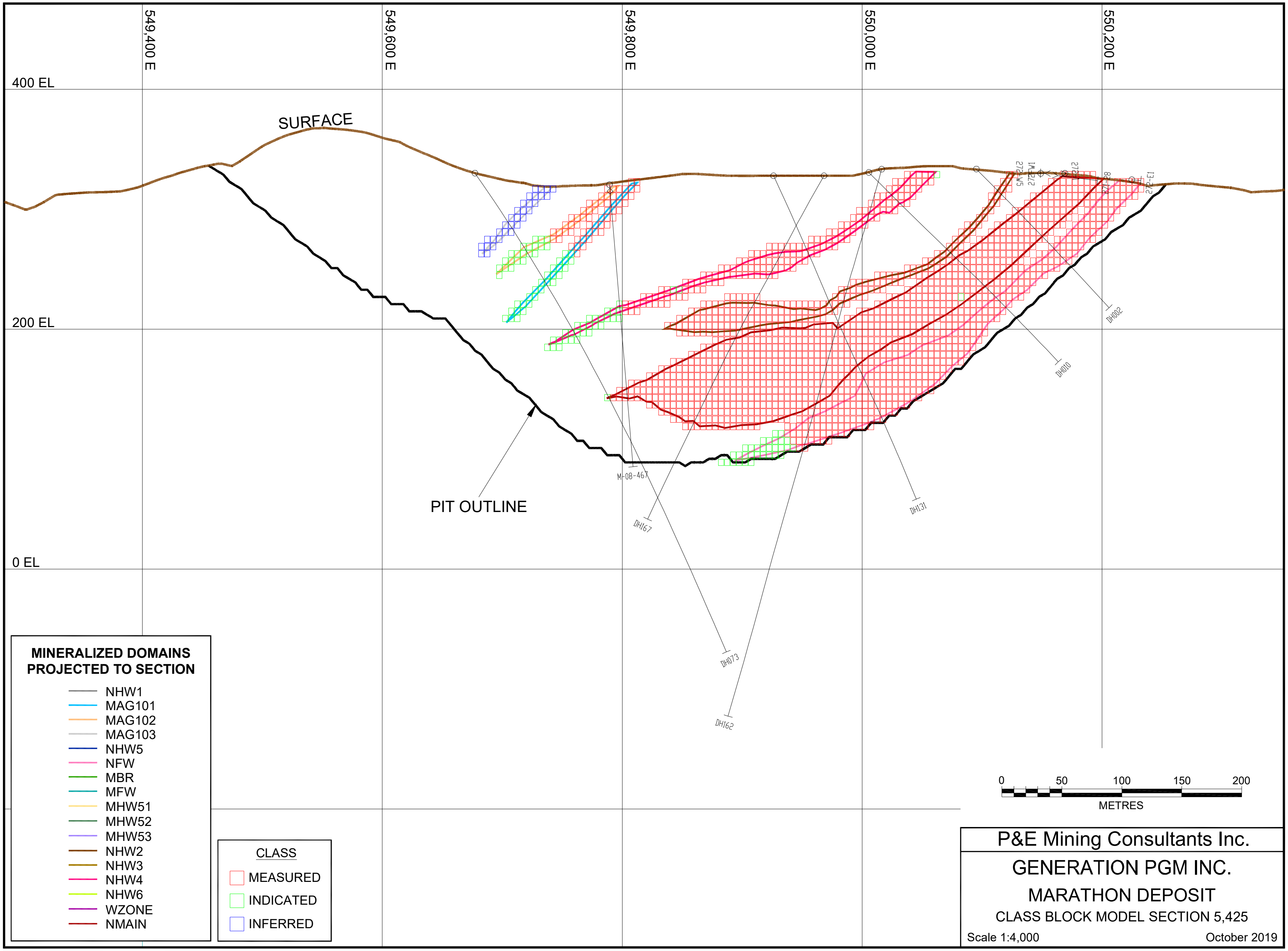
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-11-515
M-06-225
M-06-202
DH143
DH141
G14
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
CLASS
MEASURED
INDICATED
INFERRED
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL SECTION 5,250
Scale 1:4,000
October 2019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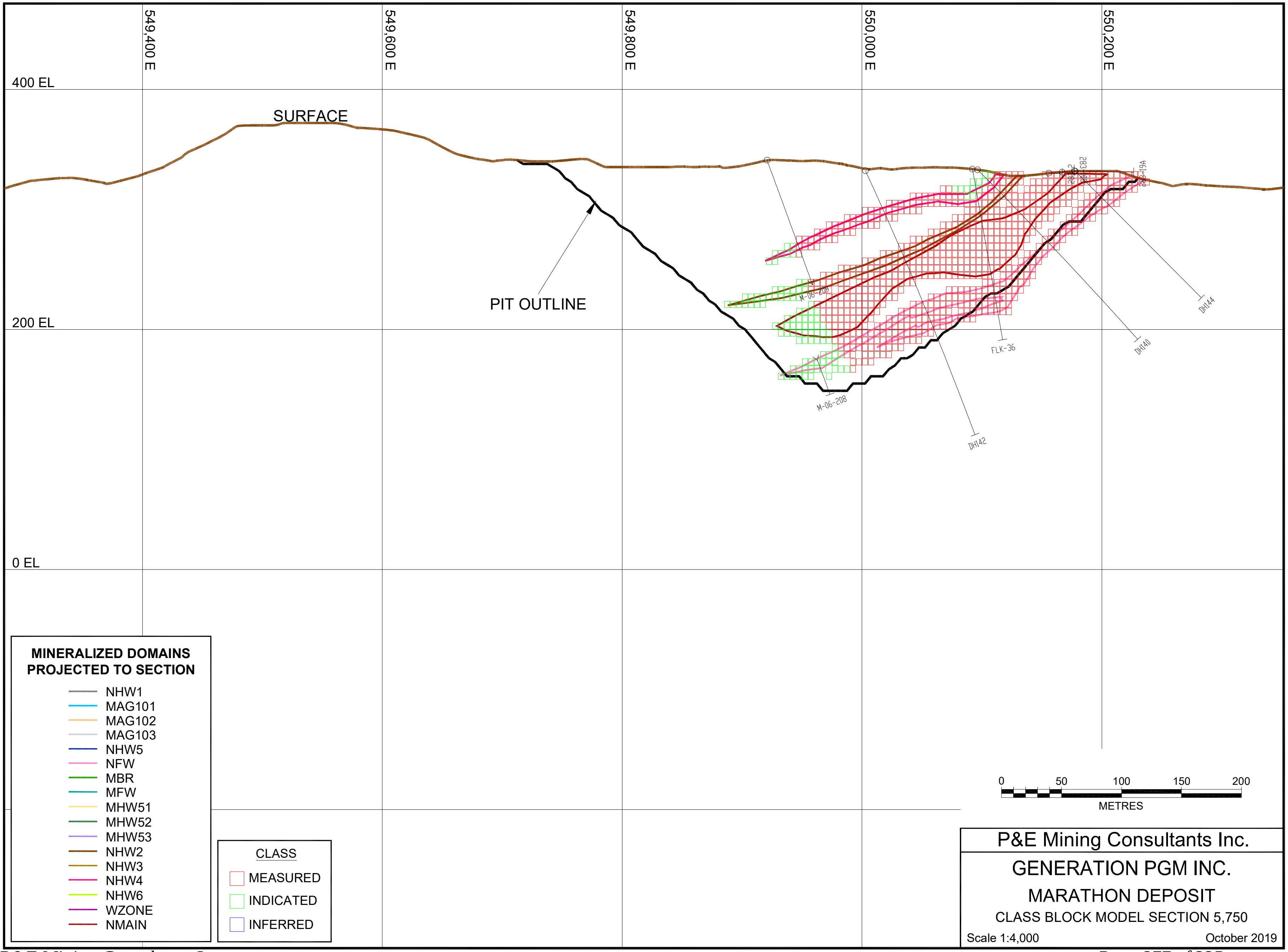
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
DH002
DH010
DH131
DH167
DH073
DH162
M-08-467
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
CLASS
MEASURED
INDICATED
INFERRED
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL SECTION 5,425
Scale 1:4,000
October 2019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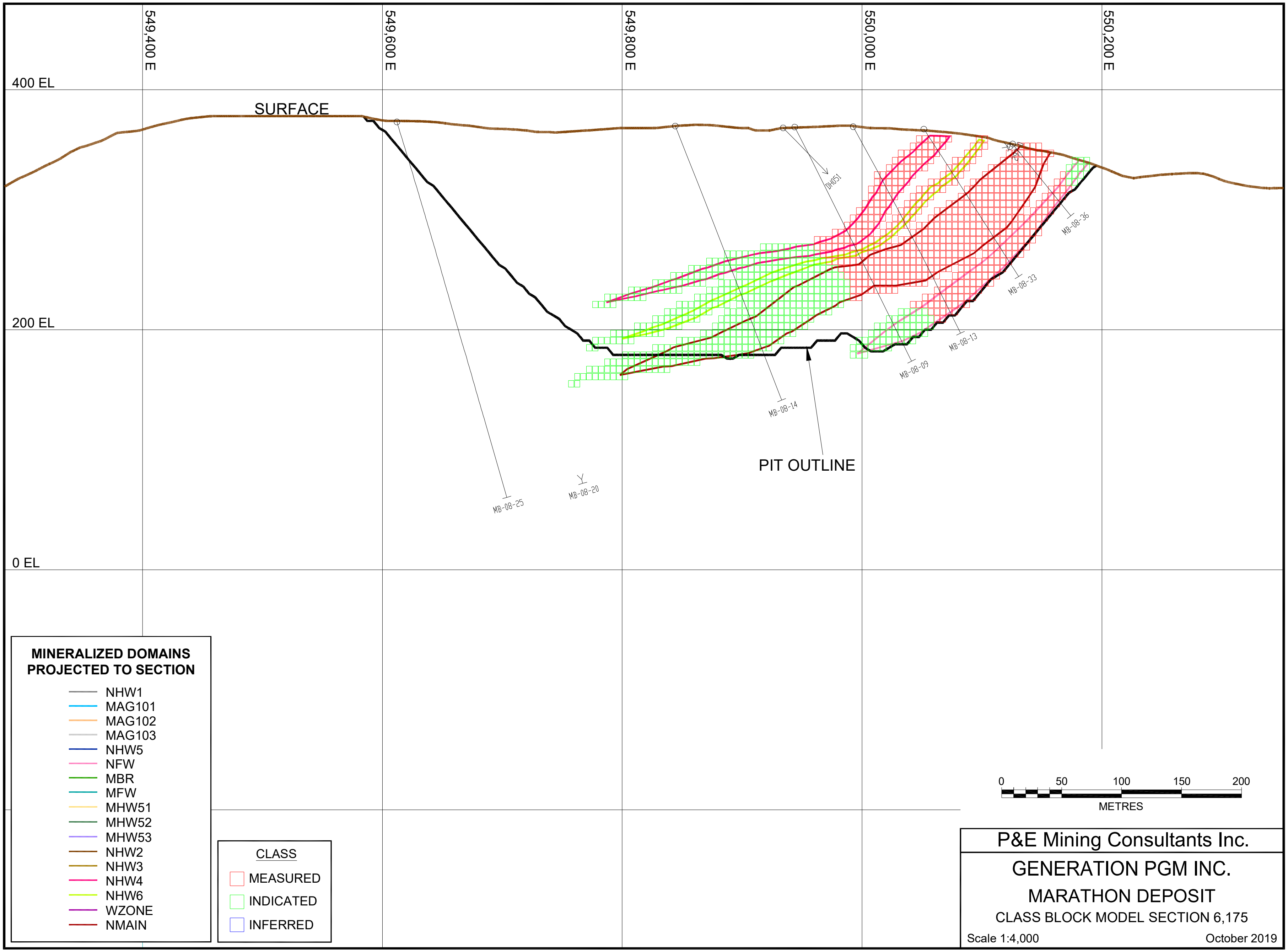
549,600 E
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
M-06-209
M-06-208
DH142
FLK-36
DH140
DH144
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
CLASS
MEASURED
INDICATED
INFERRED
0 50 100 150 200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL SECTION 5,750
Scale 1:4,000
October 2019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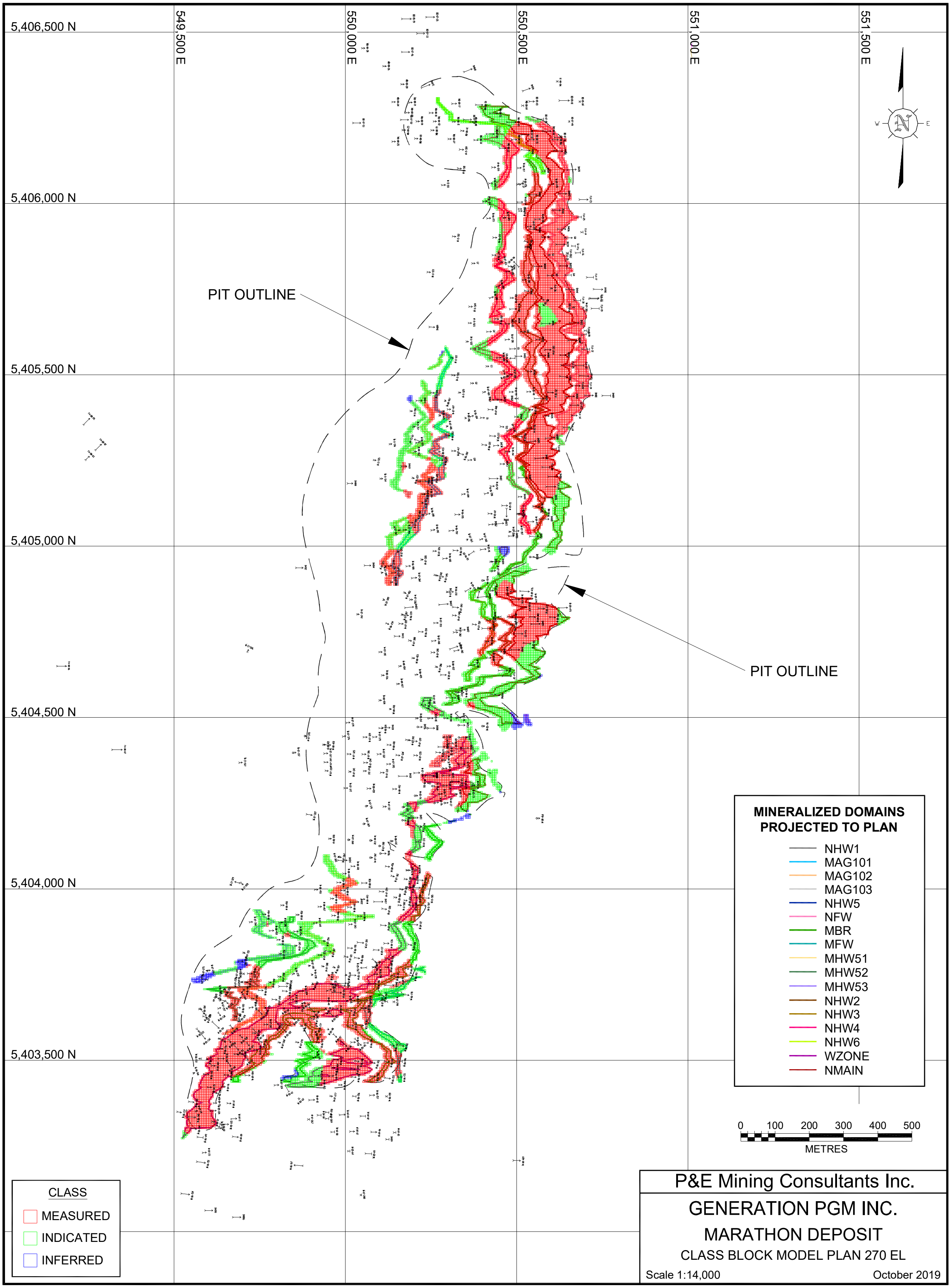
549,800 E
550,000 E
550,200 E
400 EL
200 EL
0 EL
SURFACE
PIT OUTLINE
MB-08-25
MB-08-20
MB-08-14
MB-08-09
MB-08-13
MB-08-33
MB-08-36
MINERALIZED DOMAINS PROJECTED TO SECTION
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
CLASS
MEASURED
INDICATED
INFERRED
0
50
100
150
200
METRES
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL SECTION 6,175
Scale 1:4,000
October 2019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5,405,500 N
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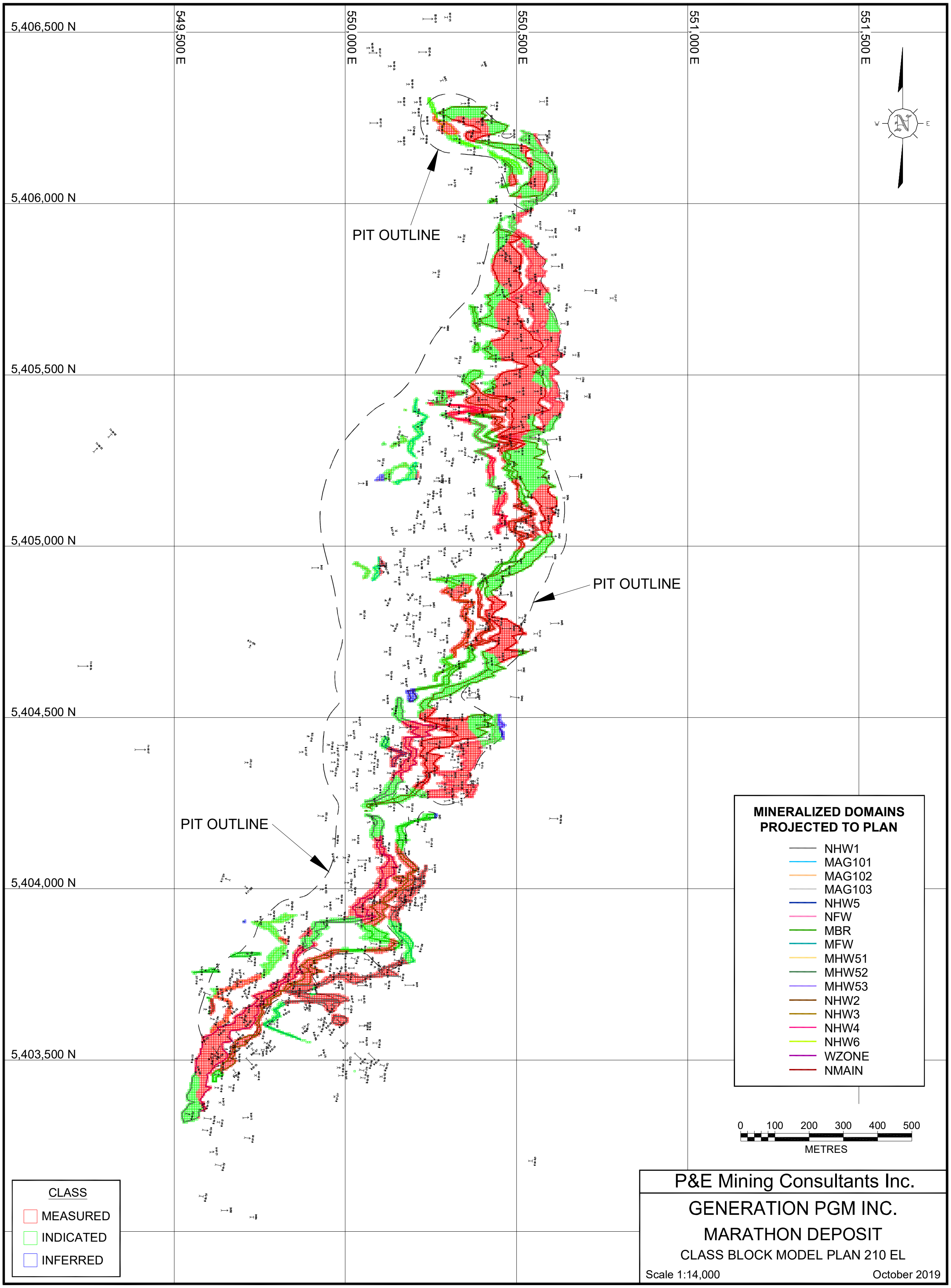
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
N
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
CLASS
MEASURED
INDICATED
INFERRED
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL PLAN 270 EL
Scale 1:14,000
October 2019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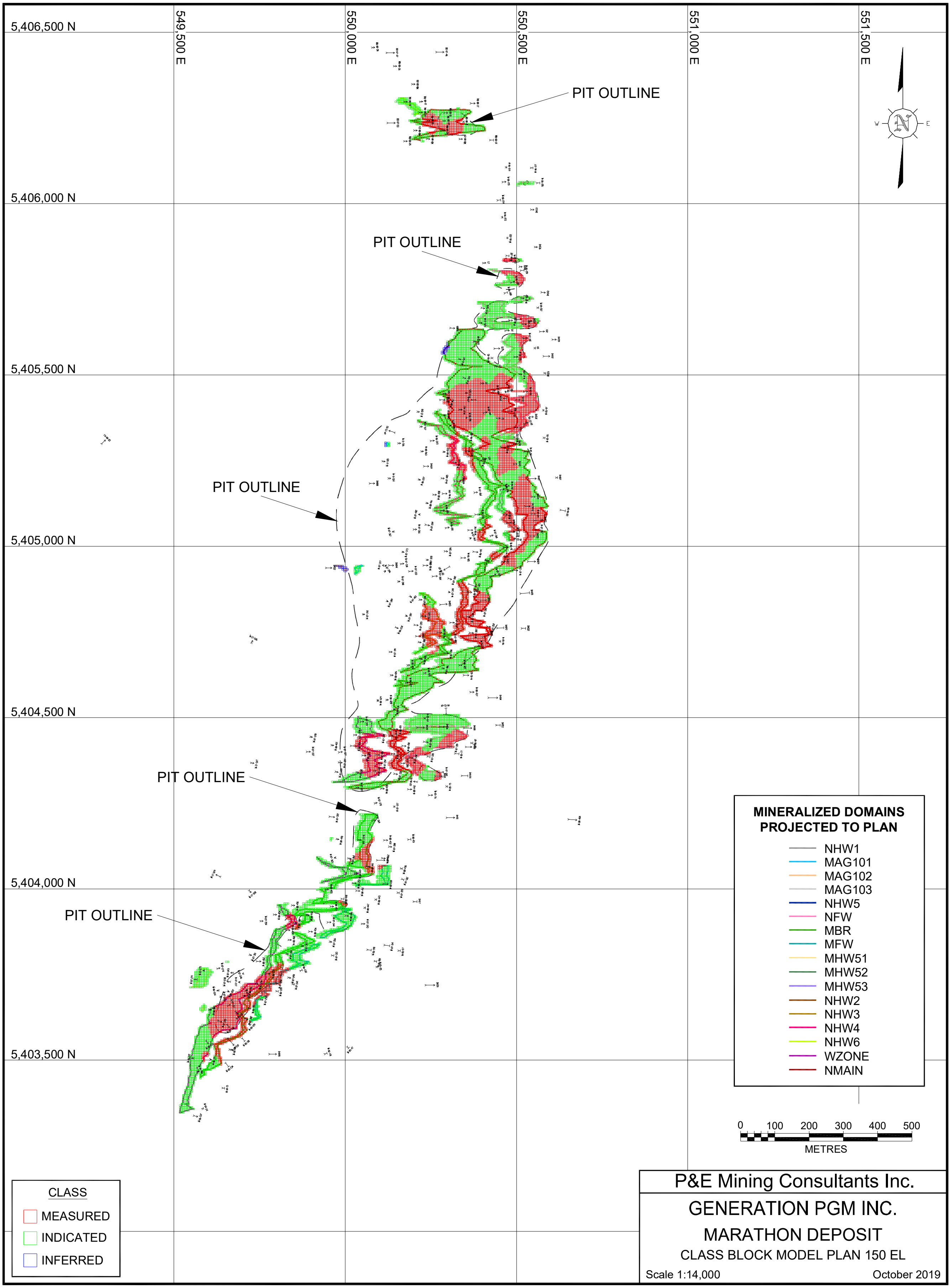
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
CLASS
MEASURED
INDICATED
INFERRED
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL PLAN 210 EL
Scale 1:14,000
October 2019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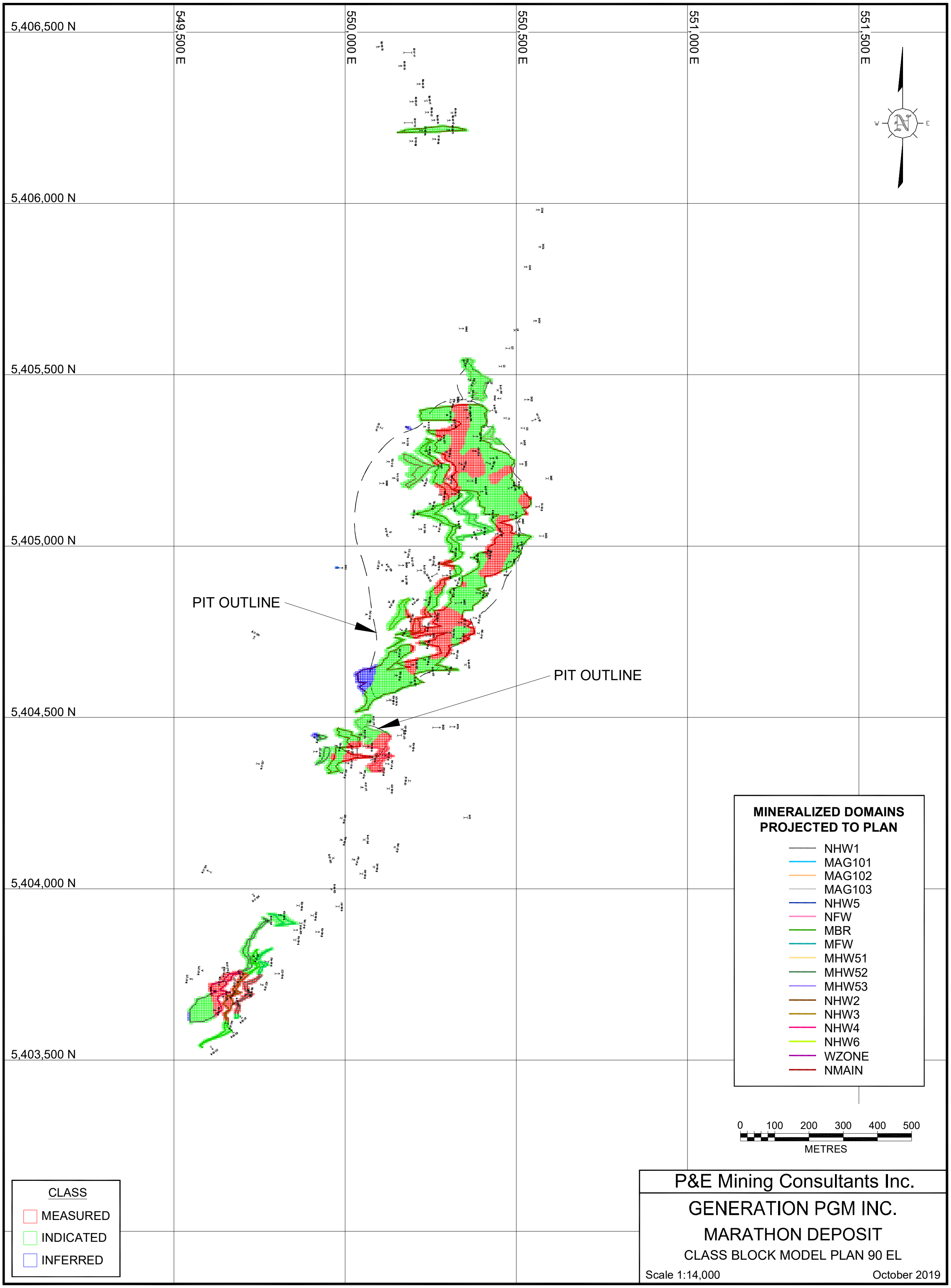
5,406,000 N
5,405,500 N
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0
100
200
300
400
500
METRES
CLASS
MEASURED
INDICATED
INFERRED
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL PLAN 150 EL
Scale 1:14,000
October 2019


