Report to:

POLYMET MINING CORP.

Technical Report on the NorthMet Deposit, Minnesota, USA

Project No. 0728700101-REP-L0002-02

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TECHNICAL REPORT ON THE NORTHMET DEPOSIT, MINNESOTA, USA

SEPTEMBER 2007

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1.0 SUMMARY

This report describes the results of a mineral resource estimation update of the NorthMet polymetallic copper-nickel-cobalt-platinum group element (Cu-Ni-Co-PGE) deposit which is leased by PolyMet Mining Corp. (PolyMet), a Vancouver Canada-based company. This revision and update of the 2005 National Instrument 43-101 (NI 43-101) compliant Resource report (Hellman, 2005) and the 2006 NI 43-101 compliant Feasibility report (Hunter, 2006) is based on the inclusion of results from 30 diamond drill holes completed between February and March 2007.

The full 2007 winter drilling program included 47 drill holes for 19,102.5 feet (ft). All but three holes of this program targeted expansion and better definition of the main ore zones at the west end of the property. At the time of this resource estimate (May 25, 2007 data file) the assays from 17 drill holes had not been returned from the laboratory. It was decided that because the locations for the missing assays were accurately known, it would be possible to use their locations for assessment of confidence in the deposit, with the grade calculation to follow at a later time.

This report is updated from earlier reports, namely Hellman 2005 and 2006, and Hunter, 2006, all of which made extensive reference to Hammond, 2005, and Patelke and Geerts, 2006. All references to resource evaluation are based on current PolyMet data; reference herein to historical information is updated from these earlier reports.

This new resource estimate by Wardrop Engineering Inc. (Wardrop) incorporates the 2006-2007 drilling results that were available as of May 25th, 2007, an extension of the block model matrix down to the 0.00 foot elevation (elev), a smaller block size than used in the Definitive Feasibility Study (DFS) based upon a selective mining unit determination, a new interpolation plan that honoured the geological features and statistical characteristics of the deposit and a new classification model.

Since the end of May, the remaining assays for the winter 2007 drill program have been returned and during June and July another 14 drill holes have been drilled in the western part of the deposit (the “summer” drill program). The impact on the resource estimate of including all 2007 drilling will be the subject of a future resource evaluation. However, except where explicitly stated otherwise, this report uses only data from the 30 drill holes whose results were available by the 25th of May, 2007.

The NorthMet Deposit is situated on a mineral lease located in St. Louis County in northeastern Minnesota, USA, at approximately Latitude 47° 36’ north, Longitude 91° 58’ west, about 70 miles north of the City of Duluth and 6.5 miles south of the town of Babbitt.

The NorthMet deposit is part of the Duluth Complex in northeastern Minnesota, which is a large, composite, grossly layered, tholeiitic mafic intrusion that was emplaced into comagmatic flood basalts along a portion of the Mesoproterozoic (Geerts, 1994) Mid-continent Rift System. NorthMet is one of eleven known copper-nickel deposits that occur along the western edge of the Duluth Complex and within the Partridge River (PRI) and South Kawishiwi (SKI) intrusions. The NorthMet deposit is hosted within the PRI, which consists of varied troctolitic and (minor) gabbroic rock types that have been subdivided into seven igneous stratigraphic units based on drill core logging.

The metals of interest at NorthMet are copper, nickel, cobalt, platinum, palladium and gold. Minor amounts of rhodium and ruthenium are also present though these are considered to have no economic significance. In general, with the exception of cobalt, the metals have strong positive correlations with copper mineralization. Cobalt is well correlated with nickel and reasonably correlated with copper.

Mineralization occurs in four broadly defined horizons throughout the NorthMet property. Three of these horizons occur dominantly within basal Unit 1. The thickness of each of the three Unit 1 enriched horizons varies from five feet to more than 200 feet. Unit 1 mineralization is found throughout the base of the deposit. The definition of the Unit 1 mineralized domain (DOM1) includes a portion of localized mineralization in the overlying Unit 2, which is merged into the top of Unit 1 for estimation purposes. A less extensive mineralized zone (Magenta Zone), slightly enriched with platinum group elements, is found in Units 4, 5, and 6 in the western part of the deposit. This is defined as a separate mineralized domain within units that are mainly barren.