5,406,500 N
5,406,000 N
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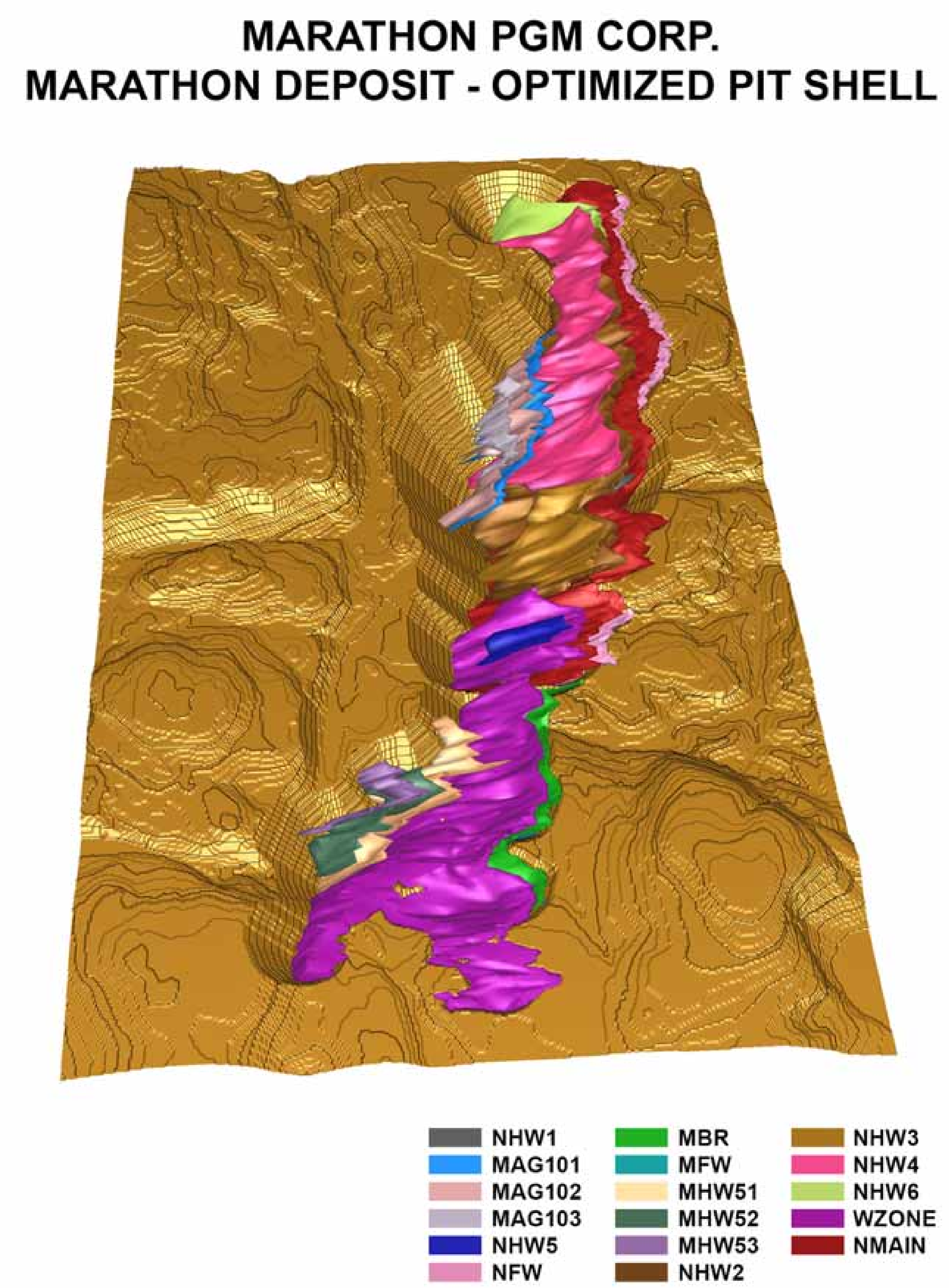
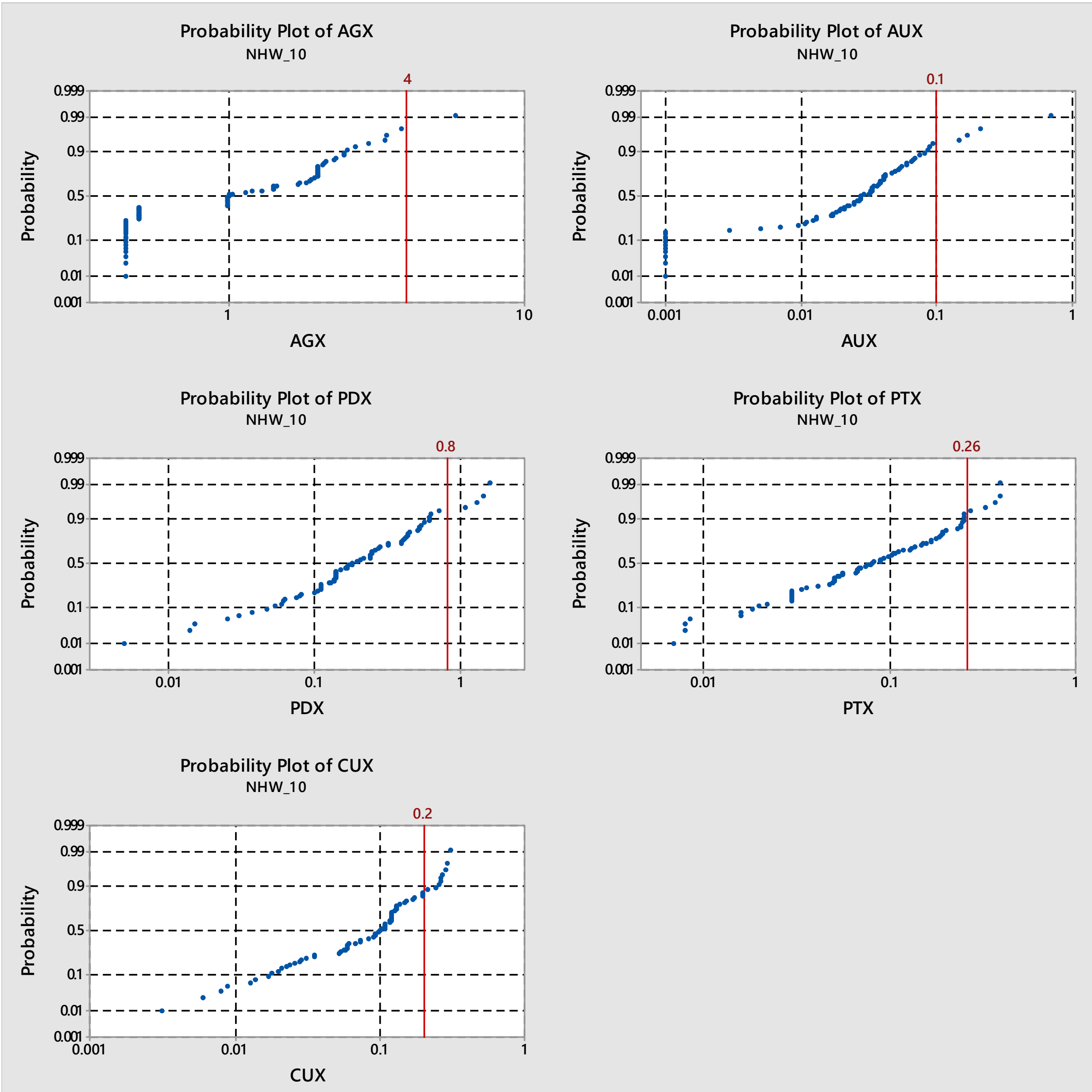
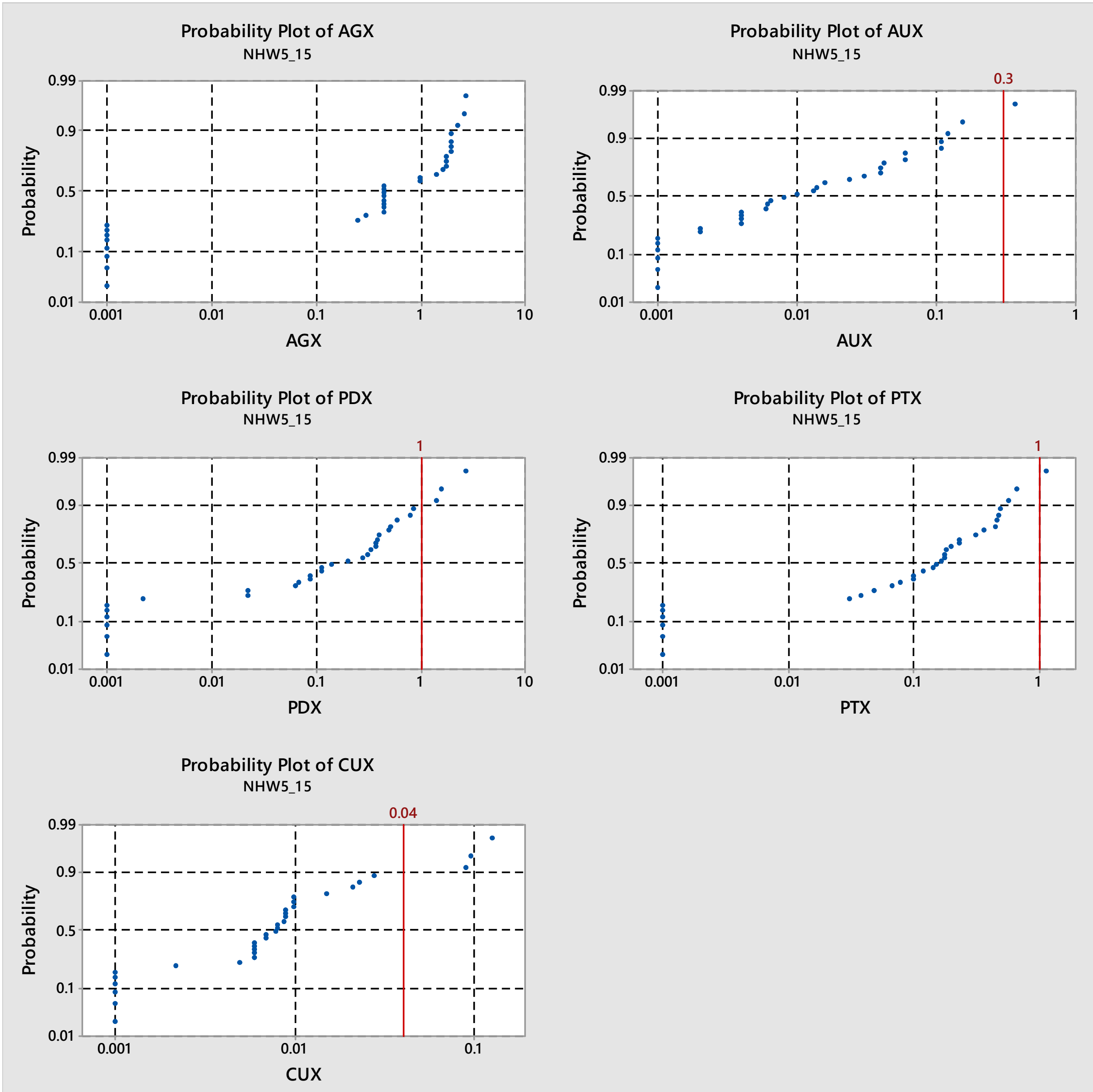
5,405,000 N
5,404,500 N
5,404,000 N
5,403,500 N
549,500 E
550,000 E
550,500 E
551,000 E
551,500 E
PIT OUTLINE
PIT OUTLINE
MINERALIZED DOMAINS PROJECTED TO PLAN
NHW1
MAG101
MAG102
MAG103
NHW5
NFW
MBR
MFW
MHW51
MHW52
MHW53
NHW2
NHW3
NHW4
NHW6
WZONE
NMAIN
0 100 200 300 400 500
METRES
CLASS
MEASURED
INDICATED
INFERRED
P&E Mining Consultants Inc.
GENERATION PGM INC.
MARATHON DEPOSIT
CLASS BLOCK MODEL PLAN 90 EL
Scale 1:14,000
October 2019

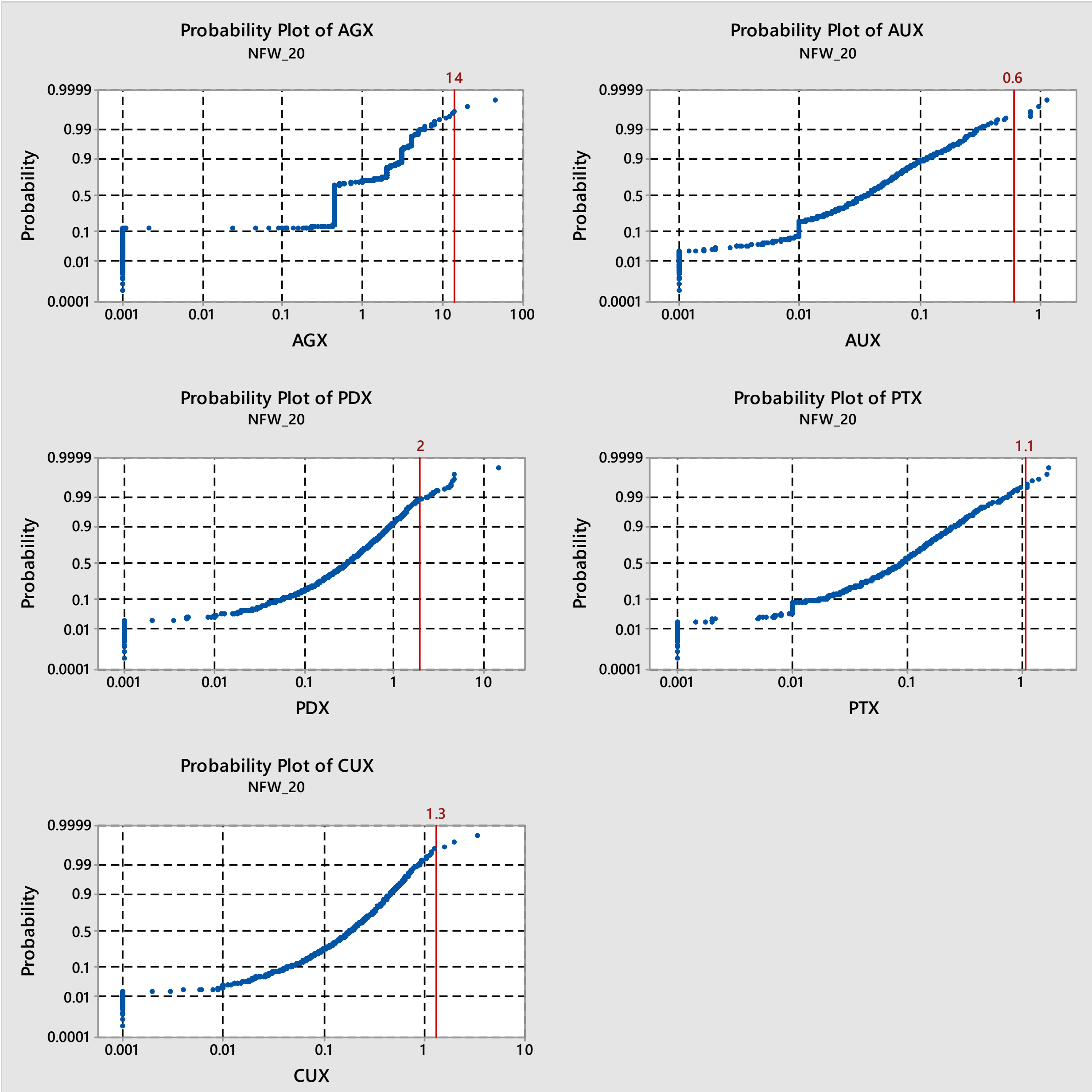
APPENDIX G OPTIMIZED PIT SHELL

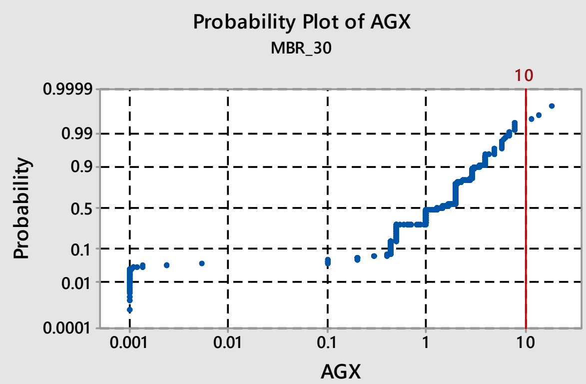


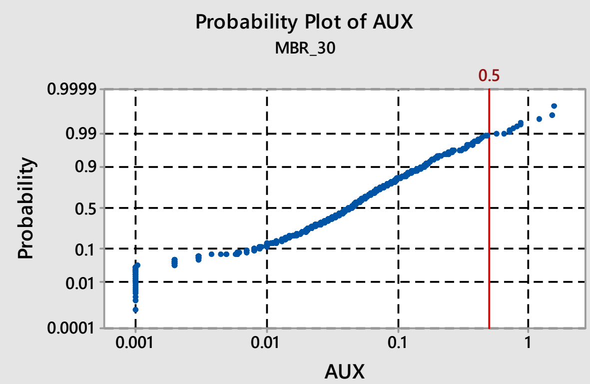
APPENDIX H LOG-NORMAL PROBABILITY PLOTS




Probability Plot of AGX
NHW5_15
Probability
AGX
Probability Plot of AUX
NHW5_15
0.3
Probability
AUX
Probability Plot of PDX
NHW5_15
1
Probability
PDX
Probability Plot of PTX
NHW5_15
1
Probability
PTX
Probability Plot of CUX
NHW5_15
0.04
Probability
CUX


Probability Plot of AGX
NFW_20
14
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
100
AGX
Probability Plot of AUX
NFW_20
0.6
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
AUX
Probability Plot of PDX
NFW_20
2
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
PDX
Probability Plot of PTX
NFW_20
1.1
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
PTX
Probability Plot of CUX
NFW_20
1.3
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
CUX


Probability Plot of AGX
MBR_30
10
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
AGX


Probability Plot of AUX
MBR_30
0.5
Probability
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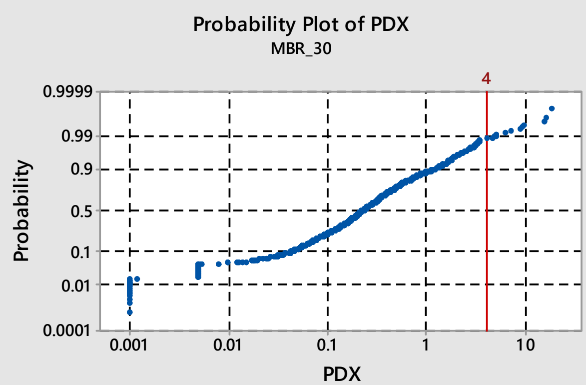
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
AUX


Probability Plot of PDX
MBR_30
4
Probability
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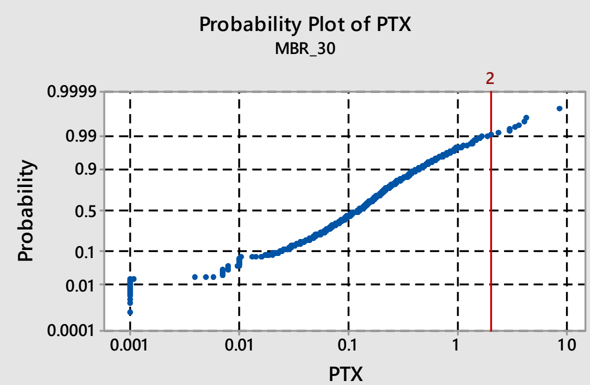
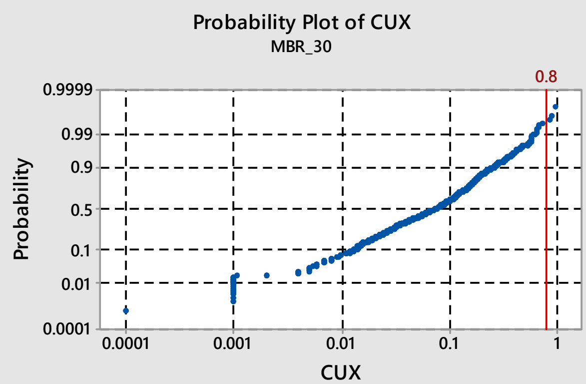
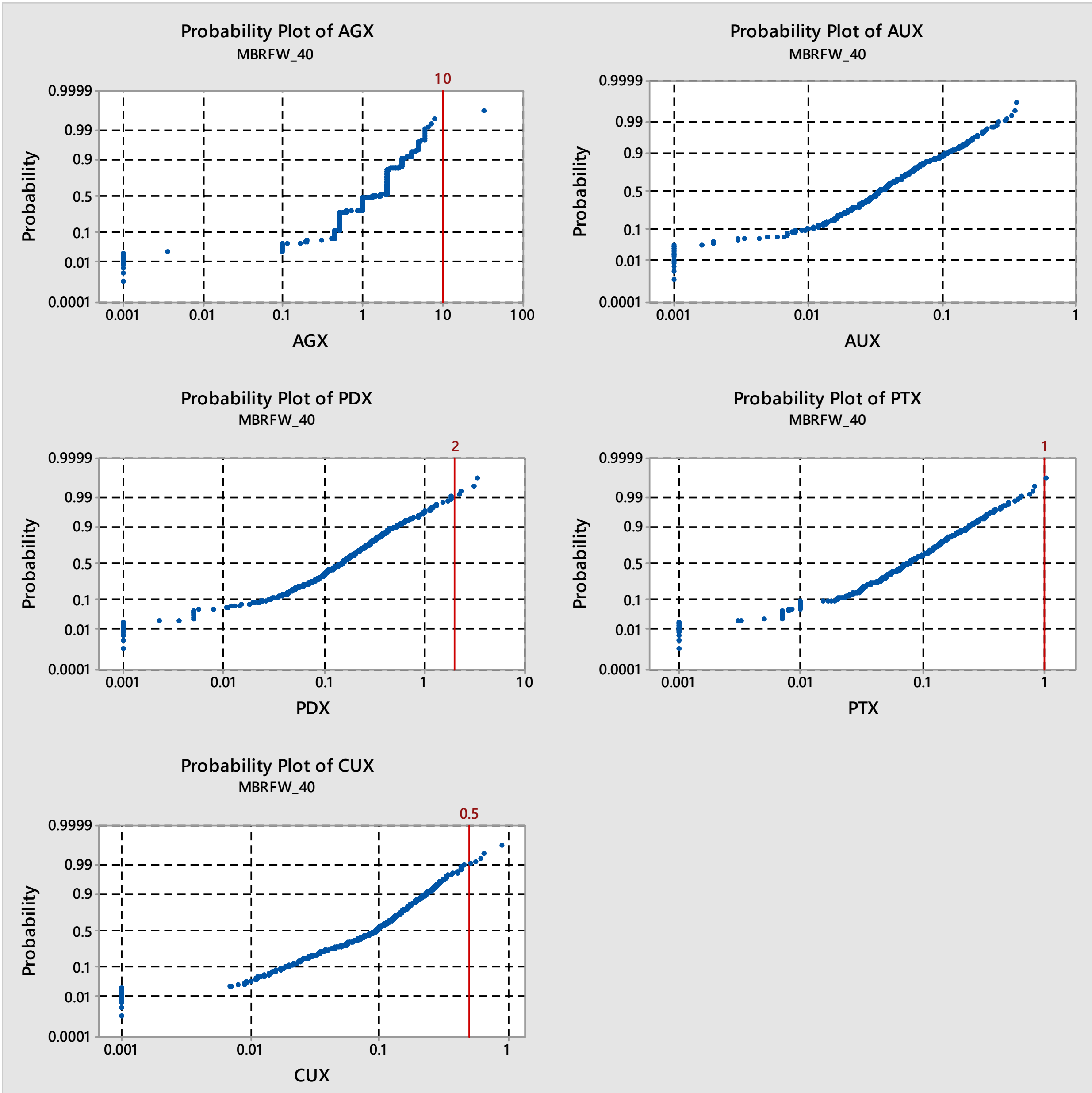
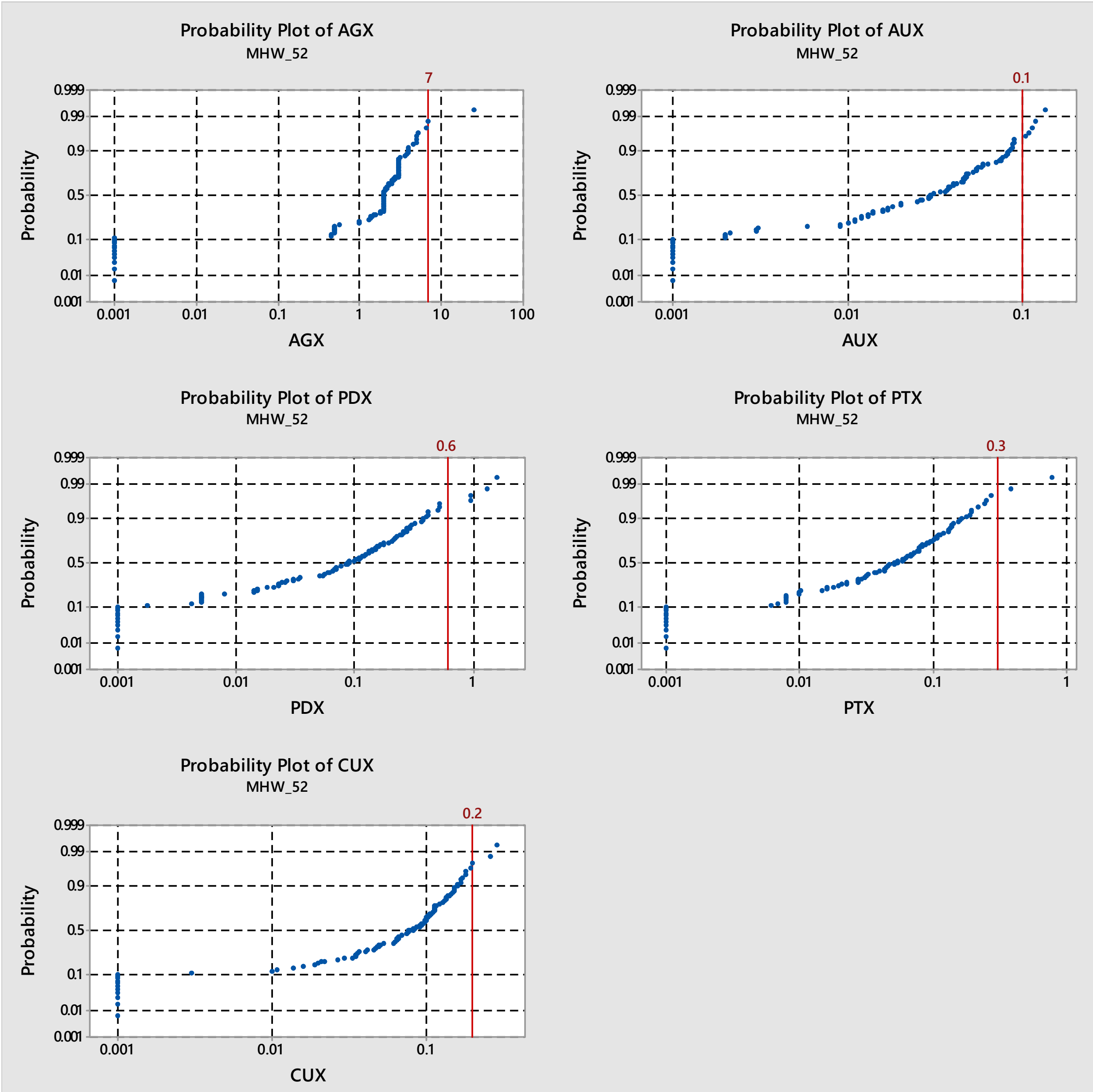
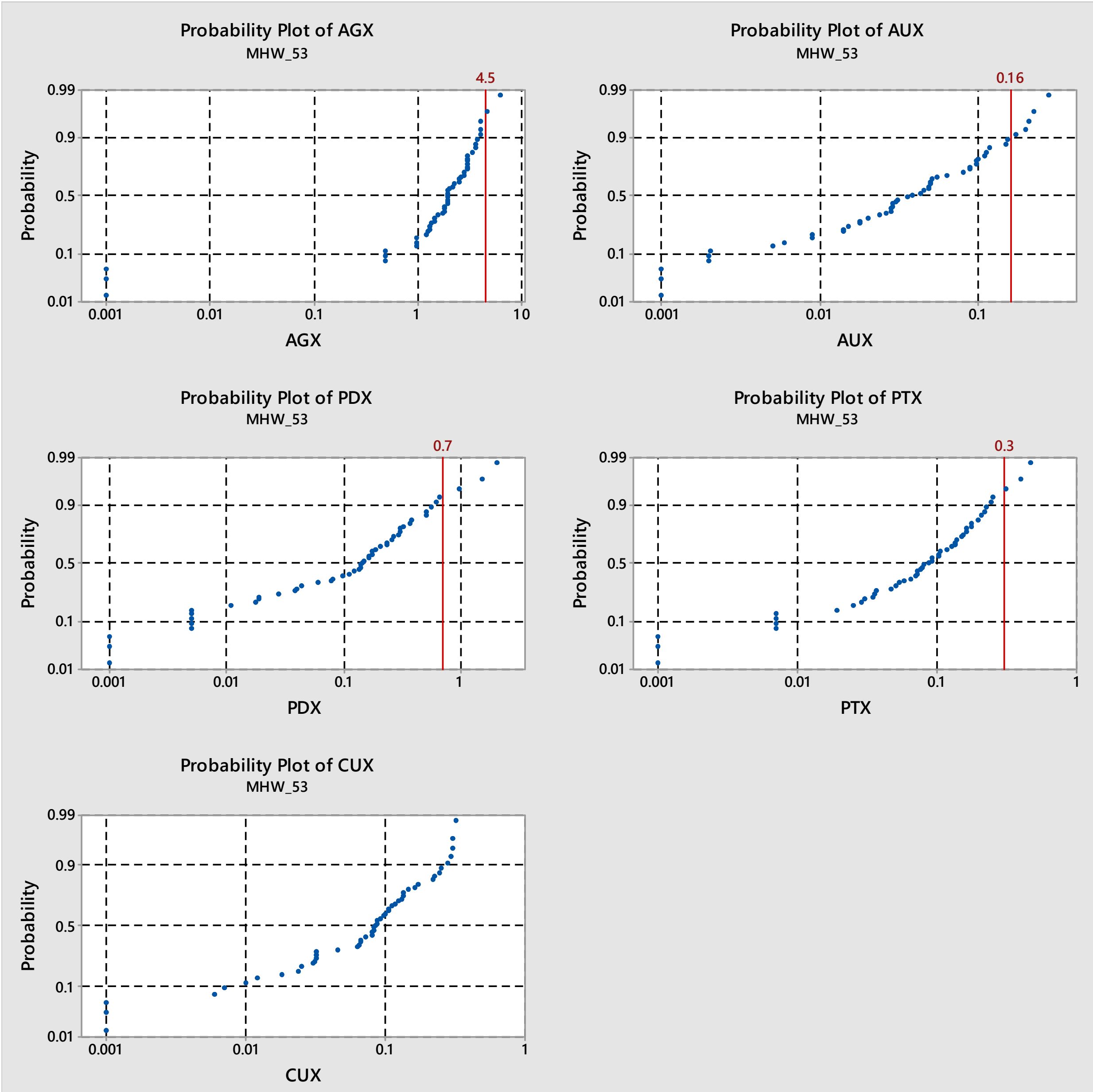
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
PDX

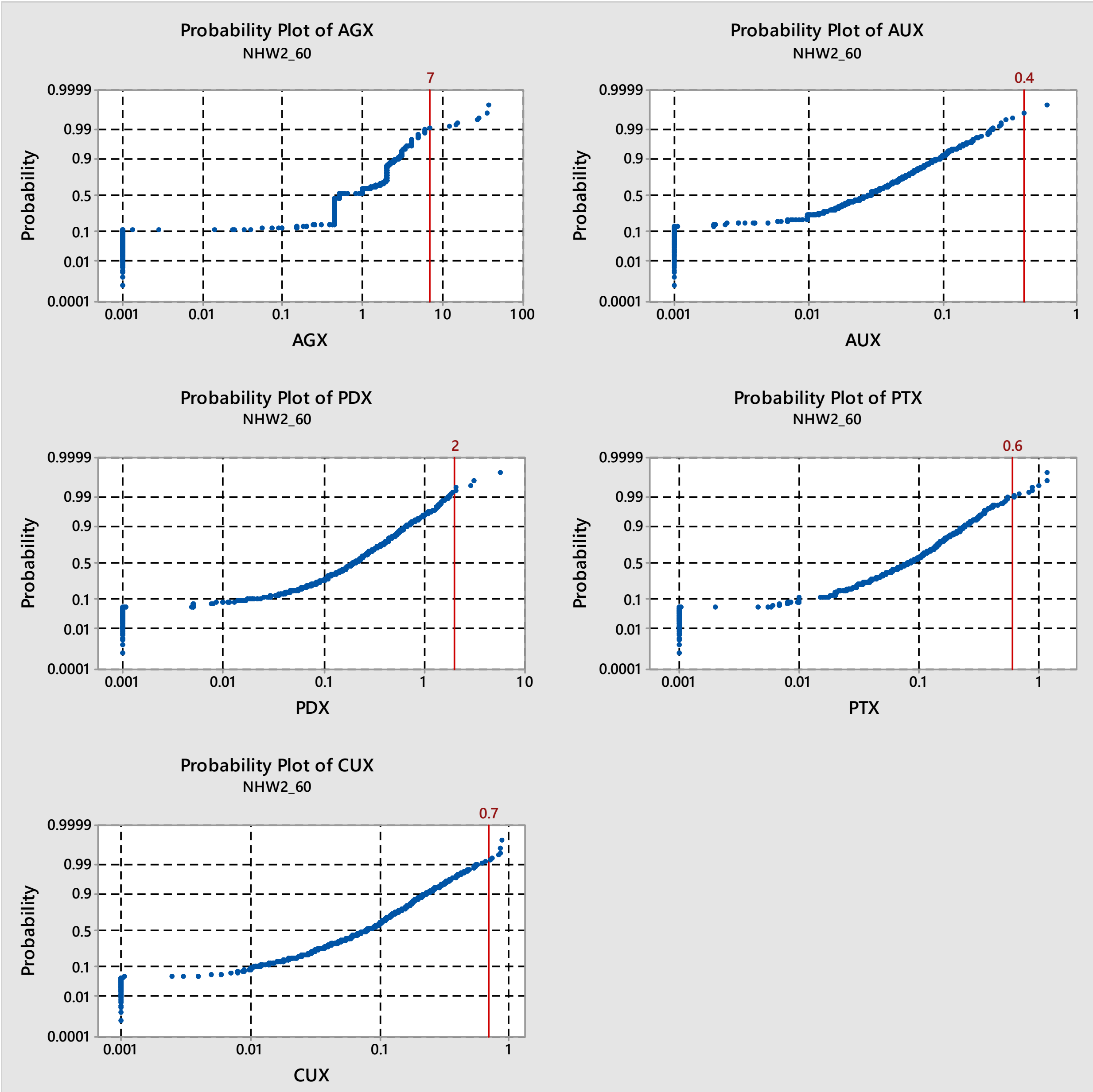

Probability Plot of PTX
MBR_30
2
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
PTX


Probability Plot of CUX
MBR_30
0.8
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.0001
0.001
0.01
0.1
1
CUX


Probability Plot of AGX
MBRFW_40
10
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
100
AGX
Probability Plot of AUX
MBRFW_40
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
AUX
Probability Plot of PDX
MBRFW_40
2
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
PDX
Probability Plot of PTX
MBRFW_40
1
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
PTX
Probability Plot of CUX
MBRFW_40
0.5
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
CUX


Probability Plot of AGX
MHW_52
7
Probability
0.999
0.99
0.9
0.5
0.1
0.01
0.001
0.001
0.01
0.1
1
10
100
AGX
Probability Plot of AUX
MHW_52
0.1
Probability
0.999
0.99
0.9
0.5
0.1
0.01
0.001
0.001
0.01
0.1
AUX
Probability Plot of PDX
MHW_52
0.6
Probability
0.999
0.99
0.9
0.5
0.1
0.01
0.001
0.001
0.01
0.1
1
PDX
Probability Plot of PTX
MHW_52
0.3
Probability
0.999
0.99
0.9
0.5
0.1
0.01
0.001
0.001
0.01
0.1
1
PTX
Probability Plot of CUX
MHW_52
0.2
Probability
0.999
0.99
0.9
0.5
0.1
0.01
0.001
0.001
0.01
0.1
CUX


Probability Plot of AGX
MHW_53
4.5
Probability
0.99
0.9
0.5
0.1
0.01
0.001
0.01
0.1
1
10
AGX
Probability Plot of AUX
MHW_53
0.16
Probability
0.99
0.9
0.5
0.1
0.01
0.001
0.01
0.1
AUX
Probability Plot of PDX
MHW_53
0.7
Probability
0.99
0.9
0.5
0.1
0.01
0.001
0.01
0.1
1
PDX
Probability Plot of PTX
MHW_53
0.3
Probability
0.99
0.9
0.5
0.1
0.01
0.001
0.01
0.1
1
PTX
Probability Plot of CUX
MHW_53
Probability
0.99
0.9
0.5
0.1
0.01
0.001
0.01
0.1
1
CUX


Probability Plot of AGX
NHW2_60
7
Probability
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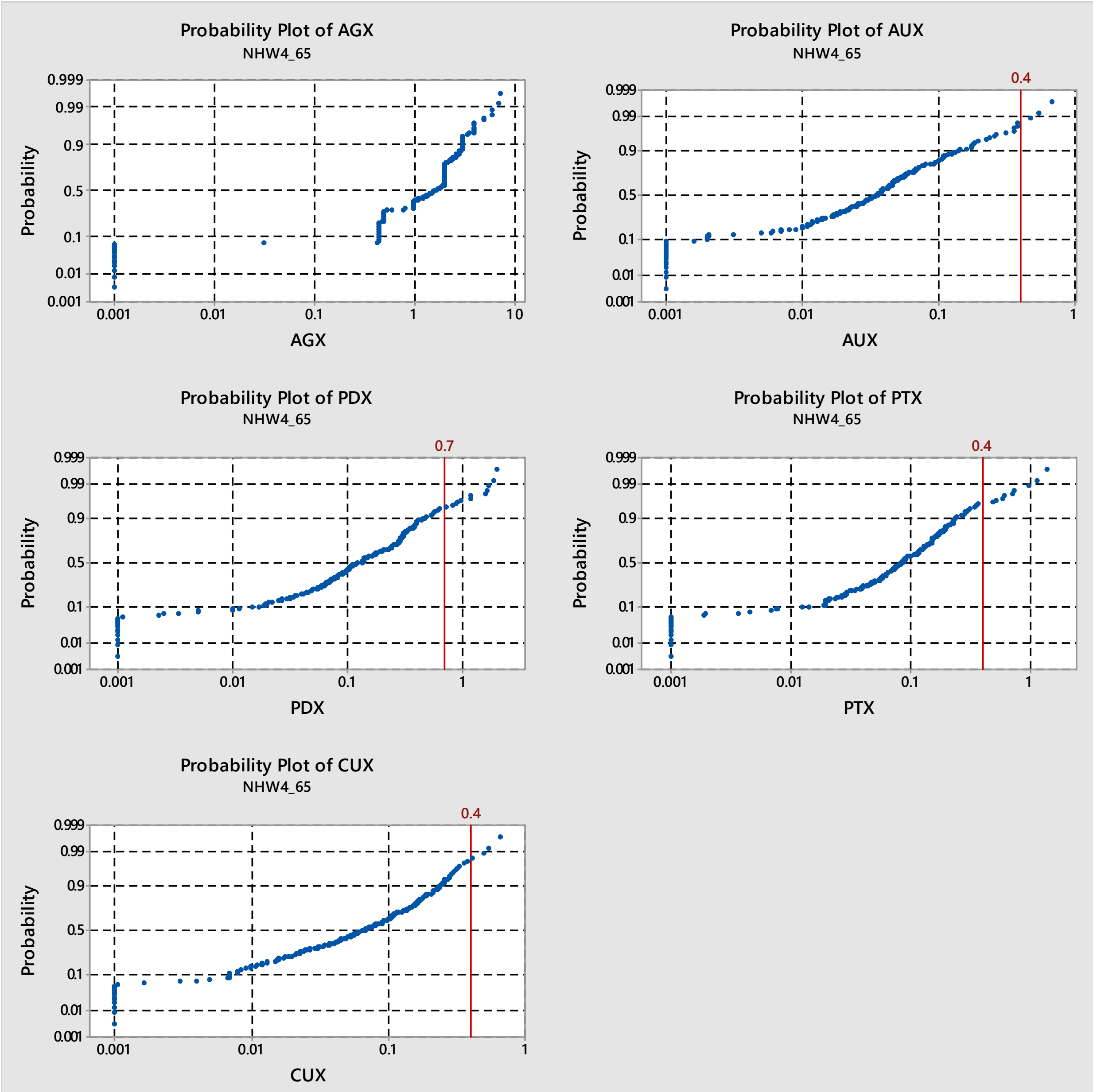
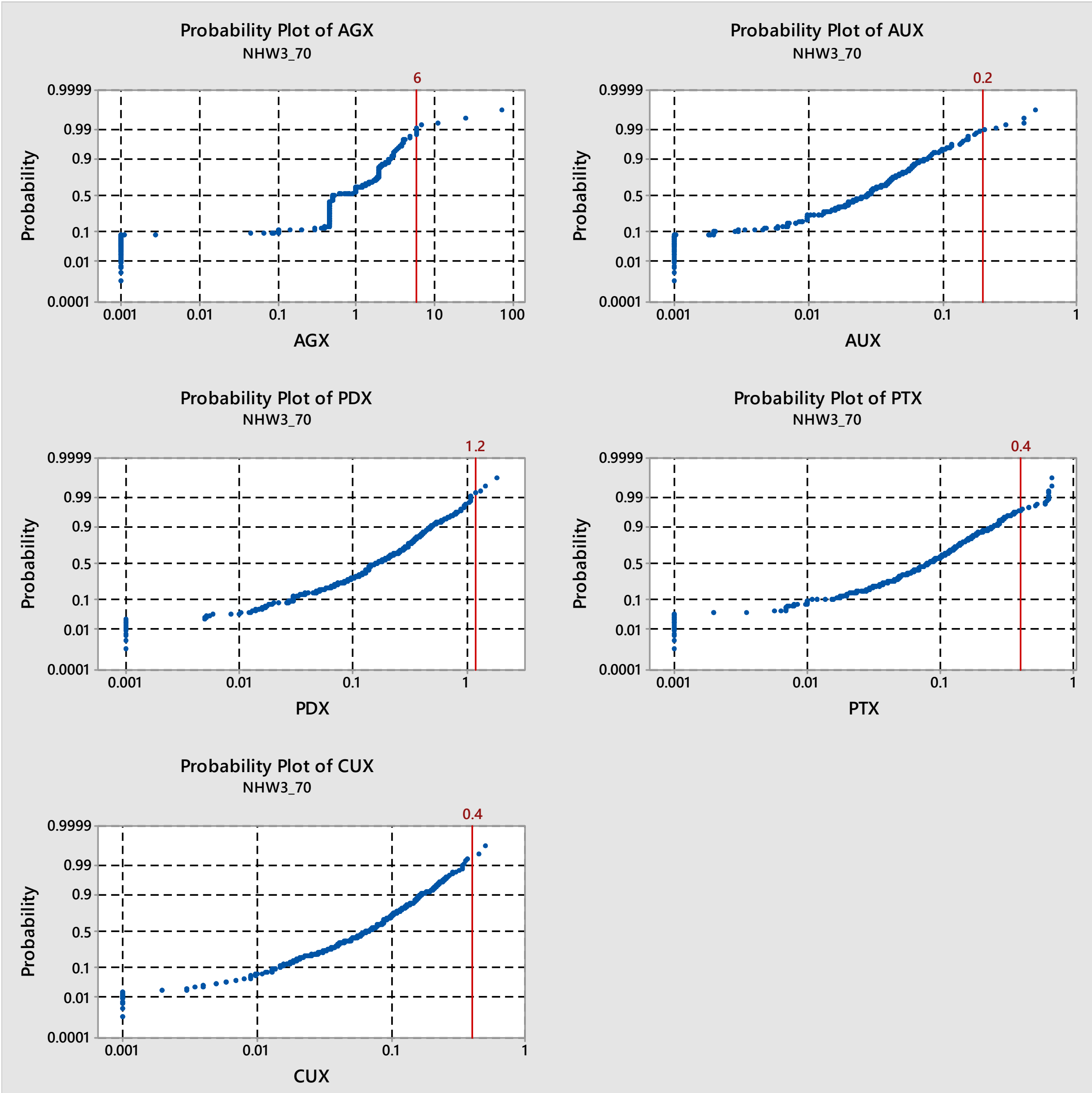
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
100
AGX
Probability Plot of AUX
NHW2_60
0.4
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
AUX
Probability Plot of PDX
NHW2_60
2
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
PDX
Probability Plot of PTX
NHW2_60
0.6
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
PTX
Probability Plot of CUX
NHW2_60
0.7
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
CUX