Drill hole spacing averages between 200 and 215 feet in the area of the resource model. This excludes holes drilled for metallurgical or geotechnical purposes. Distance studies show that 50% of the drillhole intercepts within Unit 1 will be within a 215 foot distance from another hole. In the Magenta Zone, 50% of the drillhole intercepts will be within a 200 foot distance from another hole. The best drilled area is in the area of the preliminary DFS optimum pit. This also contains near-surface mineralization and is drilled at a spacing of about 150 feet (excluding geotechnical and metallurgical holes) from 171 holes. Fifteen percent of the assayed footage is by Reverse Circulation (six inch) drilling, with the remainder by diamond coring (BQ, NQ2, NTW, PQ and four inch).

The assay and geological database was thoroughly checked, validated and updated by PolyMet in order to provide the basis for the resource estimates reported in July 2005 (Hellman, 2005). The 2005 estimate involved the addition of several thousand new assays since previous estimates in 2001 and a re-evaluation of historical data. Examination of check assay data from previous (pre-2005) assay programs as well as from newly received data suggest that nickel and cobalt from previous drill programs are likely to have been understated by between 5% and 15% due to the previous use of an analytical method using incomplete digestion (aqua regia digestion). All assaying of samples since the 2005 drilling and sampling campaign is based on the more appropriate total digestion four acid method. The data added since the 2005 drilling and sampling campaign is well validated through both formal quality control methods and extensive review of all compiled data.

A comprehensive Quality Assurance/Quality Control (QA/QC) program involving the use of coarse blanks, standards and duplicates has been instigated under the direction of Hellman and Schofield (H&S) and Lynda Bloom of Analytical Solutions Ltd., Toronto (ASL). This process consisted of the production of three matrix-matched standards from the Duluth Complex, sample preparation and homogenization, homogeneity testing, formulation of recommended values based on a round robin and routine insertion of standards on an anonymous basis. The three standards have copper concentrations in the approximate range 0.15 to 0.60% and nickel from 0.1 to 0.2%. Homogeneity of pulps, as determined by coefficients of variation from 20 replicate assays, is excellent with, for example, values less than 2% for copper and nickel and less than 5% for palladium.

During February and March 2005 nearly 14,000 feet of four inch and PQ (3.3 inch) diameter core holes were drilled for metallurgical sample collection while, approximately, a further 16,000 feet of NTW and NQ2 drill core (21 holes) were completed for resource in-fill and geotechnical evaluation purposes. Sixty-one additional core holes (NQ2 and NTW diameter), totaling approximately 47,500 feet were drilled from September through December 2005, for resource definition, in-fill and geotechnical assessment purposes. Sampling and data compilation for this drilling as well as continued sampling of historic US Steel core continued into March, 2006. In 2007, an additional 61 in-fill holes were drilled during the spring and summer months.

In October 2006, PolyMet published a report titled “Technical Report on the NorthMet Project” authored by D.J. Hunter. The resource statement in the report was sourced from Dr. P.L. Hellman of Hellman & Schofield dated July 2006. The resource figures were based on a block model with a matrix size of 100 feet on strike x 100 feet perpendicular to strike x 20 feet vertically and interpolated using ordinary kriging with data available as of July 2006. Hellman & Schofield elected to interpolate the resource model from surface to the 500 foot elevation based on a pit floor assumption at the 560 foot elevation. The pit floor elevation was obtained from a Whittle pit optimization conducted on an earlier model by mining engineering consultants Australian Mine Design & Development Pty Ltd (AMDAD). The resource was reported at a Net Metal Value (NMV) cut-off of US$7.42 per short ton.

Wardrop interpolated the June 2007 model using a new block size of 50 feet on strike x 50 feet perpendicular to strike x 20 feet vertically using ordinary kriging with inverse distance and nearest neighbour check models. The block size was reduced to 50 feet x 50 feet x 20 feet (from 100 feet x 100 feet x 20 feet) after an evaluation into the selective mining unit that is required to eventually mine the deposit. The model was interpolated to the 0.00 foot elevation to allow a detailed mining engineering study to incorporate resources at depth.