Probability Plot of AGX
NHW4_65
Probability
AGX
Probability Plot of AUX
NHW4_65
0.4
Probability
AUX
Probability Plot of PDX
NHW4_65
0.7
Probability
PDX
Probability Plot of PTX
NHW4_65
0.4
Probability
PTX
Probability Plot of CUX
NHW4_65
0.4
Probability
CUX


Probability Plot of AGX
NHW3_70
6
Probability
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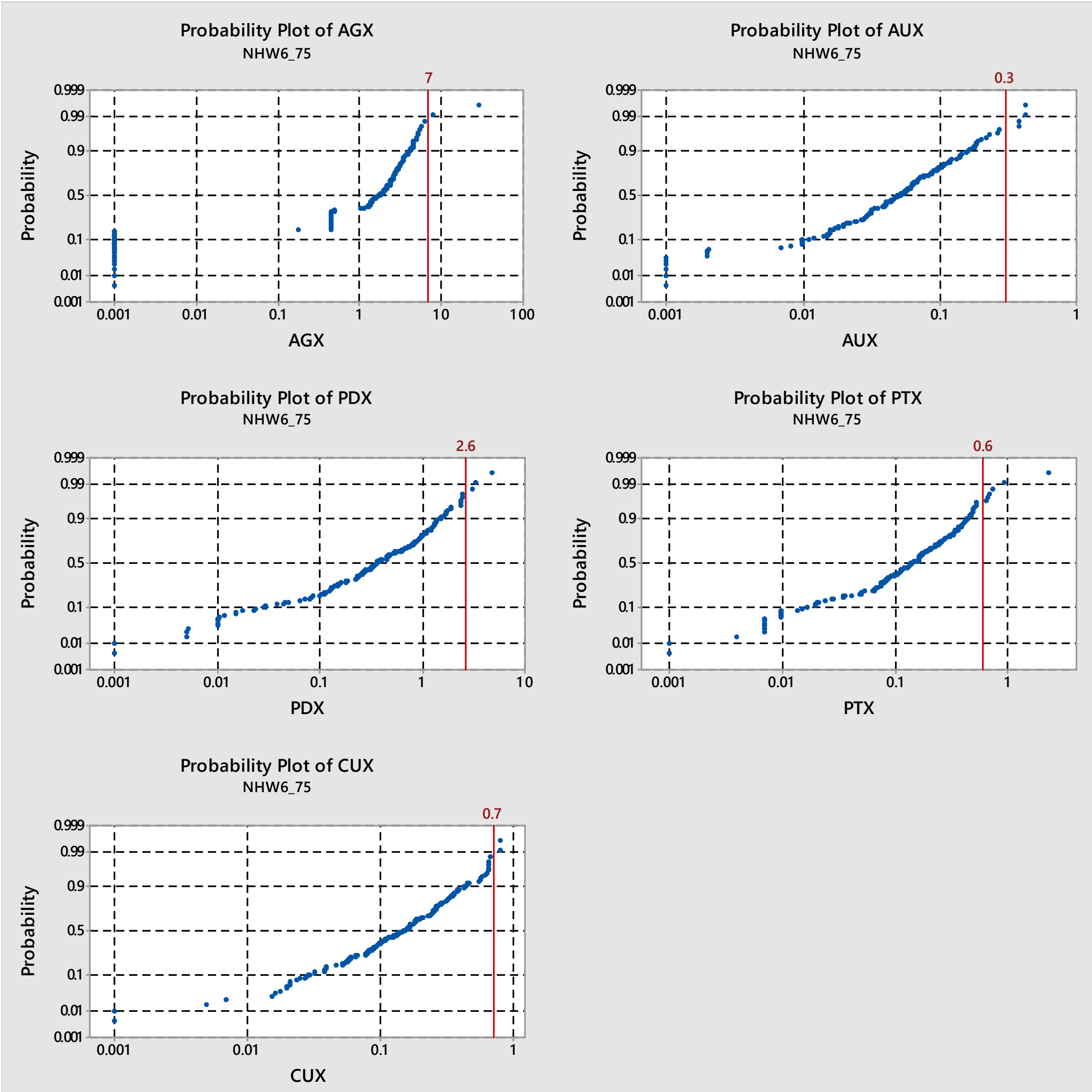
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
100
AGX
Probability Plot of AUX
NHW3_70
0.2
AUX
Probability Plot of PDX
NHW3_70
1.2
PDX
Probability Plot of PTX
NHW3_70
0.4
PTX
Probability Plot of CUX
NHW3_70
0.4
CUX



Probability Plot of AGX
NHW6_75
7
Probability
AGX
Probability Plot of AUX
NHW6_75
0.3
Probability
AUX
Probability Plot of PDX
NHW6_75
2.6
Probability
PDX
Probability Plot of PTX
NHW6_75
0.6
Probability
PTX
Probability Plot of CUX
NHW6_75
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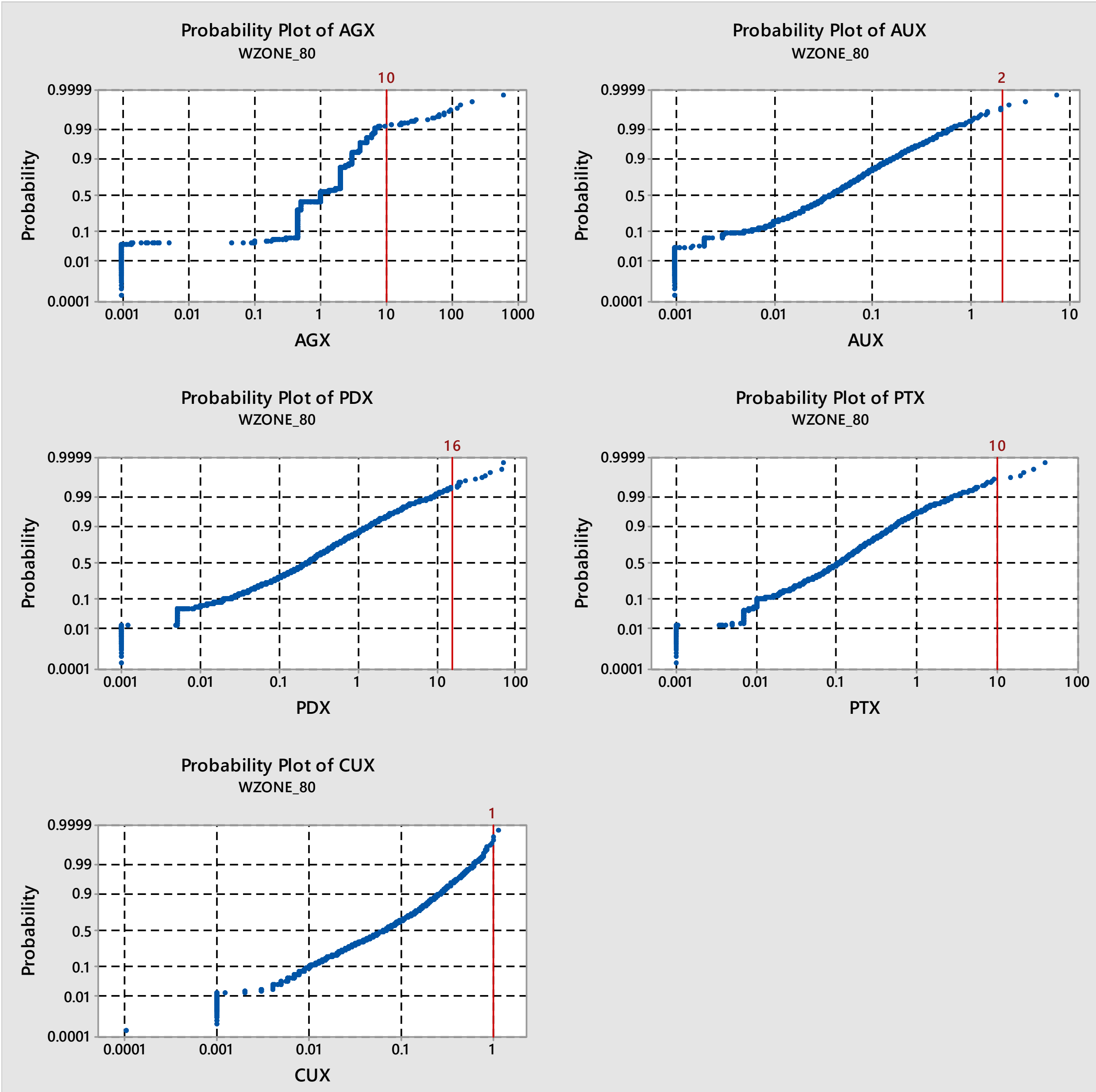
Probability
CUX



Probability Plot of AGX
WZONE_80
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0.99
0.9
0.5
0.1
0.01
0.0001
Probability
0.001
0.01
0.1
1
10
100
1000
AGX
Probability Plot of AUX
WZONE_80
2
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
Probability
0.001
0.01
0.1
1
10
AUX
Probability Plot of PDX
WZONE_80
16
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
Probability
0.001
0.01
0.1
1
10
100
PDX
Probability Plot of PTX
WZONE_80
10
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
Probability
0.001
0.01
0.1
1
10
100
PTX
Probability Plot of CUX
WZONE_80
1
0.9999
0.99
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0.0001
Probability
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0.001
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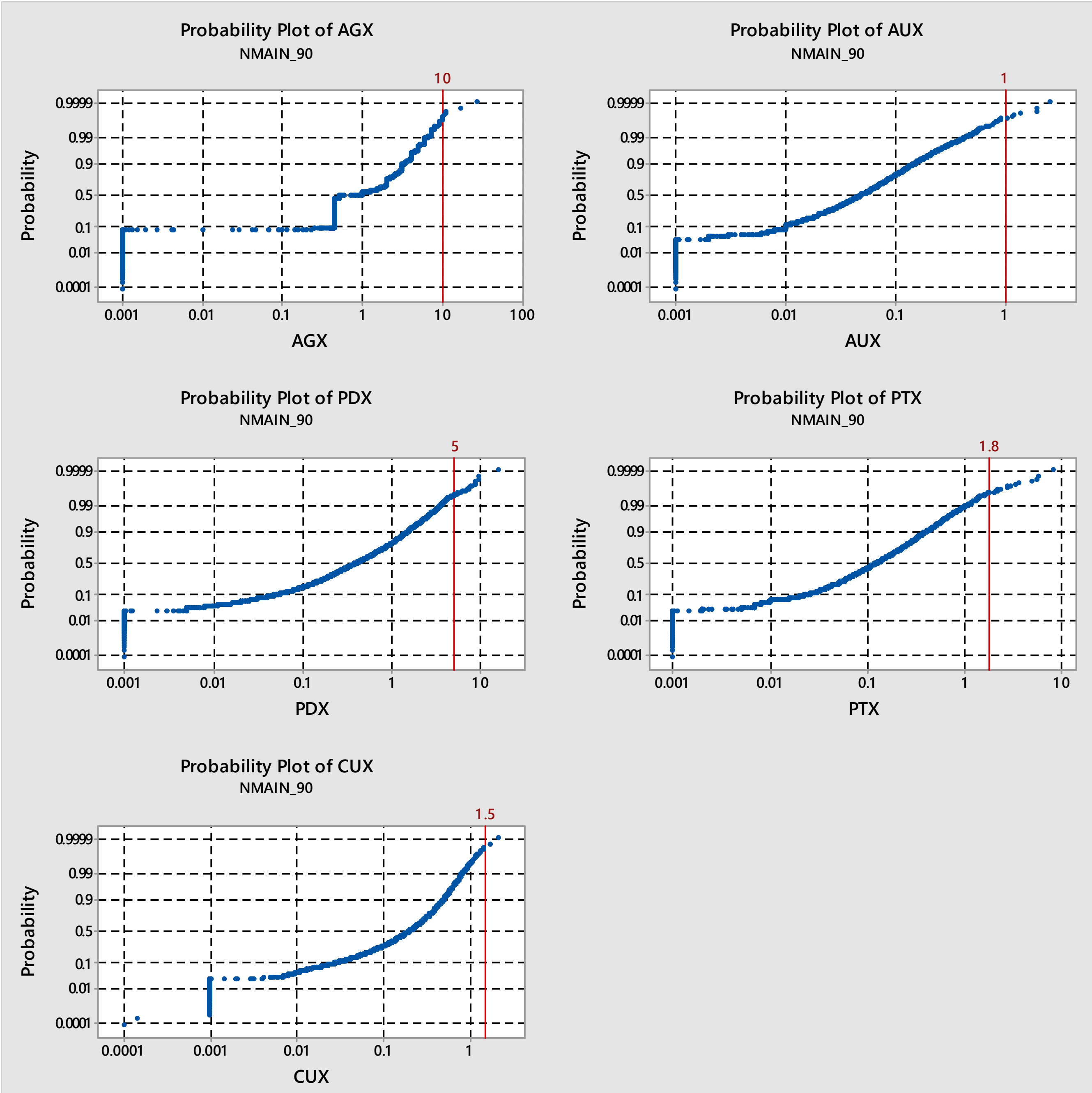
0.1
1
CUX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0.01
0.0001
0.001
0.01
0.1
1
10
100
AGX
Probability Plot of AUX
NMAIN_90
1
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
AUX
Probability Plot of PDX
NMAIN_90
5
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
PDX
Probability Plot of PTX
NMAIN_90
1.8
Probability
0.9999
0.99
0.9
0.5
0.1
0.01
0.0001
0.001
0.01
0.1
1
10
PTX
Probability Plot of CUX
NMAIN_90
1.5
Probability
0.9999
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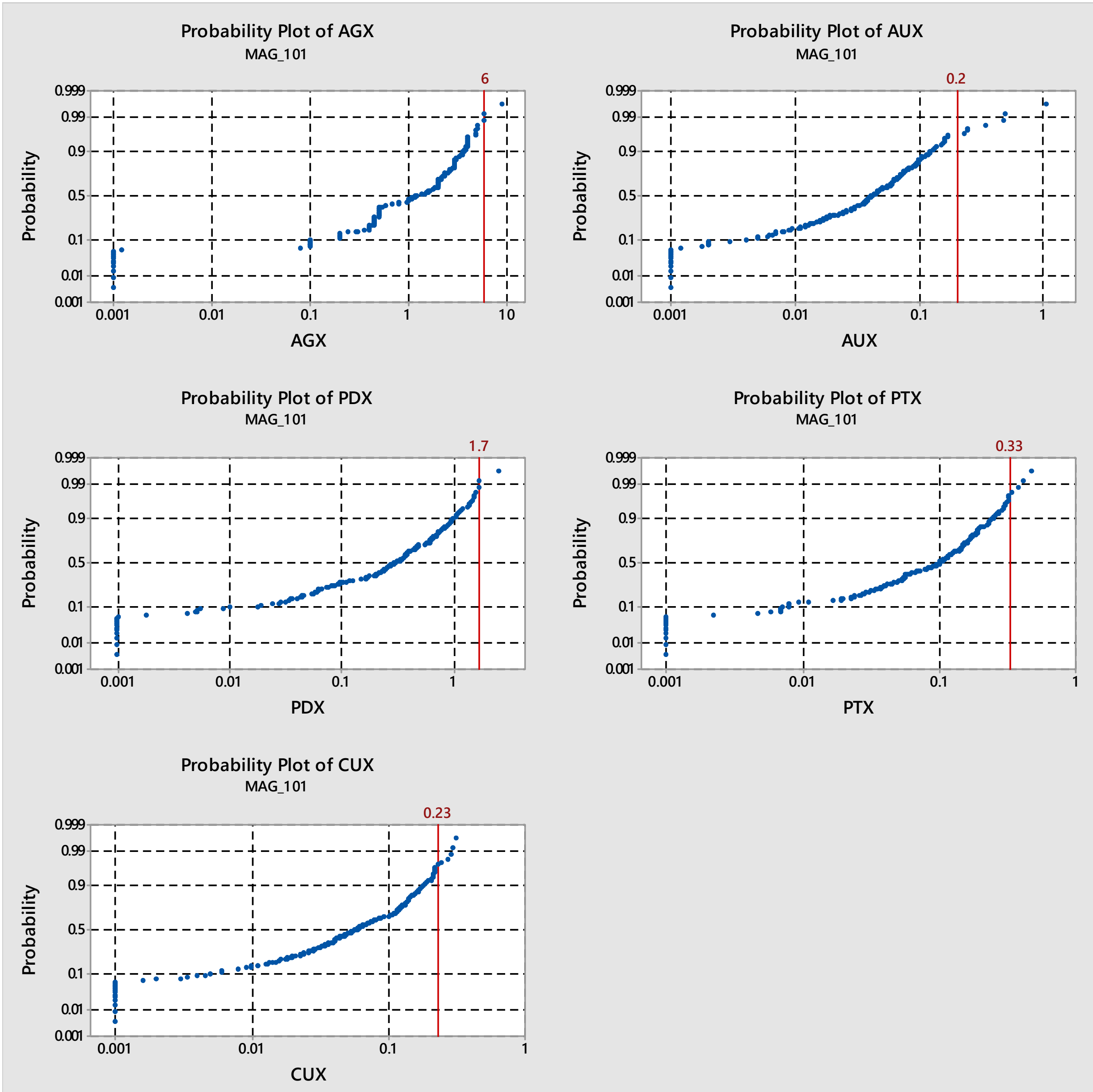
0.5
0.1
0.01
0.0001
0.0001
0.001
0.01
0.1
1
CUX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MAG_101
6
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0.5
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0.001
0.001
0.01
0.1
1
10
AGX
Probability Plot of AUX
MAG_101
0.2
AUX
Probability Plot of PDX
MAG_101
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PDX
Probability Plot of PTX
MAG_101
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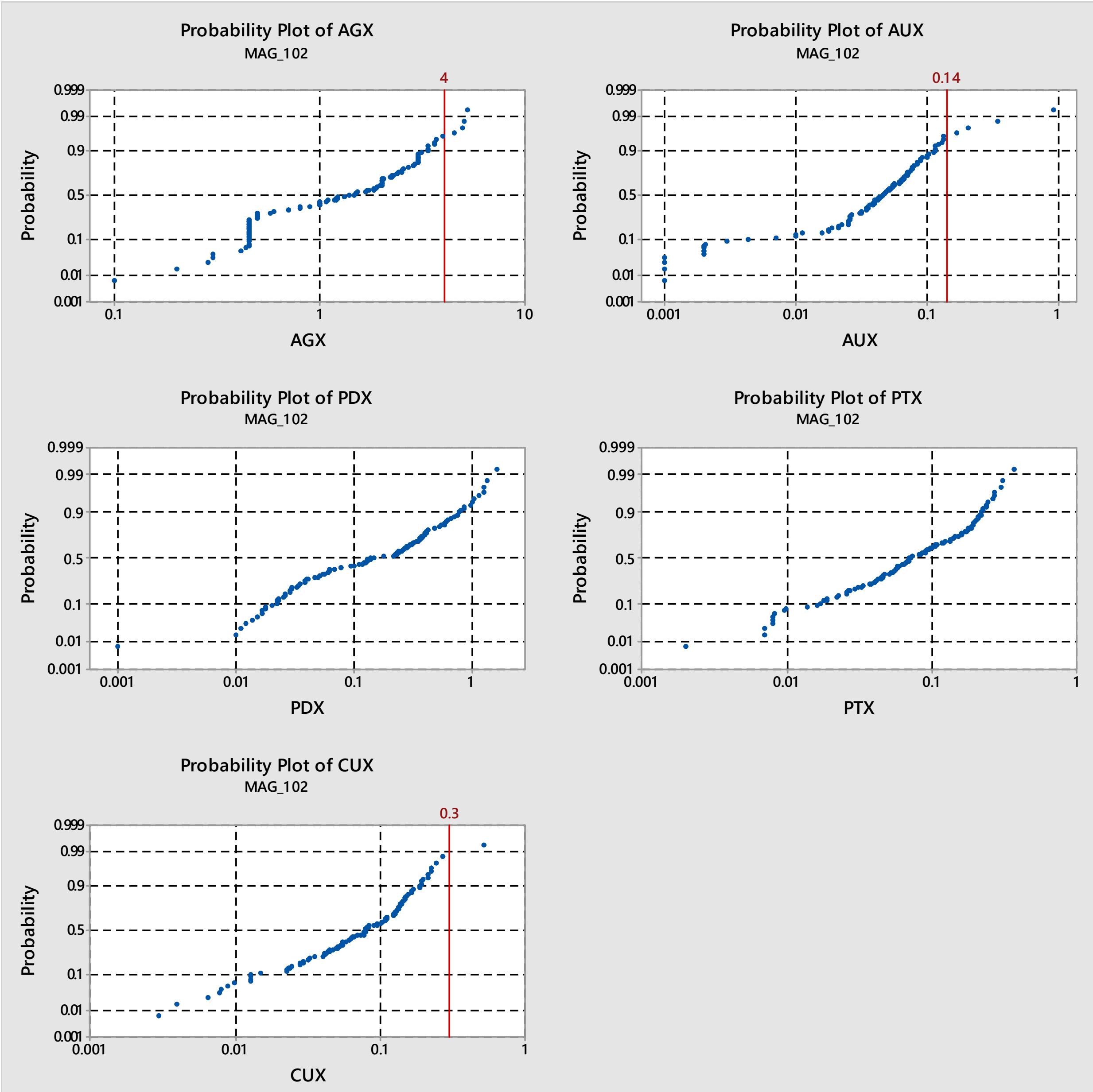
PTX
Probability Plot of CUX
MAG_101
0.23
CUX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MAG_102
Probability
AGX
4
Probability Plot of AUX
MAG_102
Probability
AUX
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Probability Plot of PDX
MAG_102
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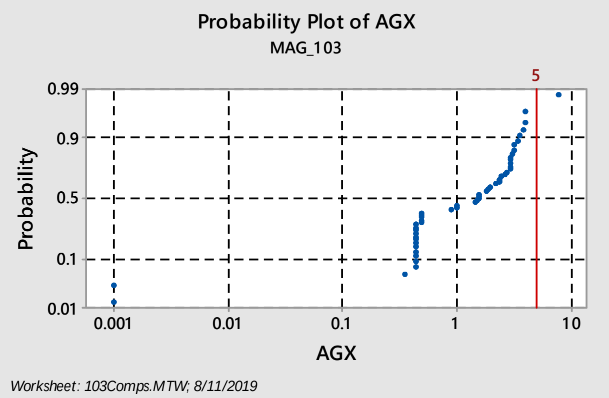
PDX
Probability Plot of PTX
MAG_102
Probability
PTX
Probability Plot of CUX
MAG_102
Probability
CUX
0.3


Probability Plot of AGX
MAG_103
5
Probability
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0.001
0.01
0.1
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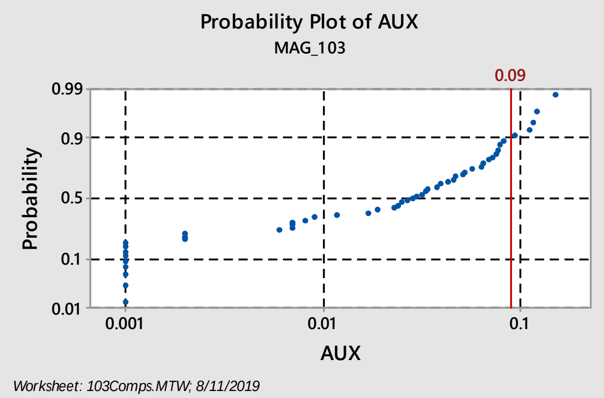
10
AGX
Worksheet: 103Comps.MTW; 8/11/2019


Probability Plot of AUX
MAG_103
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Probability
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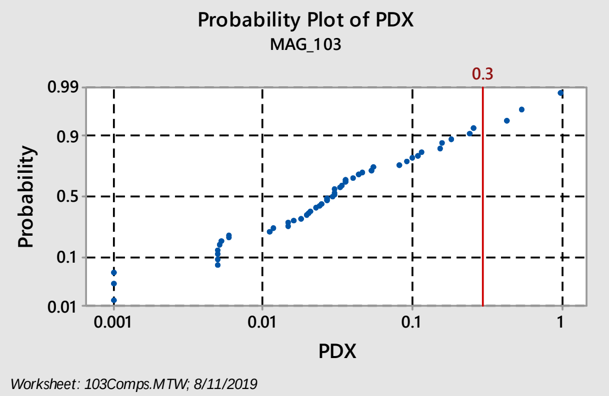
0.1
AUX
Worksheet: 103Comps.MTW; 8/11/2019


Probability Plot of PDX
MAG_103
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Probability
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0.001
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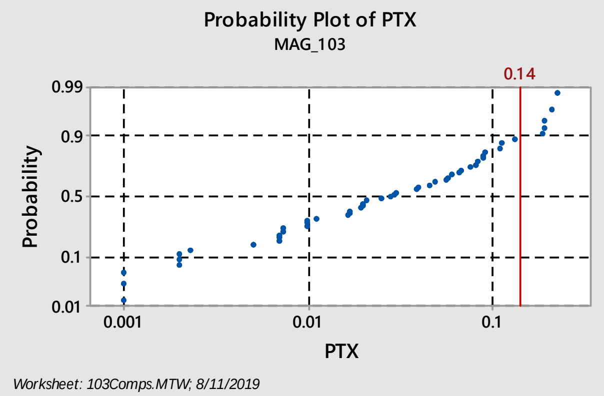
1
PDX
Worksheet: 103Comps.MTW; 8/11/2019


Probability Plot of PTX
MAG_103
0.14
Probability
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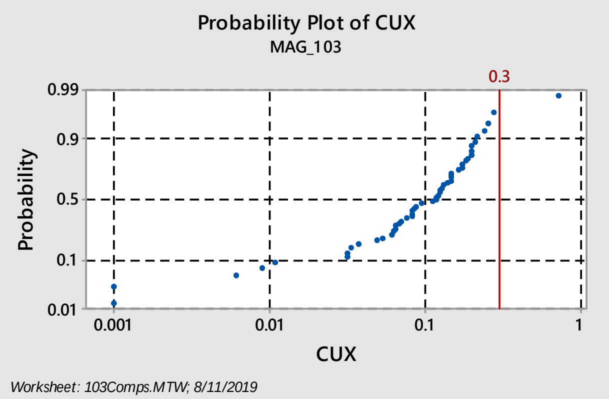
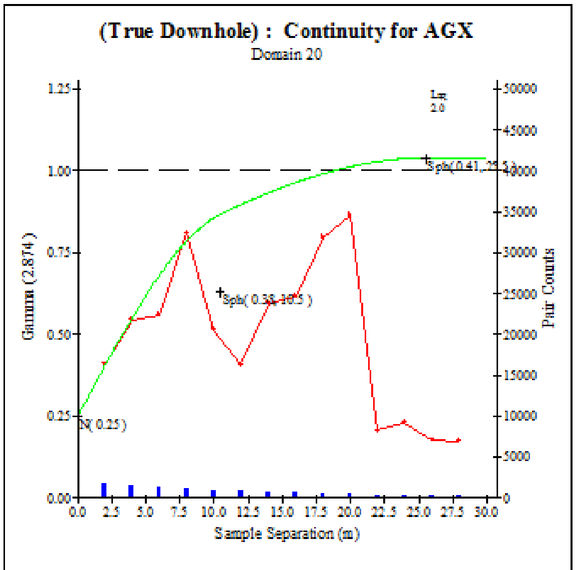
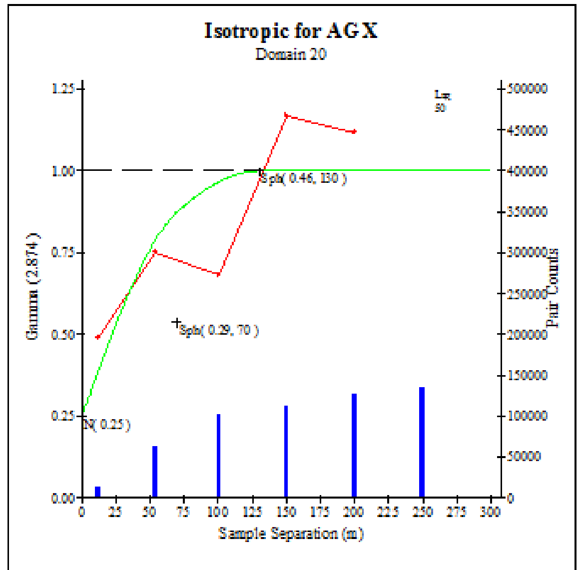
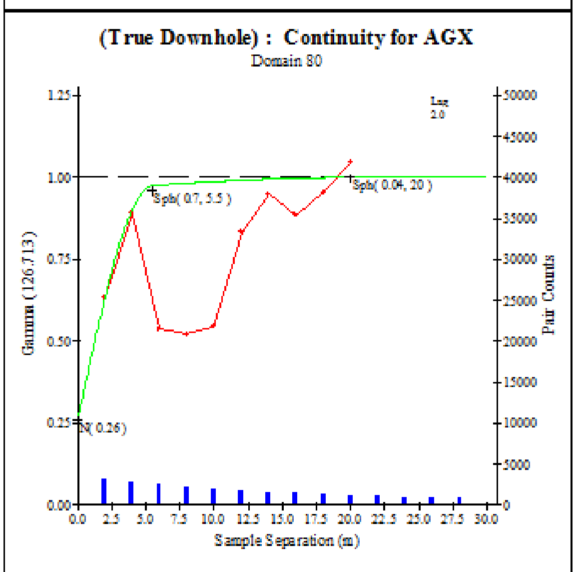
0.1
0.01
0.001
0.01
0.1
PTX
Worksheet: 103Comps.MTW; 8/11/2019

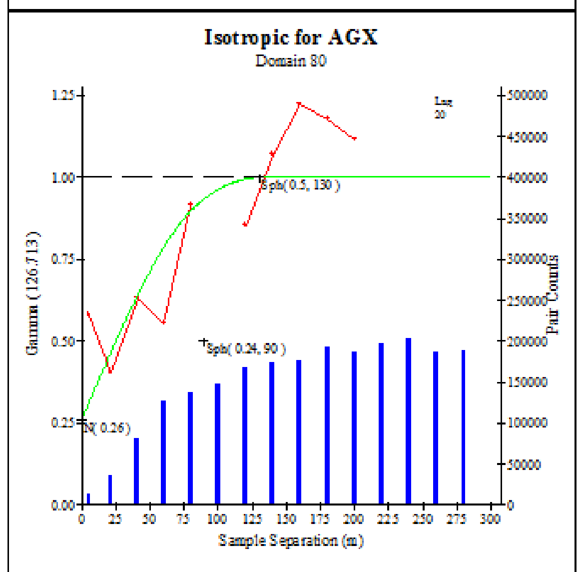

Probability Plot of CUX
MAG_103
0.3
Probability
0.99
0.9
0.5
0.1
0.01
0.001
0.01
0.1
1
CUX
Worksheet: 103Comps.MTW; 8/11/2019

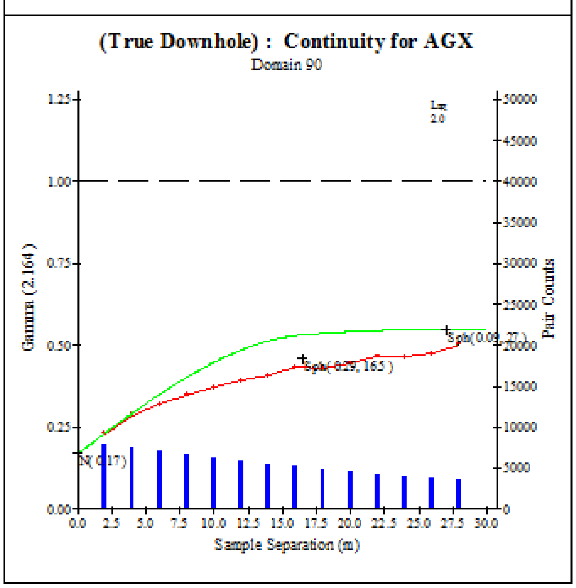
APPENDIX I VARIOGRAMS

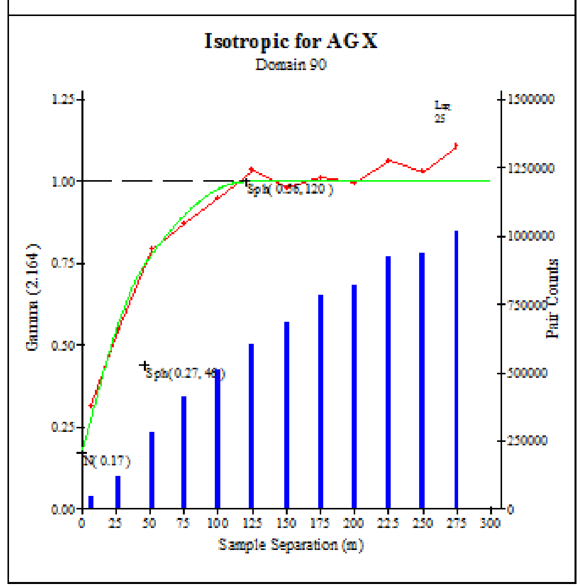


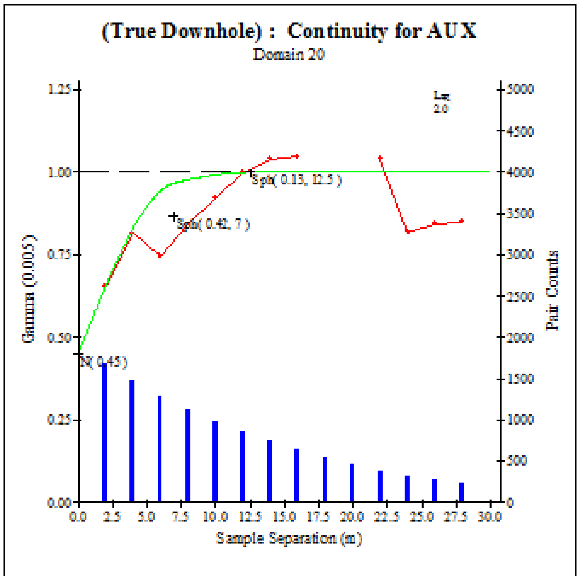


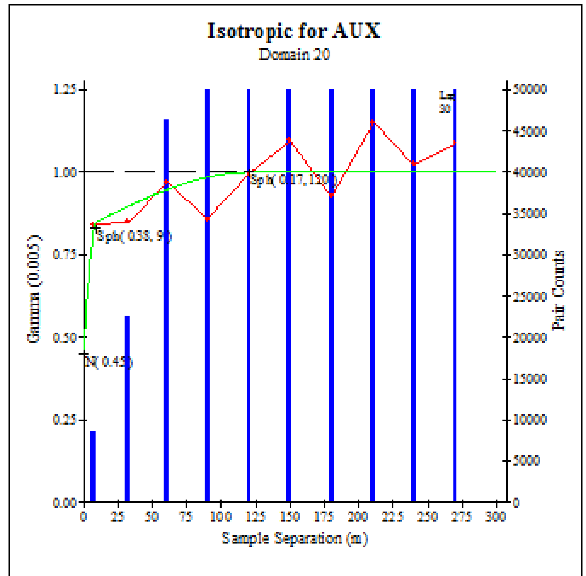


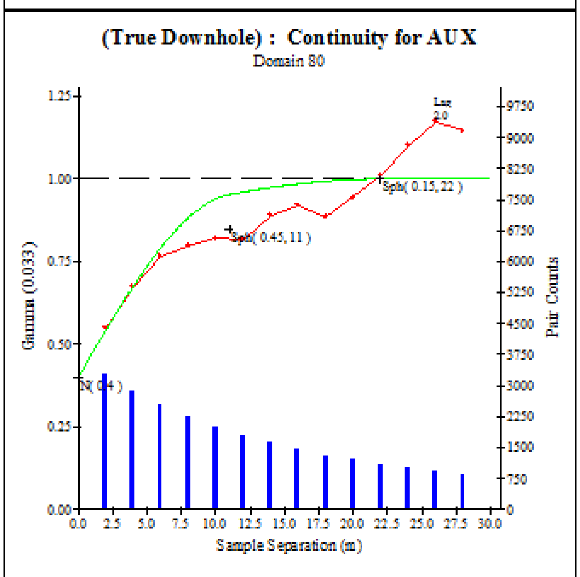


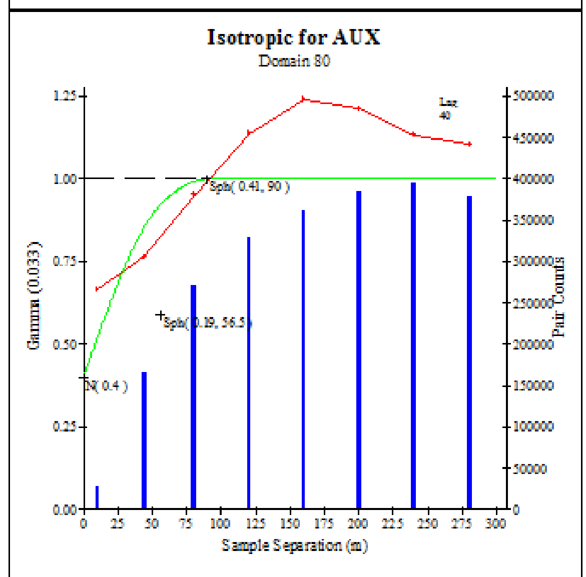


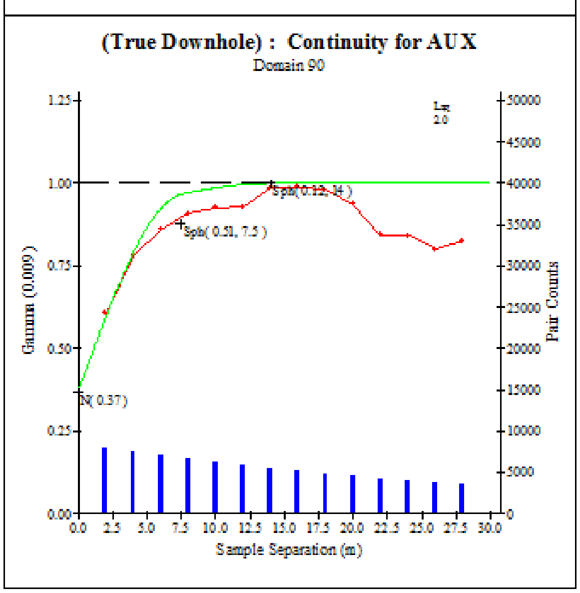


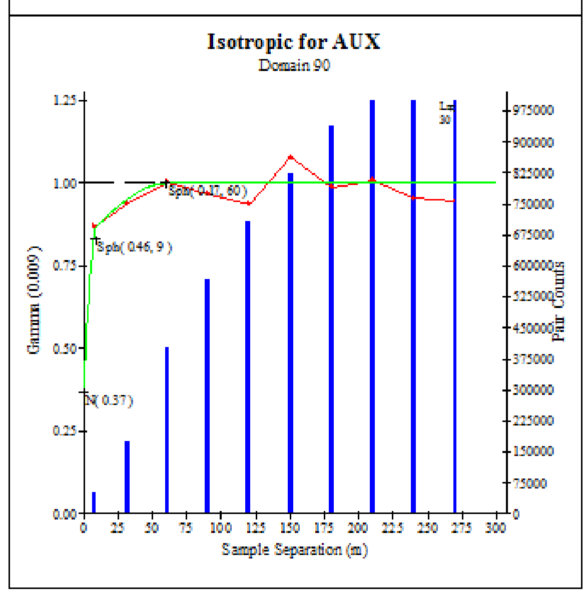

(True Downhole) : Continuity for AUX
Domain 20
Gamma (0.005)
Pair Counts
Sample Separation (m)
Lag 2.0
Sph(0.13, 12.5)
Sph(0.42, 7)
N(0.45)

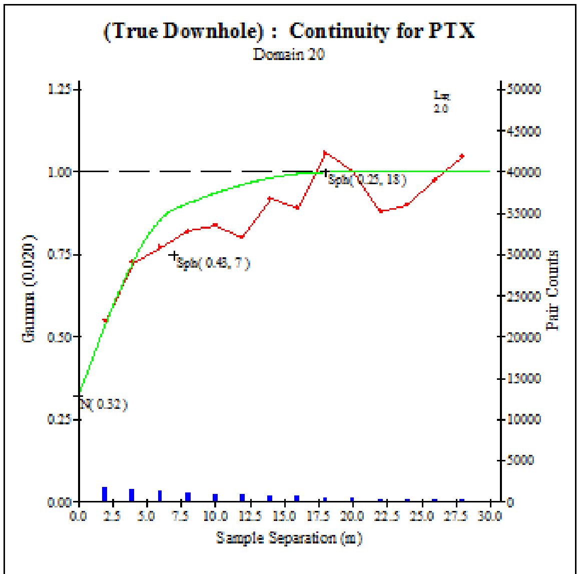

Isotropic for AUX
Domain 20
Gamma (0.005)
Pair Counts
Sample Separation (m)
Lag 30
Sph(0.17, 120)
Sph(0.38, 9)
N(0.45)

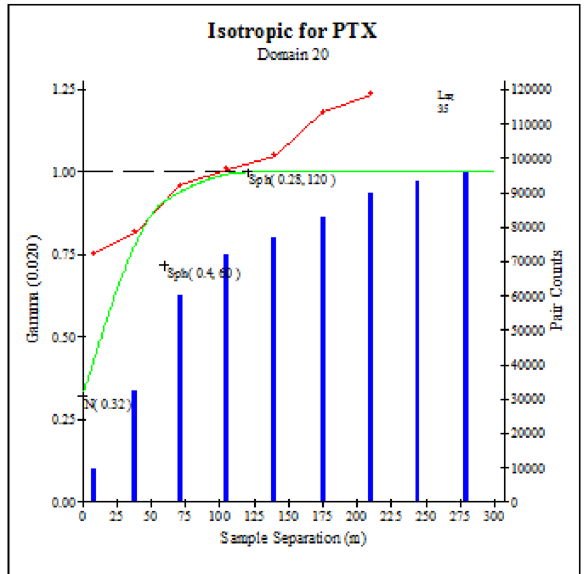

(True Downhole) : Continuity for AUX
Domain 80
Gamma (0.033)
Pair Counts
Sample Separation (m)
Lag 2.0
Sph(0.15, 22)
Sph(0.45, 11)
N(0.4)

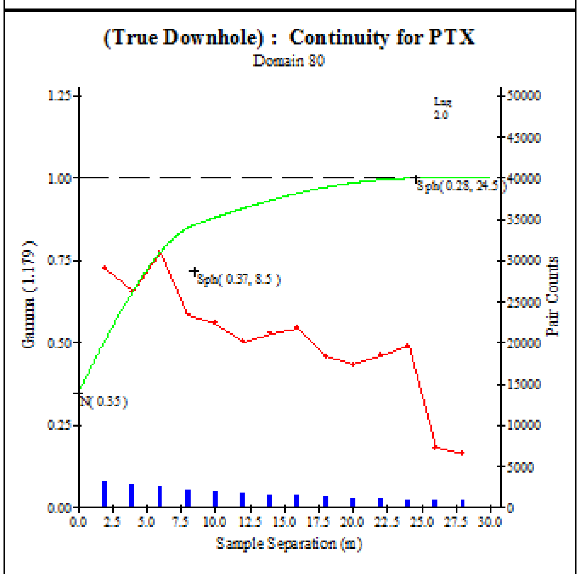

Isotropic for AUX
Domain 80
Gamma (0.033)
Pair Counts
Sample Separation (m)
Lag 40
Sph(0.41, 90)
Sph(0.19, 56.5)
N(0.4)

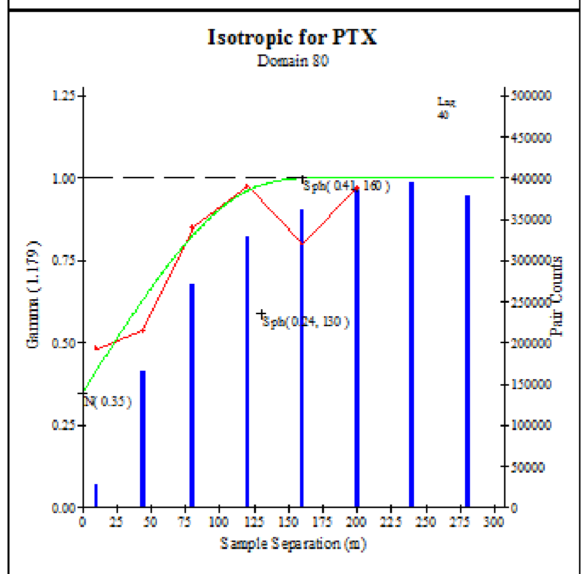

(True Downhole) : Continuity for AUX
Domain 90
Gamma (0.009)
Pair Counts
Sample Separation (m)
Lag 2.0
Sph(0.12, 14)
Sph(0.51, 7.5)
N(0.37)

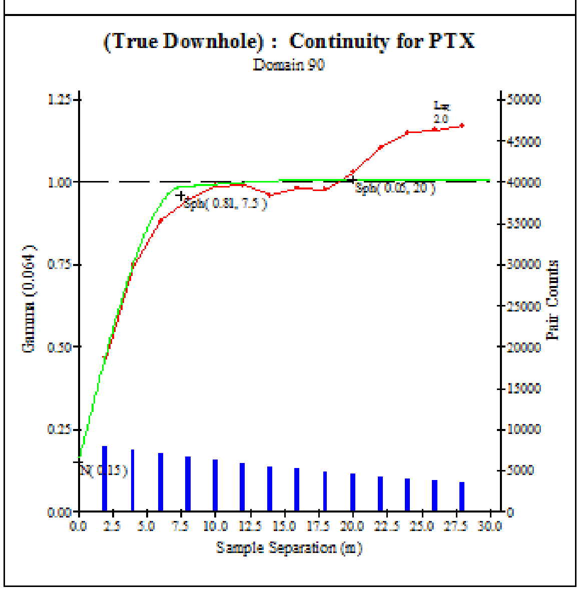

Isotropic for AUX
Domain 90
Gamma (0.009)
Pair Counts
Sample Separation (m)
Lag 30
Sph(0.17, 60)
Sph(0.46, 9)
N(0.37)

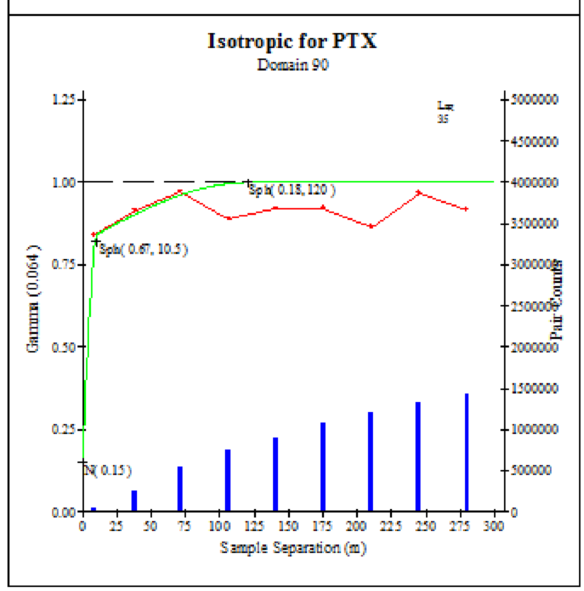

(True Downhole) : Continuity for PTX
Domain 20
Gamma (0.020)
Pair Counts
Sample Separation (m)
N(0.32)
Sph(0.43, 7)
Sph(0.25, 18)


Isotropic for PTX
Domain 20
Gamma (0.020)
Pair Counts
Sample Separation (m)
N(0.32)
Sph(0.4, 60)
Sph(0.28, 120)


(True Downhole) : Continuity for PTX
Domain 80
Gamma (1.179)
Pair Counts
Sample Separation (m)
N(0.35)
Sph(0.37, 8.5)
Sph(0.28, 24.5)


Isotropic for PTX
Domain 80
Gamma (1.179)
Pair Counts
Sample Separation (m)
N(0.35)
Sph(0.24, 130)
Sph(0.41, 160)


(True Downhole) : Continuity for PTX
Domain 90
Gamma (0.064)
Pair Counts
Sample Separation (m)
N(0.15)
Sph(0.81, 7.5)
Sph(0.05, 20)


Isotropic for PTX
Domain 90
Gamma (0.064)
Pair Counts
Sample Separation (m)
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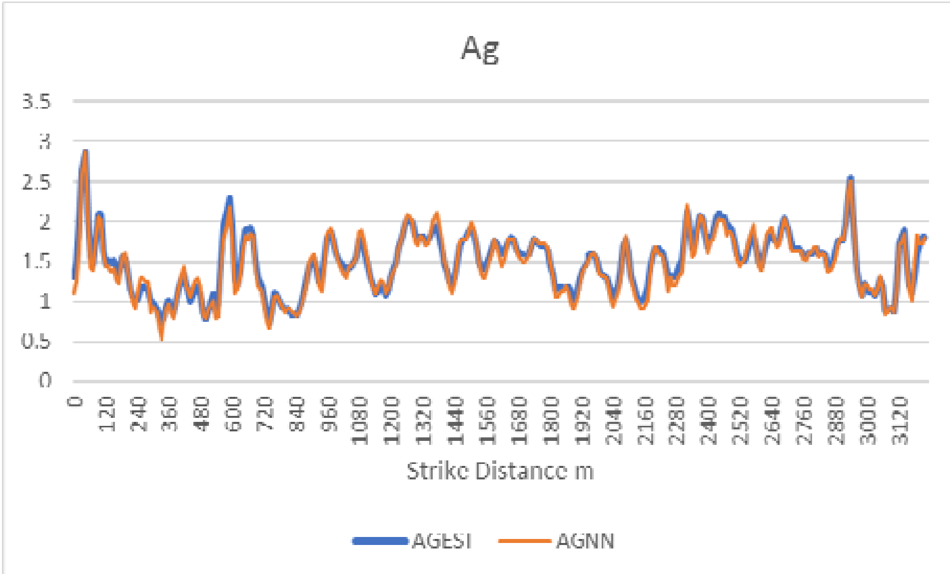
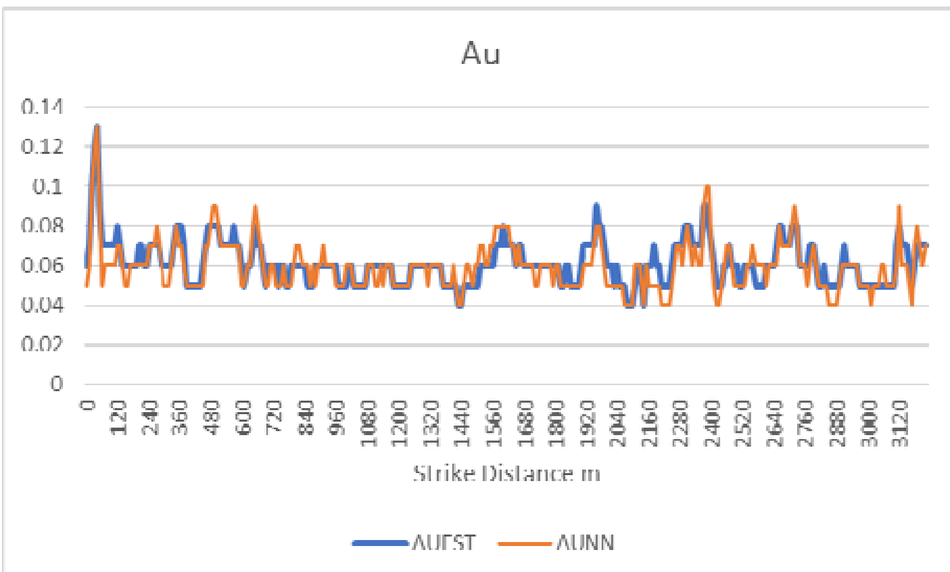
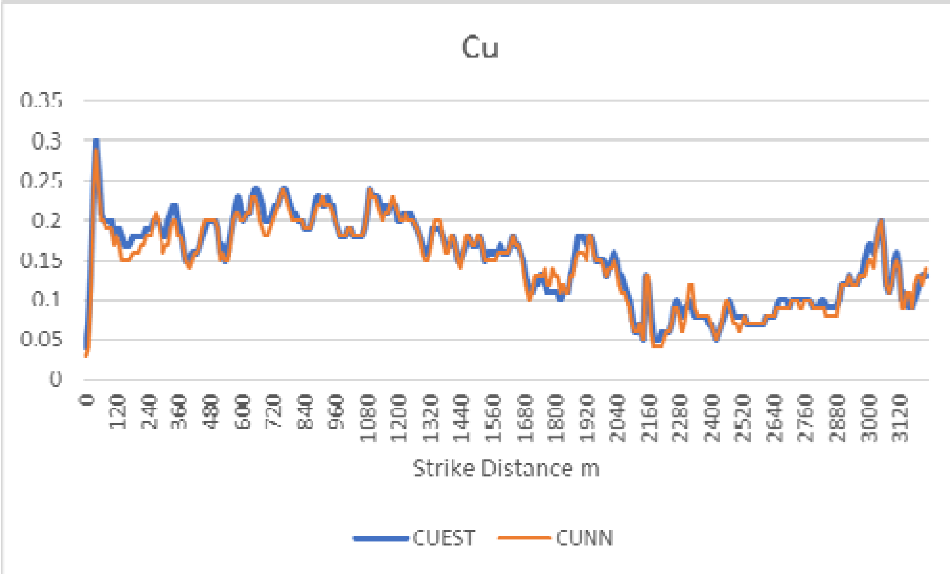
Sph(0.67, 10.5)
Sph(0.18, 120)

APPENDIX J SWATH PLOTS






Cu
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0
120
240
360
480
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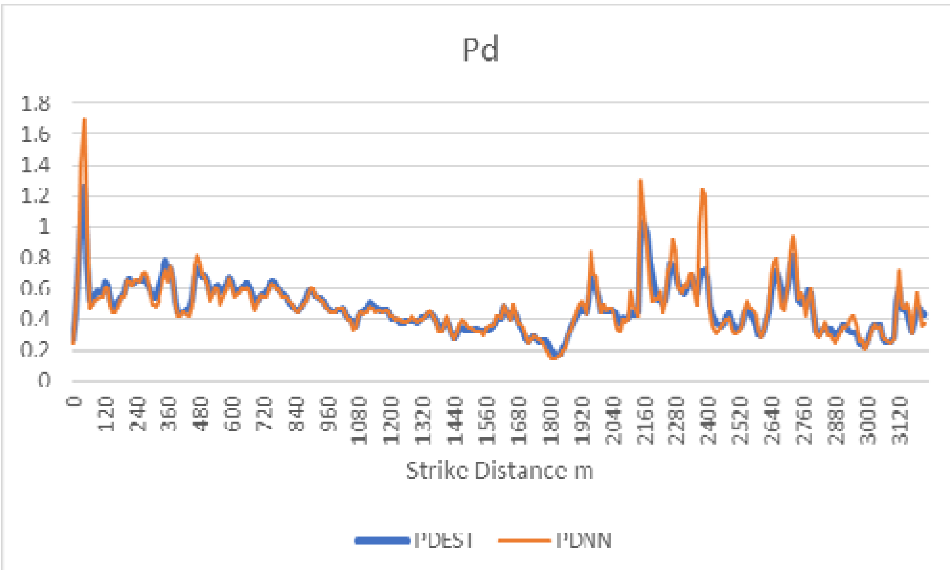
720
840
960
1080
1200
1320
1440
1560
1680
1800
1920
2040
2160
2280
2400
2520
2640
2760
2880
3000
3120
Strike Distance m
CUEST
CUNN


Pd
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
120
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480
600
720
840
960
1080
1200
1320
1440
1560
1680
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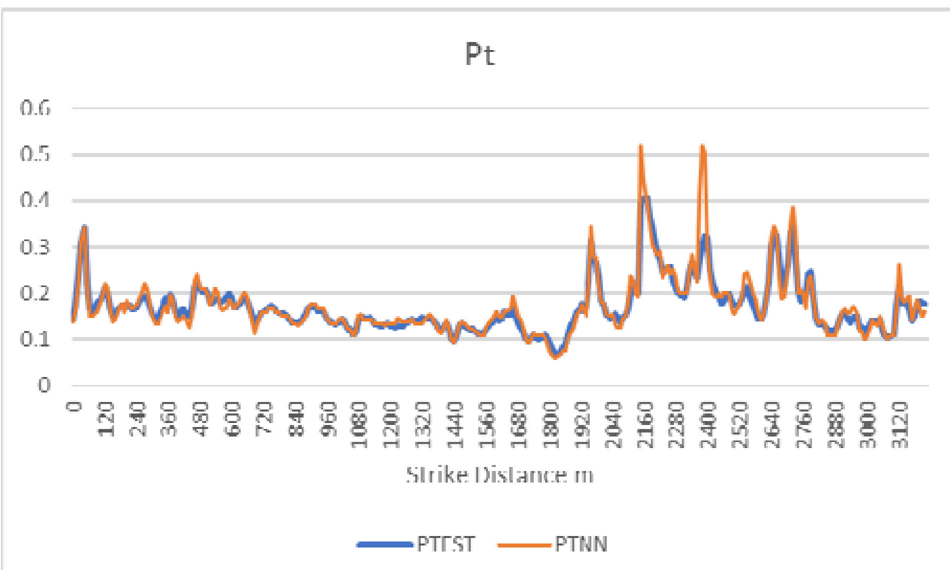
2640
2760
2880
3000
3120
Strike Distance m
PDEST
PDNN


Pt
0.6
0.5
0.4
0.3
0.2
0.1
0
0
120
240
360
480
600
720
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1080
1200
1320
1440
1560
1680
1800
1920
2040
2160
2280
2400
2520
2640
2760
2880
3000
3120
Strike Distance m
PTEST
PTNN

APPENDIX K LAND RECORDS

MARATHON LEASES

Marathon Property Leases	
Lease Numbers	**Area (ha)**
LEA-107094	216.742
LEA-107112	1110.55
LEA-107323	65.393
LEA-108529	25.301
LEA-108530	23.006
LEA-108531	22.039
LEA-108532	11.627
LEA-108533	2.165
LEA-108534	9.522
LEA-108535	16.79
LEA-108536	12.052
LEA-108537	19.291
LEA-108538	29.174
LEA-108539	5.787
LEA-108540	26.369
LEA-108541	13.796
LEA-108542	3.411
LEA-108543	18.506
LEA-108544	7.62
LEA-108545	22.521
LEA-108546	16.888
LEA-108547	17.79
LEA-108548	13.472
LEA-108549	8.413
LEA-108550	19.255
LEA-108551	19.397
LEA-108552	4.435
LEA-108553	9.81
LEA-108554	11.024
LEA-108555	22.889
LEA-108556	19.117
LEA-108557	8.098
LEA-108558	29.324
LEA-108559	16.527
LEA-108560	1.716
LEA-108561	15.864

MARATHON PROPERTY LEASES	
Lease Numbers	**Area (ha)**
LEA-108562	180.866
LEA-108563	185.014
LEA-108564	224.54
LEA-108565	271.423
LEA-109338	125.369
LEA-109441	1302.612
LEA-109525	71.698
LEA-109720	433.299
LEA-109811	119.683
PAT-51026	
Total	**4,810.185**

ENCUMBRANCES, PRODUCTION ROYALTIES AND RETAINED RIGHTS

MARATHON PROJECT AREA

1. Pursuant to the Fenwick/Leishman Agreement with Marathon PGM Corporation ("Marathon") dated August 16, 2005 – 3% NSR royalty in favour of Kenneth Fenwick and Don Leishman on mining claims TB 1247007, TB 1247010 and TB 1247011. Marathon has the right at any time to acquire up to one-third of the royalty (up to an aggregate of 1%) upon a payment of $500,000 for every 0.5% of the royalty purchased. Consent to assignment is required together with written consent to be bound. Section 4(e) contains requirement for statements.

2. Pursuant to the Seafield Agreement with Marathon dated November 2, 2004 - 2% NSR royalty in favour of Seafield Resources Ltd. on mining claim TB 1205330. Stillwater Canada has the right at any time to acquire up to half of the royalty (up to an aggregate of 1%) upon a payment of $1,000,000. Section 5(f) contains the reporting requirements. Consent to assignment is required together with written consent to be bound.

3. Pursuant to the Dunlop Agreement with Marathon dated March 21, 2006 – 3% NSR in favour of W. Bruce Dunlop on mining claims TB 104122 and TB 104118 – 104121 inclusive. Marathon has the right at any time to acquire up to one half of the royalty (an aggregate of 1.5% NSR royalty) upon payment of $500,000 for every 0.5% of the royalty purchased. Consent to assignment is required together with written consent to be bound. Marathon PGM has ROFR on transfers of royalty by Bruce Dunlop.

4. Pursuant to the Gionet Agreement with Marathon dated May __, 2007 - 1% NSR royalty, with a right of first refusal on the sale of the royalty in favour of Brian D. Gionet and Michael Dorval on mining claims 4208442 and 3014935. Consent to assignment is required together with written consent to be bound. Section 5(e) sets out the statements required. Marathon has ROFR on transfers of royalty by Gionet. Section 5(e) contains the reporting requirements.

5. Pursuant to the Michano/Gionet Agreement with Marathon dated April 21, 2005 - 2% NSR on mining claims TB 3012177, TB 3006862, TB 3012173, TB 3019790, TB 4204047, TB 4204048 and TB 4204049. Marathon has the right at any time to acquire up to one half of the royalty (an aggregate of 1% NSR royalty) upon payment of $1,000,000. Royalty payor must give prior notice of intended surrender or allowing to lapse and if royalty recipient so elects the property must be transferred with 12 months' of assessment credits paid up. Consent to assignment is required together with written consent to be bound.

6. Pursuant to the Benton Agreement dated March 25, 2009, certain conditions of which were modified by the Benton Resources Corp ("Benton")/Stillwater Mining Co. Agreement dated December 16, 2010 – Agreements March 25, 2009 and Dec 16, 2010 are for different ground. The first is for the Bamoos claims and on Bermuda Claim, while the second agreement is for the rest of the Bermuda ground. 2% NSR and $0.05 per tonne waste material fee (the "Waste Dumping Fee") in favour of Teck Cominco Limited ("Teck") on the Bamoos property comprising mining claims 1240016, TB101224, TB101225, TB101578,

TB101579, TB101580, TB101581, TB101583, TB103572, TB103573, TB103574, TB103575, TB103583, TB103584, TB106983 and TB107641. Note that the property caught should also be TB103657 and Lease 107094. The Agreement states that Teck has a 2% net smelter return royalty in respect of the Bamoos leases referenced in Schedule "A". Consent to assignment is required. Royalty recipient has rights to access records. Royalty payor at its own expense must audit the calendar year royalty statement by a national firm of chartered accountants. Royalty payor can acquire up to 1/2 of the royalty on payment of $1 million. Consent to assignment is required together with written consent to be bound.

The May 12, 2005 Bamoos agreement is with respect to Mining Lease 107094. It appears that Bamoos' rights are now those of Teck and Benton's obligation are now those of Marathon/Stillwater.

The definition of waste material is waste rock, other mined material, tailings or other residual material from ore processing from the property or another source. Within 10 days after each calendar quarter, Bamoos must be notified if Benton commences depositing waste rock. Bamoos has the right to enter on to the property to observe operations and inspect records. Benton agrees to perform condemnation drilling in the area of the proposed deposit of waste material to a depth of 110 metres below surface in accordance with standard industry practice. Section 20 contains an area of interest clause that provides that there is a 2 km area of interest. However, Section 25.1 states that except with respect to net smelter returns and waste material payments, upon the expiry of the back in right, the Agreement terminates. Section 22 provides that if Benton wishes to dispose of any rights under the Agreement it must first offer to sell them to Bamoos and similarly if Bamoos wishes to dispose of any rights under the Agreement it must first offer to sell them to Benton. Schedule 2 contains the NSR royalty provisions. Section 2.02(b) thereof contains the reporting requirements. Section 3.03 thereof states that the royalty holder has the right to request that the royalty payor have its independent external auditors provide their audit certification for royalty statements.

The Agreement also mentions a 1% net smelter return royalty to Stephen Stares in respect of the Bermuda claims which are listed in the Schedule as 1246640, 1246641, 1246642, 1246643, 4209026, 1240554, 1240016, 1240552, 1240553, 1240017, 1240555. The remainder of the claims listed in Schedule A of the March 25, 2009 agreement are the claims that make up the Bamoos Lease and are not subject to the Stares royalty.

7. Pursuant to the Michano/Gionet/Dorval Agreement with Marathon dated July 12, 2011 - 2% NSR on mining claims TB 4246277, TB 4242127 and TB 4246285. Marathon has the right at any time to acquire up to one half of the royalty (an aggregate of 1% NSR royalty) upon payment of $1,000,000. Consent to assignment is required together with written consent to be bound. Royalty payor must give prior notice of intended surrender or allowing to lapse and if royalty recipient so elects the property must be transferred with 12 months' of assessment credits paid up. Section 5(e) is the reporting section.

8. Pursuant to the Michano/Gionet Agreement with Marathon dated July 12, 2011 - 2% NSR on mining claims TB 4246283 and TB 4246284. Marathon has the right at any time to acquire up to one half of the royalty (an aggregate of 1% NSR royalty) upon payment of $1,000,000. Consent to assignment is required together with written consent to be bound. Royalty payor

must give prior notice of intended surrender or allowing to lapse and if royalty recipient so elects the property must be transferred. Section 5(e) is the reporting section.

9. Pursuant to the Wahl Agreement with Marathon dated July 8, 2008 - 2% NSR on mining claims TB 3015131, TB 3015132 and TB 3015133. Marathon has the right at any time to acquire up to one half of the royalty (an aggregate of 1% NSR royalty) upon payment of $1,000,000. The acquisition right is only after commencement of Commercial Production not at any time. The royalty payor must give notice to the royalty recipient of the date on which Commercial Production is achieved. Section 7 of Schedule B sets forth reporting. Section 9 of Schedule B sets forth a right of inspection to royalty recipient. Section 10 of Schedule B provides that the royalty payor must annually have an audit statement prepared by its auditors within 90 days of its fiscal year end and must forthwith deliver a copy of such statement to the royalty recipient.

BERMUDA PROJECT AREA

10. Stares agreement dated December 15, 2003, amended October 18, 2005 between Stephen Stares and Benton relating to TB 1240016 1240017, 1240018, 1240019, 1240548, 1240549, 1240550, 1240551, 1240552, 1240553, 1240554, 1240555, 1245401, 1246640, 1246641, 1246642 and 1246643. The Agreement provides for a 1% NSR with a 1 kilometre area of interest. The amendment dated October 18, 2005 provides that the royalty applies to the area of interest but not lands acquired by Benton from Bamoos Minerals Inc. by agreement dated May 12, 2005, as amended June 30, 2005 Section 16 of Schedule A states that within 120 days of the end of each calendar year, the royalty payor must provide the royalty recipient with an annual report of all activities and operations conducted during the preceding calendar year together with a description of the activities and operations anticipated during the current year including estimates of expenditures, production, ore reserves and any net smelter returns payable. note: In December 2011 Stares sold one half of the subject royalty (an aggregate of 0.5% NSR) to Gold Royalties Corp.

11. Pursuant to the Benton Resources/Stillwater Mining Co. Agreement dated December 16, 2010 - 2% NSR royalty (the "Newmont Royalty") in favour of Newmont (now held by Franco-Nevada) on mining leases CLM 121, CLM 122, CLM123, CLM124, TB101845, TB101846, TB101847, TB101849, TB101850, TB101864, TB101865, TB101866, TB101869, TB101870, TB101871, TB101845, TB101891, TB101892, TB101893, TB101894, TB101895, TB101896, TB101897, TB101898, TB101899, TB101900, TB101901, TB101902, TB101903, TB101904, TB101905, TB101910, TB101915, TB101916, TB101917, TB101924, TB108223 and TB108224.

    Redstone agreement dated April 20, 2005 between Redstone Resources Inc. and Benton (Redstone being referred to as "Newmont"). This Agreement relates to the following claims: 101850, 101870, 101871, 101864, 101866, 101865, 101845, 101846, 101847, 101849,101869,101910,101915,101916,101917,101924,CLM 121, 122, 123, 124, 108244, 101892, 1021893, 101894,101895, 101896,101897,101898, 101899, 101900, 101901, 101902, 101903, 101904, 101905, 18223 and 101891. The Agreement provides for a 2% NSR. Newmont may register the royalty. There is an AOI within the external boundaries of the property. If there is a transfer, the assignee must agree in writing to be bound by the Agreement. Section 20 provides for reporting obligations. Section 21 provides for obligations on the part of royalty payor to provide right to royalty recipient pre abandonment of property or if taxes are to go unpaid. The royalty recipient may elect to take in kind. There are consultation restrictions vis a vis issuing a press release. Section 7.3 states that if royalty payor establishes a mineral resource or mineral reserve on any of the property royalty payor must provide to Newmont the amount of such resource or reserve as soon as practicable after royalty payor makes a public declaration. Section 8.18 of the royalty agreement provides that if royalty payor or any successor enters into any development agreement with Superior Wind Energy Development Inc. Newmont is entitled to receive 20% of the gross revenue received by royalty payor. Sibanye has advised that the royalty was transferred to Franco-Nevada. Franco-Nevada has annually requested an annual report.

12. Pursuant to the Benton Resources/Stillwater Mining Company Agreement dated December 16, 2010 - 1% (conditional) NSR in favour of Benton on mining leases CLM 121, CLM 122, CLM123, CLM124, TB101845, TB101846, TB101847, TB101849, TB101850, TB101864, TB101865, TB101866, TB101869, TB101870, TB101871, TB101845, TB101891, TB101892, TB101893, TB101894, TB101895, TB101896, TB101897, TB101898, TB101899, TB101900, TB101901, TB101902, TB101903, TB101904, TB101905, TB101910, TB101915, TB101916, TB101917, TB101924, TB108223, TB108224 and mining claims 4204476, 4204477, 4204478, 4207281, 4207280, 4207283, 4209025, 1240551, 1240553, 1240548, 1240552, 1240549, 1240018, 1240019,4207863, 4207858, 4207859, 4207861, 4207860, 4207857, 4207282, 4203971, 1240550, 4207856, 1245401, 1246640, 1246641, 4203972, 1246642, 1240555, 1240017, 4209026, 1246643 and 1240554. The NSR is conditional upon 2.5M ounces of gold, platinum and palladium having been produced. This Agreement references the Stares royalty in the amount of 1% and the Newmont Royalty (now Franco-Nevada royalty) in the amount of 2%.

GEORDIE PROJECT AREA

13. Pursuant to underlying agreements of record that remained in effect subsequent the acquisition of Discovery PGM Corp. by a predecessor of Stillwater Canada, the Geordie Lake property is encumbered by - 2½ % NSR in favor of Superior Prospects Inc. and Melvin Joa (in aggregate) on mining claims 1184283, 1184297, 1209682, 1209683, 1209684, 1237697, 1237698 and 1237699.

14. Pursuant to the Gryphon/L.E.H. Ventures Ltd. (“LEH”) Agreement dated June 3, 1999, Gryphon Metals Corp. (“Gryphon”) retains the right upon the completion and presentation of a definitive feasibility study on the Geordie Lake Property to back into a 12.5% interest on the property by paying Stillwater Canada a total of 31.25% of all exploration and development costs incurred on the property to that point. This Agreement relates to 1209682, 1209683, 12109684, 1184283, 1184297 and references that Superior Prospects Inc. and Melvin Joa have a 2.5% NSR that may be reduced to 1.5% on payment of $1.0 million.

15. Yozipovic agreement dated November 14, 2011 between Tony Robert Yozipovic and Marathon. This is with respect to claim TB3006106. There is a 2% NSR royalty payable. The

entire royalty may be purchased for $1.0M (together with payment of accrued but unpaid royalties). This Agreement is not signed by Marathon. Section 5(e) relates to reporting. Royalty payor must give prior notice of intended surrender or allowing to lapse and if royalty recipient so elects the property must be transferred with 12 months' of assessment credits paid up.

GENERATION PGM INC. CLAIMS

BCMC = boundary cell mining claims
SCMC = single cell mining claims

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
260281	Bermuda	BCMC			200		200
124057	Bermuda	BCMC				200	200
280335	Bermuda	BCMC			200		200
124056	Bermuda	BCMC				200	200
268282	Bermuda	BCMC			200		200
291402	Bermuda	BCMC				200	200
155919	Bermuda	BCMC			200		200
236183	Bermuda	BCMC				200	200
295847	Bermuda	BCMC			200		200
303513	Bermuda	BCMC				200	200
301811	Bermuda	BCMC			200		200
333334	Bermuda	BCMC				200	200
265222	Bermuda	BCMC			200		200
265337	Bermuda	BCMC				200	200
264685	Bermuda	BCMC			200		200
304492	Bermuda	BCMC				200	200
169483	Bermuda	BCMC		200			200
153444	Bermuda	BCMC		200			200
198743	Bermuda	BCMC		200			200
115333	Bermuda	BCMC		200			200
245137	Bermuda	BCMC			200		200
334439	Bermuda	BCMC			200		200
218902	Bermuda	BCMC			200		200
333034	Bermuda	BCMC			200		200
220374	Bermuda	BCMC		200			200
275573	Bermuda	BCMC		200			200
246869	Bermuda	BCMC			200		200
154873	Bermuda	BCMC			200		200
246871	Bermuda	BCMC			200		200
302681	Bermuda	BCMC			200		200
154874	Bermuda	BCMC			200		200
108297	Bermuda	BCMC			200		200
331141	Bermuda	BCMC			200		200
336611	Bermuda	BCMC			200		200

Marathon Claims Held by Generation PGM Inc.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
155028	Bermuda	BCMC			200		200
308997	Bermuda	BCMC			200		200
302682	Bermuda	BCMC			200		200
331123	Bermuda	BCMC			200		200
227591	Bermuda	BCMC			200		200
185158	Bermuda	BCMC			200		200
227592	Bermuda	BCMC			200		200
270652	Bermuda	BCMC			200		200
335995	Bermuda	BCMC			200		200
110954	Bermuda	BCMC			200		200
315704	Bermuda	BCMC			200		200
203376	Bermuda	BCMC			200		200
157598	Bermuda	BCMC			200		200
211411	Bermuda	BCMC			200		200
294335	Bermuda	BCMC				200	200
311810	Bermuda	BCMC			200		200
333033	Bermuda	BCMC			200		200
218904	Bermuda	BCMC		200			200
206781	Bermuda	BCMC		200			200
218871	Bermuda	BCMC		200			200
201200	Bermuda	BCMC			200		200
253177	Bermuda	BCMC			200		200
293074	Bermuda	BCMC			200		200
160474	Bermuda	BCMC			200		200
174959	Bermuda	BCMC			200		200
145362	Bermuda	SCMC			200		200
279554	Bermuda	SCMC			200		200
128316	Bermuda	SCMC			200		200
279555	Bermuda	SCMC			400		400
101842	Bermuda	SCMC			200		200
278189	Bermuda	SCMC			200		200
260137	Bermuda	SCMC			200		200
312770	Bermuda	SCMC			200		200
259491	Bermuda	SCMC			400		400
211500	Bermuda	SCMC			400		400
212178	Bermuda	SCMC			400		400
279713	Bermuda	SCMC			400		400
204082	Bermuda	SCMC			400		400
297005	Bermuda	SCMC			400		400
260138	Bermuda	SCMC			400		400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
102007	Bermuda	SCMC			400		400
230971	Bermuda	SCMC			400		400
117127	Bermuda	SCMC			400		400
260139	Bermuda	SCMC			400		400
297007	Bermuda	SCMC			400		400
297006	Bermuda	SCMC			400		400
158264	Bermuda	SCMC			400		400
296850	Bermuda	SCMC			400		400
211409	Bermuda	SCMC			200		200
117044	Bermuda	SCMC			200		200
202812	Bermuda	SCMC			200		200
211408	Bermuda	SCMC			200		200
314084	Bermuda	SCMC			200		200
143484	Bermuda	SCMC			200		200
203393	Bermuda	SCMC			200		200
307953	Bermuda	SCMC			200		200
325123	Bermuda	SCMC			400		400
325122	Bermuda	SCMC			400		400
172396	Bermuda	SCMC			400		400
191384	Bermuda	SCMC			400		400
335573	Bermuda	SCMC			200		200
220680	Bermuda	SCMC			200		200
172397	Bermuda	SCMC			400		400
155918	Bermuda	SCMC			400		400
127909	Bermuda	SCMC			400		400
104775	Bermuda	SCMC			200		200
287212	Bermuda	SCMC			400		400
127910	Bermuda	SCMC			400		400
307954	Bermuda	SCMC			400		400
321306	Bermuda	SCMC			400		400
167991	Bermuda	SCMC			400		400
284250	Bermuda	SCMC			400		400
265223	Bermuda	SCMC			400		400
264686	Bermuda	SCMC			400		400
115302	Bermuda	SCMC			400		400
253178	Bermuda	SCMC			400		400
187101	Bermuda	SCMC			400		400
253179	Bermuda	SCMC			400		400
187102	Bermuda	SCMC			400		400
245138	Bermuda	SCMC			400		400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
321307	Bermuda	SCMC			400		400
227844	Bermuda	SCMC			400		400
127089	Bermuda	SCMC			400		400
267594	Bermuda	SCMC			200		200
267593	Bermuda	SCMC			400		400
246870	Bermuda	SCMC			400		400
138234	Bermuda	SCMC			400		400
144205	Bermuda	SCMC			400		400
144204	Bermuda	SCMC			400		400
190214	Bermuda	SCMC			400		400
238872	Bermuda	SCMC			400		400
185159	Bermuda	SCMC			400		400
318431	Bermuda	SCMC			400		400
258907	Bermuda	SCMC			400		400
128240	Bermuda	SCMC			400		400
277446	Bermuda	SCMC			400		400
117075	Bermuda	SCMC			400		400
230273	Bermuda	SCMC			400		400
202837	Bermuda	SCMC			400		400
258908	Bermuda	SCMC			400		400
277447	Bermuda	SCMC			400		400
222987	Bermuda	SCMC			400		400
117088	Bermuda	SCMC			400		400
203358	Bermuda	SCMC			400		400
157554	Bermuda	SCMC			400		400
201363	Bermuda	SCMC			400		400
294296	Bermuda	SCMC			400		400
172128	Bermuda	SCMC			400		400
201362	Bermuda	SCMC			400		400
202816	Bermuda	SCMC			400		400
203396	Bermuda	SCMC			400		400
326124	Bermuda	SCMC			400		400
157579	Bermuda	SCMC			400		400
115931	Bermuda	SCMC			400		400
100643	Bermuda	SCMC			400		400
115930	Bermuda	SCMC			400		400
115929	Bermuda	SCMC			400		400
157517	Bermuda	SCMC			400		400
223530	Bermuda	SCMC			400		400
296853	Bermuda	SCMC			400		400

Marathon Claims Held by Generation PGM Inc.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
157578	Bermuda	SCMC			400		400
172130	Bermuda	SCMC			400		400
172129	Bermuda	SCMC			400		400
324110	Bermuda	SCMC			400		400
115932	Bermuda	SCMC			400		400
157518	Bermuda	SCMC			400		400
100644	Bermuda	SCMC			200		200
324111	Bermuda	SCMC			200		200
311393	Bermuda	SCMC			200		200
296264	Bermuda	SCMC			200		200
296263	Bermuda	SCMC			400		400
100403	Bermuda	SCMC			400		400
296262	Bermuda	SCMC			400		400
258881	Bermuda	SCMC			400		400
163527	Bermuda	SCMC			400		400
314013	Bermuda	SCMC			400		400
100404	Bermuda	SCMC			400		400
258882	Bermuda	SCMC			400		400
230235	Bermuda	SCMC			400		400
143407	Bermuda	SCMC			200		200
258883	Bermuda	SCMC			200		200
157519	Bermuda	SCMC			200		200
302679	Bermuda	SCMC			400		400
266814	Bermuda	SCMC			400		400
286892	Bermuda	SCMC			400		400
302678	Bermuda	SCMC			400		400
118164	Bermuda	SCMC			400		400
125696	Bermuda	SCMC			400		400
200190	Bermuda	SCMC			400		400
200189	Bermuda	SCMC			400		400
125598	Bermuda	SCMC			400		400
266224	Bermuda	SCMC			400		400
189077	Bermuda	SCMC			400		400
302680	Bermuda	SCMC			400		400
310710	Bermuda	SCMC			400		400
286893	Bermuda	SCMC			400		400
293073	Bermuda	SCMC			400		400
226446	Bermuda	SCMC			400		400
286894	Bermuda	SCMC			400		400
125697	Bermuda	SCMC			400		400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
266225	Bermuda	SCMC			400		400
208218	Bermuda	SCMC			400		400
153675	Bermuda	SCMC			400		400
249206	Bermuda	SCMC			400		400
212500	Bermuda	SCMC			400		400
181526	Bermuda	SCMC			400		400
256300	Bermuda	SCMC			400		400
292968	Bermuda	SCMC			400		400
256301	Bermuda	SCMC			400		400
188962	Bermuda	SCMC			400		400
237633	Bermuda	SCMC			400		400
188963	Bermuda	SCMC			400		400
311684	Bermuda	SCMC			400		400
267767	Bermuda	SCMC			400		400
157575	Bermuda	SCMC			400		400
100487	Bermuda	SCMC			400		400
314083	Bermuda	SCMC			400		400
128288	Bermuda	SCMC			400		400
168575	Bermuda	SCMC			400		400
168574	Bermuda	SCMC			400		400
321388	Bermuda	SCMC			400		400
277495	Bermuda	SCMC			400		400
211483	Bermuda	SCMC			400		400
100488	Bermuda	SCMC			400		400
203391	Bermuda	SCMC			400		400
112617	Bermuda	SCMC			400		400
198544	Bermuda	SCMC			400		400
265300	Bermuda	SCMC			400		400
230299	Bermuda	SCMC			400		400
117128	Bermuda	SCMC			400		400
326119	Bermuda	SCMC			400		400
128289	Bermuda	SCMC			400		400
223525	Bermuda	SCMC			400		400
332703	Bermuda	SCMC			400		400
133075	Bermuda	SCMC			400		400
111199	Bermuda	SCMC			400		400
271263	Bermuda	SCMC			400		400
244476	Bermuda	SCMC			400		400
244475	Bermuda	SCMC			400		400
318485	Bermuda	SCMC			400		400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
186414	Bermuda	SCMC			400		400
133076	Bermuda	SCMC			400		400
128294	Bermuda	SCMC			400		400
128293	Bermuda	SCMC			400		400
211485	Bermuda	SCMC			400		400
296854	Bermuda	SCMC			400		400
259470	Bermuda	SCMC			400		400
163608	Bermuda	SCMC			400		400
277499	Bermuda	SCMC			400		400
279026	Bermuda	SCMC			200		200
163588	Bermuda	SCMC			400		400
314067	Bermuda	SCMC			400		400
100470	Bermuda	SCMC			200		200
143485	Bermuda	SCMC			200		200
326107	Bermuda	SCMC			400		400
211461	Bermuda	SCMC			400		400
279009	Bermuda	SCMC			200		200
326123	Bermuda	SCMC			400		400
230300	Bermuda	SCMC			400		400
203392	Bermuda	SCMC			200		200
277412	Bermuda	SCMC			400		400
211410	Bermuda	SCMC			400		400
202813	Bermuda	SCMC			400		400
203375	Bermuda	SCMC			200		200
279008	Bermuda	SCMC			200		200
100469	Bermuda	SCMC			200		200
223004	Bermuda	SCMC			200		200
326105	Bermuda	SCMC			200		200
211460	Bermuda	SCMC			200		200
222953	Bermuda	SCMC			200		200
163521	Bermuda	SCMC			200		200
296255	Bermuda	SCMC			400		400
278948	Bermuda	SCMC			400		400
143471	Bermuda	SCMC			400		400
258945	Bermuda	SCMC			400		400
128266	Bermuda	SCMC			400		400
163587	Bermuda	SCMC			400		400
143470	Bermuda	SCMC			400		400
258876	Bermuda	SCMC			200		200
324021	Bermuda	SCMC			400		400

Marathon Claims Held by Generation PGM Inc.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
255852	Bermuda	SCMC			400		400
113254	Bermuda	SCMC			400		400
311808	Bermuda	SCMC			400		400
334438	Bermuda	SCMC			400		400
141991	Bermuda	SCMC			400		400
170727	Bermuda	SCMC			400		400
311809	Bermuda	SCMC			400		400
334440	Bermuda	SCMC			400		400
112618	Bermuda	SCMC			400		400
272535	Bermuda	SCMC			400		400
272029	Bermuda	SCMC			400		400
187185	Bermuda	SCMC			400		400
109766	Bermuda	SCMC				400	400
155029	Bermuda	SCMC				400	400
238984	Bermuda	SCMC				200	200
127090	Bermuda	SCMC				200	200
137727	Bermuda	SCMC				400	400
127088	Bermuda	SCMC				400	400
194327	Bermuda	SCMC				400	400
296077	Bermuda	SCMC				400	400
109473	Bermuda	SCMC				400	400
194326	Bermuda	SCMC				400	400
312953	Bermuda	SCMC				400	400
248941	Bermuda	SCMC				400	400
194328	Bermuda	SCMC				400	400
228080	Bermuda	SCMC				400	400
228079	Bermuda	SCMC				400	400
312954	Bermuda	SCMC				400	400
140278	Bermuda	SCMC				400	400
140277	Bermuda	SCMC				400	400
140276	Bermuda	SCMC				400	400
211039	Bermuda	SCMC				400	400
312955	Bermuda	SCMC				400	400
208679	Bermuda	BCMC		200			200
333503	Bermuda	BCMC			200		200
208680	Bermuda	BCMC		200			200
319326	Bermuda	BCMC			200		200
272575	Bermuda	SCMC				400	400
197295	Bermuda	SCMC				400	400
252487	Bermuda	SCMC				400	400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
196627	Bermuda	SCMC				400	400
204589	Bermuda	SCMC				400	400
175751	Bermuda	SCMC				400	400
153966	Bermuda	SCMC				400	400
321951	Bermuda	SCMC				400	400
198581	Bermuda	SCMC				400	400
319050	Bermuda	SCMC				400	400
301213	Bermuda	SCMC				400	400
152718	Bermuda	SCMC				400	400
153967	Bermuda	SCMC				400	400
272576	Bermuda	SCMC				400	400
331269	Bermuda	SCMC				400	400
152719	Bermuda	SCMC				400	400
149742	Bermuda	SCMC				400	400
245049	Bermuda	SCMC				200	200
274675	Bermuda	BCMC		200			200
133879	Bermuda	BCMC		200			200
206113	Bermuda	BCMC			200		200
253790	Bermuda	BCMC		200			200
208665	Bermuda	BCMC				200	200
220721	Bermuda	BCMC		200			200
133149	Bermuda	BCMC				200	200
111266	Bermuda	SCMC				400	400
149743	Bermuda	SCMC				400	400
264613	Bermuda	SCMC				200	200
287592	Bermuda	BCMC				200	200
143403	Bermuda	BCMC			200		200
311416	Bermuda	SCMC				400	400
294334	Bermuda	SCMC				400	400
114818	Bermuda	SCMC				400	400
228286	Bermuda	SCMC				200	200
324139	Bermuda	SCMC				400	400
209450	Bermuda	SCMC				400	400
228285	Bermuda	SCMC				400	400
172155	Bermuda	SCMC				400	400
257480	Bermuda	SCMC				400	400
155571	Bermuda	SCMC				400	400
221527	Bermuda	SCMC				400	400
155570	Bermuda	SCMC				400	400
287593	Bermuda	SCMC				400	400

Marathon Claims Held by Generation PGM Inc.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
190215	Bermuda	SCMC				400	400
344937	Bermuda	SCMC				400	400
144206	Bermuda	SCMC				400	400
218108	Bermuda	SCMC				400	400
300505	Bermuda	SCMC				400	400
151994	Bermuda	SCMC				400	400
111326	Bermuda	SCMC				400	400
318432	Bermuda	SCMC				400	400
271264	Bermuda	SCMC				400	400
252486	Bermuda	SCMC				400	400
263844	Bermuda	SCMC				400	400
151995	Bermuda	SCMC				400	400
263843	Bermuda	SCMC				400	400
303512	Bermuda	BCMC				200	200
172398	Bermuda	BCMC				200	200
139377	Bermuda	BCMC			200		200
235333	Bermuda	BCMC				200	200
128220	Bermuda	BCMC				200	200
143404	Bermuda	SCMC				400	400
157516	Bermuda	SCMC				400	400
279025	Bermuda	SCMC				400	400
216734	Bermuda	BCMC				200	200
211413	Bermuda	BCMC				200	200
158913	Bermuda	BCMC			200		200
211412	Bermuda	SCMC				200	200
325555	Bermuda	SCMC				200	200
326122	Bermuda	SCMC				400	400
296852	Bermuda	SCMC				400	400
259468	Bermuda	SCMC				200	200
223527	Bermuda	SCMC				200	200
157577	Bermuda	BCMC				200	200
296254	Bermuda	BCMC				200	200
554561	Bermuda	SCMC			400		400
554562	Bermuda	SCMC			400		400
554563	Bermuda	SCMC			400		400
554564	Bermuda	SCMC			400		400
554565	Bermuda	SCMC			400		400
554566	Bermuda	SCMC			400		400
554567	Bermuda	SCMC			400		400
554568	Bermuda	SCMC			400		400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
554569	Bermuda	SCMC			400		400
554570	Bermuda	SCMC			400		400
554571	Bermuda	SCMC			400		400
554572	Bermuda	SCMC			400		400
554573	Bermuda	SCMC			400		400
554574	Bermuda	SCMC			400		400
554575	Bermuda	SCMC			400		400
554576	Bermuda	SCMC			400		400
554577	Bermuda	SCMC			400		400
554578	Bermuda	SCMC			400		400
554579	Bermuda	SCMC			400		400
554580	Bermuda	SCMC			400		400
554581	Bermuda	SCMC			400		400
554582	Bermuda	SCMC			400		400
554583	Bermuda	SCMC			400		400
554584	Bermuda	SCMC			400		400
554585	Bermuda	SCMC			400		400
554586	Bermuda	SCMC			400		400
554587	Bermuda	SCMC			400		400
554588	Bermuda	SCMC			400		400
554589	Bermuda	SCMC			400		400
554590	Bermuda	SCMC			400		400
554591	Bermuda	SCMC			400		400
554592	Bermuda	SCMC			400		400
554593	Bermuda	SCMC			400		400
554594	Bermuda	SCMC			400		400
554595	Bermuda	SCMC			400		400
554596	Bermuda	SCMC			400		400
554597	Bermuda	SCMC			400		400
554598	Bermuda	SCMC			400		400
554599	Bermuda	SCMC			400		400
554600	Bermuda	SCMC			400		400
554601	Bermuda	SCMC			400		400
554602	Bermuda	SCMC			400		400
554603	Bermuda	SCMC			400		400
554604	Bermuda	SCMC			400		400
554605	Bermuda	SCMC			400		400
554606	Bermuda	SCMC			400		400
554607	Bermuda	SCMC			400		400
554608	Bermuda	SCMC			400		400

Marathon Claims Held by Generation PGM Inc.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
554609	Bermuda	SCMC			400		400
554610	Bermuda	SCMC			400		400
554611	Bermuda	SCMC			400		400
554612	Bermuda	SCMC			400		400
554613	Bermuda	SCMC			400		400
554614	Bermuda	SCMC			400		400
554615	Bermuda	SCMC			400		400
554616	Bermuda	SCMC			400		400
554617	Bermuda	SCMC			400		400
554618	Bermuda	SCMC			400		400
554619	Bermuda	SCMC			400		400
554620	Bermuda	SCMC			400		400
554621	Bermuda	SCMC			400		400
554622	Bermuda	SCMC			400		400
554623	Bermuda	SCMC			400		400
554624	Bermuda	SCMC			400		400
554625	Bermuda	SCMC			400		400
554626	Bermuda	SCMC			400		400
554627	Bermuda	SCMC			400		400
554628	Bermuda	SCMC			400		400
554629	Bermuda	SCMC			400		400
554630	Bermuda	SCMC			400		400
554631	Bermuda	SCMC			400		400
554632	Bermuda	SCMC			400		400
554633	Bermuda	SCMC			400		400
554634	Bermuda	SCMC			400		400
554635	Bermuda	SCMC			400		400
554636	Bermuda	SCMC			400		400
554637	Bermuda	SCMC			400		400
554638	Bermuda	SCMC			400		400
326106	Geordie	BCMC			200		200
128291	Geordie	BCMC			200		200
277477	Geordie	BCMC			200		200
128290	Geordie	BCMC			200		200
128317	Geordie	BCMC			200		200
296851	Geordie	BCMC			200		200
157561	Geordie	BCMC			200		200
277497	Geordie	BCMC			200		200
163629	Geordie	BCMC			200		200
211484	Geordie	BCMC			200		200

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
259492	Geordie	BCMC			200		200
177740	Geordie	BCMC				200	200
143483	Geordie	BCMC			200		200
102006	Geordie	BCMC				200	200
277478	Geordie	BCMC			200		200
164285	Geordie	BCMC				200	200
143472	Geordie	BCMC			200		200
258946	Geordie	BCMC			200		200
277496	Geordie	BCMC				200	200
145363	Geordie	SCMC			400		400
172157	Geordie	SCMC			400		400
325554	Geordie	SCMC			400		400
128217	Geordie	SCMC			400		400
277413	Geordie	SCMC			400		400
128218	Geordie	SCMC			400		400
157515	Geordie	SCMC			400		400
277414	Geordie	SCMC			400		400
296257	Geordie	SCMC			400		400
296256	Geordie	SCMC			400		400
157537	Geordie	SCMC			400		400
296297	Geordie	SCMC			400		400
296296	Geordie	SCMC			400		400
277445	Geordie	SCMC			400		400
230249	Geordie	SCMC			400		400
296295	Geordie	SCMC			400		400
157538	Geordie	SCMC			400		400
230250	Geordie	SCMC			400		400
100427	Geordie	SCMC			400		400
325573	Geordie	SCMC			400		400
325557	Geordie	SCMC			400		400
211416	Geordie	SCMC			400		400
117047	Geordie	SCMC			400		400
172160	Geordie	SCMC			400		400
311421	Geordie	SCMC			400		400
275491	Geordie	SCMC			400		400
325427	Geordie	SCMC			400		400
156876	Geordie	SCMC			400		400
127580	Geordie	SCMC			400		400
258266	Geordie	SCMC			400		400
294340	Geordie	SCMC			400		400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
257483	Geordie	SCMC			400		400
144771	Geordie	SCMC			400		400
222317	Geordie	SCMC			400		400
295623	Geordie	SCMC			400		400
172159	Geordie	SCMC			400		400
201400	Geordie	SCMC			400		400
278950	Geordie	SCMC			400		400
296267	Geordie	SCMC			400		400
296266	Geordie	SCMC			400		400
128219	Geordie	SCMC			400		400
278951	Geordie	SCMC			400		400
325559	Geordie	SCMC			400		400
325558	Geordie	SCMC			400		400
258877	Geordie	SCMC			400		400
128221	Geordie	SCMC			400		400
230236	Geordie	SCMC			400		400
296268	Geordie	SCMC			400		400
314014	Geordie	SCMC			400		400
275490	Geordie	SCMC			400		400
117129	Geordie	SCMC			400		400
143480	Geordie	SCMC			400		400
163605	Geordie	SCMC			400		400
143481	Geordie	SCMC			400		400
279024	Geordie	SCMC			400		400
326121	Geordie	SCMC			400		400
287595	Geordie	BCMC				200	200
230234	Geordie	BCMC				200	200
311420	Geordie	SCMC				400	
155574	Geordie	SCMC				400	
155573	Geordie	SCMC				400	
210762	Geordie	SCMC				400	
115085	Geordie	SCMC				400	
325426	Geordie	SCMC				400	
229575	Geordie	SCMC				400	
224325	Geordie	BCMC				200	200
277498	Geordie	BCMC			200		200
314738	Geordie	BCMC				200	200
163606	Geordie	BCMC			200		200
177739	Geordie	BCMC				200	200
157576	Geordie	BCMC			200		200

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
177741	Geordie	SCMC				400	
314739	Geordie	SCMC				400	
102120	Geordie	SCMC				400	
268281	Geordie	SCMC				400	
116475	Geordie	SCMC				400	
212816	Geordie	SCMC				400	
164907	Geordie	SCMC				400	
202814	Geordie	BCMC				200	200
126273	Geordie	BCMC				200	200
128315	Geordie	SCMC				400	400
296265	Geordie	SCMC				400	400
221530	Geordie	SCMC				400	400
221529	Geordie	SCMC				400	400
230316	Geordie	SCMC				400	400
172158	Geordie	SCMC				400	400
211415	Geordie	SCMC				400	400
142801	Geordie	SCMC				400	400
100401	Geordie	SCMC				400	400
277416	Geordie	SCMC				400	400
100402	Geordie	SCMC				400	400
296259	Geordie	SCMC				400	400
314010	Geordie	BCMC				200	200
142802	Geordie	BCMC			200		200
163524	Geordie	SCMC				400	400
163523	Geordie	SCMC				400	400
145505	Geordie	SCMC				400	400
224203	Geordie	SCMC				400	400
164286	Geordie	SCMC				400	400
277415	Geordie	SCMC				400	400
296258	Geordie	SCMC				400	400
194148	Geordie	BCMC				200	200
100400	Geordie	BCMC				200	200
278949	Geordie	SCMC				400	400
163522	Geordie	SCMC				400	400
314009	Geordie	BCMC				200	200
231613	Geordie	BCMC				200	200
297004	Geordie	SCMC				400	400
128992	Geordie	SCMC				400	400
163604	Geordie	SCMC				400	400
145506	Geordie	SCMC				400	400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
212177	Geordie	SCMC				400	400
143482	Geordie	SCMC				400	400
231612	Geordie	BCMC				200	200
128993	Geordie	BCMC				200	200
164287	Geordie	BCMC				200	200
280334	Geordie	BCMC				200	200
116474	Geordie	BCMC				200	200
117130	Geordie	BCMC				200	200
206776	Marathon	BCMC		200			200
150705	Marathon	BCMC		200			200
198766	Marathon	BCMC		200			200
198765	Marathon	BCMC		200			200
275834	Marathon	BCMC		200			200
151252	Marathon	BCMC		200			200
303281	Marathon	BCMC		200			200
206112	Marathon	BCMC		200			200
252582	Marathon	BCMC		200			200
168857	Marathon	BCMC		200			200
321231	Marathon	BCMC			200		200
156036	Marathon	BCMC		200			200
150675	Marathon	BCMC			200		200
150706	Marathon	BCMC		200			200
134699	Marathon	BCMC		200			200
156037	Marathon	BCMC		200			200
265224	Marathon	BCMC			200		200
218903	Marathon	BCMC			200		200
321501	Marathon	BCMC			200		200
149843	Marathon	BCMC			200		200
235551	Marathon	BCMC		200			200
265368	Marathon	BCMC		200			200
206780	Marathon	BCMC		200			200
303280	Marathon	BCMC		200			200
271359	Marathon	BCMC		200			200
111269	Marathon	BCMC		200			200
133150	Marathon	BCMC		200			200
143275	Marathon	BCMC		200			200
143276	Marathon	BCMC		200			200
137830	Marathon	BCMC		200			200
275986	Marathon	BCMC		200			200
334721	Marathon	BCMC		200			200

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
239825	Marathon	BCMC			200		200
171947	Marathon	BCMC				200	200
319364	Marathon	BCMC		200			200
344487	Marathon	BCMC			200		200
136420	Marathon	BCMC			200		200
190289	Marathon	BCMC			200		200
231905	Marathon	BCMC				200	200
305685	Marathon	BCMC			200		200
208560	Marathon	BCMC			200		200
190290	Marathon	BCMC			200		200
304952	Marathon	BCMC			200		200
208479	Marathon	BCMC			200		200
241555	Marathon	BCMC				200	200
256297	Marathon	BCMC			200		200
316784	Marathon	BCMC				200	200
188960	Marathon	BCMC			200		200
279909	Marathon	BCMC				200	200
321671	Marathon	BCMC				200	200
211645	Marathon	BCMC				200	200
292966	Marathon	BCMC			200		200
177294	Marathon	BCMC				200	200
344056	Marathon	BCMC			200		200
207625	Marathon	BCMC			200		200
182471	Marathon	BCMC			200		200
125046	Marathon	BCMC			200		200
312532	Marathon	BCMC				200	200
153038	Marathon	BCMC			200		200
256568	Marathon	BCMC				200	200
125045	Marathon	BCMC			200		200
218898	Marathon	BCMC		200			200
303284	Marathon	BCMC		200			200
167917	Marathon	BCMC			200		200
143274	Marathon	BCMC		200			200
331274	Marathon	BCMC		200			200
272852	Marathon	BCMC		200			200
137814	Marathon	BCMC		200			200
197873	Marathon	BCMC		200			200
137815	Marathon	BCMC		200			200
305787	Marathon	BCMC		200			200
157365	Marathon	BCMC		200			200

Marathon Claims Held by Generation PGM Inc.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
312531	Marathon	BCMC			200		200
172007	Marathon	BCMC		200			200
238569	Marathon	BCMC			200		200
321504	Marathon	BCMC		200			200
334400	Marathon	BCMC			200		200
206782	Marathon	BCMC		200			200
206778	Marathon	BCMC		200			200
198767	Marathon	BCMC		200			200
115328	Marathon	BCMC		200			200
303288	Marathon	BCMC		200			200
265367	Marathon	BCMC		200			200
198810	Marathon	BCMC		200			200
306361	Marathon	BCMC		200			200
333840	Marathon	BCMC		200			200
303325	Marathon	BCMC		200			200
332804	Marathon	BCMC		200			200
168858	Marathon	BCMC		200			200
245073	Marathon	BCMC			200		200
218935	Marathon	BCMC		200			200
153437	Marathon	BCMC		200			200
275572	Marathon	BCMC		200			200
244404	Marathon	SCMC			200		200
244406	Marathon	SCMC			200		200
111129	Marathon	SCMC			200		200
149086	Marathon	SCMC			200		200
263948	Marathon	SCMC			200		200
111130	Marathon	SCMC			200		200
169511	Marathon	SCMC		400			400
218899	Marathon	SCMC		400			400
321498	Marathon	SCMC		400			400
150704	Marathon	SCMC		400			400
303307	Marathon	SCMC			400		400
319892	Marathon	SCMC			200		200
150019	Marathon	SCMC		400			400
218239	Marathon	SCMC		200			200
318699	Marathon	SCMC		200			200
218238	Marathon	SCMC		200			200
153454	Marathon	SCMC		400			400
284928	Marathon	SCMC		400			400
319891	Marathon	SCMC		200			200

Marathon Claims Held by Generation PGM Inc.							
Claim ID	Project	Title Type	Amount Required Per Year ($)				Work Required ($)
			2018	2020	2021	2022	
198788	Marathon	SCMC		200			200
169535	Marathon	SCMC		400			400
226190	Marathon	SCMC		400			400
303306	Marathon	SCMC		400			400
150721	Marathon	SCMC		200			200
133241	Marathon	SCMC		200			200
284929	Marathon	SCMC			400		400
198789	Marathon	SCMC			200		200
133242	Marathon	SCMC			400		400
226191	Marathon	SCMC			400		400
153455	Marathon	SCMC			200		200
169536	Marathon	SCMC			200		200
235550	Marathon	SCMC			400		400
153442	Marathon	SCMC			400		400
319367	Marathon	SCMC			400		400
206779	Marathon	SCMC			400		400
167896	Marathon	SCMC		200			200
201997	Marathon	SCMC		200			200
239824	Marathon	SCMC		200			200
172029	Marathon	SCMC			200		200
110624	Marathon	SCMC			400		400
291532	Marathon	SCMC			400		400
256377	Marathon	SCMC			200		200
156595	Marathon	SCMC			200		200
343752	Marathon	SCMC			200		200
256376	Marathon	SCMC			200		200
136421	Marathon	SCMC			200		200
304953	Marathon	SCMC			400		400
156596	Marathon	SCMC			400		400
110625	Marathon	SCMC			200		200
267833	Marathon	SCMC			200		200
181593	Marathon	SCMC			200		200
311766	Marathon	SCMC			200		200
136423	Marathon	SCMC			200		200
274443	Marathon	SCMC			400		400
304954	Marathon	SCMC			200		200
201721	Marathon	SCMC			200		200
142476	Marathon	SCMC			200		200
304955	Marathon	SCMC			200		200
343753	Marathon	SCMC			200		200

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
189033	Marathon	SCMC			200		200
258497	Marathon	SCMC			200		200
202469	Marathon	SCMC			200		200
143683	Marathon	SCMC			400		400
275150	Marathon	SCMC			400		400
275149	Marathon	SCMC			200		200
202470	Marathon	SCMC			200		200
257105	Marathon	SCMC			400		400
257104	Marathon	SCMC			400		400
292967	Marathon	SCMC			200		200
156527	Marathon	SCMC			400		400
201139	Marathon	SCMC			400		400
272850	Marathon	SCMC		400			400
226249	Marathon	SCMC		200			200
115388	Marathon	SCMC		200			200
206848	Marathon	SCMC		200			200
151304	Marathon	SCMC		200			200
206849	Marathon	SCMC		400			400
272851	Marathon	SCMC		200			200
333922	Marathon	SCMC		400			400
115389	Marathon	SCMC		200			200
273036	Marathon	SCMC			400		400
169673	Marathon	SCMC			400		400
321670	Marathon	SCMC			400		400
265583	Marathon	SCMC			400		400
102686	Marathon	SCMC			400		400
273037	Marathon	SCMC			400		400
182470	Marathon	SCMC			200		200
207624	Marathon	SCMC			200		200
235555	Marathon	SCMC		400			400
235554	Marathon	SCMC		400			400
321502	Marathon	SCMC		400			400
303285	Marathon	SCMC		400			400
272770	Marathon	SCMC		400			400
272769	Marathon	SCMC		400			400
218906	Marathon	SCMC		400			400
325307	Marathon	SCMC		200			200
256609	Marathon	SCMC		200			200
275976	Marathon	SCMC		200			200
334720	Marathon	SCMC		400			400

Marathon Claims Held by Generation PGM Inc.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
312583	Marathon	SCMC		400			400
312582	Marathon	SCMC		200			200
222041	Marathon	SCMC		400			400
258012	Marathon	SCMC		200			200
272774	Marathon	SCMC		400			400
272773	Marathon	SCMC		400			400
265370	Marathon	SCMC		400			400
235557	Marathon	SCMC		400			400
134734	Marathon	SCMC		400			400
321505	Marathon	SCMC		400			400
226211	Marathon	SCMC		400			400
170062	Marathon	SCMC		400			400
285451	Marathon	SCMC		400			400
333883	Marathon	SCMC		400			400
133265	Marathon	SCMC		400			400
319903	Marathon	SCMC		400			400
218936	Marathon	SCMC		400			400
151253	Marathon	SCMC		400			400
333884	Marathon	SCMC		400			400
271336	Marathon	BCMC		200			200
185177	Marathon	BCMC			200		200
303095	Marathon	BCMC				200	200
167893	Marathon	BCMC		200			200
149085	Marathon	BCMC			200		200
149084	Marathon	SCMC			200		200
111128	Marathon	SCMC			400		400
285633	Marathon	SCMC				400	400
321672	Marathon	SCMC				400	400
111125	Marathon	BCMC				200	200
109585	Marathon	BCMC				200	200
315645	Marathon	SCMC				400	400
241554	Marathon	SCMC				400	400
175440	Marathon	SCMC				400	400
230024	Marathon	SCMC				400	400
192910	Marathon	SCMC				400	400
140916	Marathon	BCMC				200	200
194455	Marathon	SCMC				400	400
249564	Marathon	SCMC				400	400
140918	Marathon	SCMC				400	400
140917	Marathon	BCMC				200	200

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
308905	Marathon	SCMC				200	200
175441	Marathon	BCMC				200	200
311680	Marathon	BCMC			200		200
181524	Marathon	BCMC			200		200
129383	Marathon	BCMC				200	200
300157	Marathon	SCMC				200	200
201140	Marathon	BCMC			200		200
132075	Marathon	BCMC				200	200
136344	Marathon	BCMC			200		200
132074	Marathon	BCMC				200	200
231906	Marathon	BCMC				200	200
305684	Marathon	BCMC			200		200
177295	Marathon	SCMC				200	200
223863	Marathon	SCMC				200	200
250880	Marathon	SCMC				200	200
338880	Marathon	SCMC				400	400
152066	Marathon	BCMC				200	200
301081	Marathon	SCMC				200	200
132483	Marathon	SCMC				400	400
267762	Marathon	SCMC				400	400
152067	Marathon	SCMC				200	200
132485	Marathon	SCMC				200	200
132484	Marathon	SCMC				200	200
256294	Marathon	SCMC				400	400
167251	Marathon	SCMC				200	200
337992	Marathon	SCMC				400	400
149078	Marathon	SCMC				400	400
188956	Marathon	SCMC				400	400
208477	Marathon	BCMC				200	200
274532	Marathon	BCMC				200	200
332647	Marathon	SCMC				200	200
318427	Marathon	SCMC				400	400
252422	Marathon	SCMC				400	400
311676	Marathon	SCMC				400	400
143049	Marathon	BCMC				200	200
142403	Marathon	BCMC				200	200
157801	Marathon	SCMC				200	200
238413	Marathon	SCMC				400	400
209781	Marathon	SCMC				400	400
292965	Marathon	SCMC				400	400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
323980	Marathon	SCMC				400	400
207242	Marathon	BCMC		200			200
149744	Marathon	BCMC				200	200
136479	Marathon	SCMC				400	400
169277	Marathon	SCMC				200	200
273230	Marathon	SCMC				200	200
187736	Marathon	BCMC		200			200
244405	Marathon	BCMC			200		200
200673	Marathon	SCMC				200	200
170694	Marathon	SCMC				200	200
208681	Marathon	BCMC			200		200
115334	Marathon	BCMC		200			200
323981	Marathon	SCMC				200	200
237770	Marathon	SCMC				200	200
220737	Marathon	BCMC		200			200
265451	Marathon	BCMC		200			200
156038	Marathon	BCMC		200			200
272849	Marathon	BCMC		200			200
235553	Marathon	BCMC		200			200
136480	Marathon	BCMC		200			200
186486	Marathon	BCMC		200			200
169276	Marathon	BCMC				200	200
343821	Marathon	BCMC				200	200
331128	Marathon	BCMC				200	200
137000	Marathon	BCMC				200	200
156521	Marathon	BCMC				200	200
189626	Marathon	SCMC				400	400
110708	Marathon	SCMC				400	400
256295	Marathon	BCMC				200	200
137001	Marathon	BCMC				200	200
182191	Marathon	SCMC				200	200
245070	Marathon	SCMC		400			400
271358	Marathon	SCMC		400			400
332802	Marathon	SCMC		400			400
205353	Marathon	SCMC			400		400
149760	Marathon	SCMC			400		400
152744	Marathon	SCMC		400			400
264637	Marathon	SCMC		400			400
152743	Marathon	SCMC		400			400
133166	Marathon	SCMC			400		400

MARATHON CLAIMS HELD BY GENERATION PGM INC.							
Claim ID	**Project**	**Title Type**	**Amount Required Per Year ($)**				**Work Required ($)**
			2018	**2020**	**2021**	**2022**	
152742	Marathon	SCMC			400		400
245072	Marathon	SCMC			400		400
321230	Marathon	SCMC			400		400
332803	Marathon	SCMC			200		200
245071	Marathon	SCMC			400		400
264638	Marathon	BCMC		200			200
264684	Marathon	BCMC		200			200
171948	Marathon	SCMC				200	200
285632	Marathon	BCMC			200		200
137248	Marathon	BCMC				200	200
265584	Marathon	BCMC			200		200
132456	Marathon	BCMC				200	200
238266	Marathon	BCMC				200	200
142402	Marathon	BCMC				200	200
337986	Marathon	BCMC				200	200
188413	Marathon	BCMC				200	200
167246	Marathon	BCMC				200	200
257853	Marathon	BCMC				200	200
238570	Marathon	BCMC		200			200
312584	Marathon	BCMC		200			200