Results including all data available as of May 25, 2007 indicate the NorthMet resources (above a US$7.42 NMV cut-off) contain 638.2 million short tons (578.8 million tonnes) in the Measured and Indicated categories grading at 0.265% copper, 0.078% nickel, 66 parts per billion (ppb) platinum, 234 ppb palladium, 34 ppb gold and 71 parts per million (ppm) cobalt. The Inferred category (above a US$7.42 NMV cut-off) totals 251.6 million short tons (228.2 million tonnes) grading at 0.275% copper, 0.079% nickel, 76 ppb platinum, 272 ppb palladium, 37 ppb gold and 56 ppm cobalt.

The NMV formula used and described in Section 17.2.11 of this report includes the gross metal price multiplied by the processing recovery minus refining, insurance and transportation charges and is the same formula used in the Hunter 2006 report.

Above the 0.2% copper cut-off, the NorthMet deposit contains 400.9 million short tons (363.6 million tonnes) in the Measured and Indicated categories grading at 0.328% copper, 0.089% nickel, 79 ppb platinum, 287 ppb palladium, 41 ppb gold and 73 ppm cobalt. The Inferred category totals 171.6 million short tons (155.6 million tonnes) grading at 0.332% copper, 0.088% nickel, 88 ppb platinum, 322 ppb palladium, 43 ppb gold and 55 ppm cobalt.

Overall, the Measured and Indicated Mineral Resources have increased by 216 million short tons to 638 million short tons, and Inferred Mineral Resources have been expanded to 252 million short tons from 121 million short tons, when comparing the DFS figures down to the 500 foot elevation against this revised estimate down to the 0 foot elevation and using the same cut-off grade as the DFS study.

Comparing the Wardrop model from surface down to the 500 foot elevation with the previous published estimate on page 78 of the Hunter 2006 report, results show an increase of 53.3 million short tons (48.3 million tonnes) in the Measured category and 96.0 million short tons (87.1 million tonnes) in the Indicated category for a total of 149.4 million short tons (135.5 million tonnes) or 35.4% increase in the Measured plus Indicated category. The Inferred Resource tonnage dropped by 42 million short tons (38.1 million tonnes) or 34.8%. Grades in the Measured and Indicated categories drop slightly for all grade elements. Copper decreases by 5.64%, nickel by 4.61%, platinum by 2.45%, palladium by 6.55%, gold by 2.82% and cobalt by 0.39%. However, the contained metal value increases significantly for all elements in the Measured and Indicated categories. Copper increased by 27.75%, nickel by 29.14%, platinum by 31.4%, palladium by 26.51%, gold by 33.0% and cobalt by 32.1%. The comparison includes resources above a US$7.42 Net Metal Value cut-off.

2.0 INTRODUCTION AND TERMS OF REFERENCE

This report describes the results of a mineral resource estimation update of the deposit which is owned by PolyMet Mining Inc. based in Vancouver, Canada. It was prepared at the request of Mr. Don Hunter, Area Manager-Mining, NorthMet Project, following a drilling program that commenced in February, 2007 and completed in March, 2007. The 2007 program was instigated primarily to provide additional grade and confidence information and importantly, to provide greater, more extensive definition to the Magenta Zone which had been recognized in earlier drilling. This report is concerned with the drilling results available to PolyMet as at the 25th of May, 2007, and includes results from all pre-2007 drilling.

Information, conclusions and recommendations contained herein are based on a field examination, including a study of relevant and available data and discussions with PolyMet site geologists Richard Patelke and Steve Geerts. Pierre Desautels, Senior Geologist for Wardrop Engineering and senior author of this report visited the project area for a total of five days in March 2007 and August 2007.

2.1 TERMS OF REFERENCE

The NorthMet resource estimates described herein were completed by Wardrop at the request of PolyMet in order to provide input to ongoing pit optimization studies and are reported in compliance with the Canadian Securities Administrators NI 43-101 under the direct supervision of:

Richard Patelke P.Geo. Project Geologist with PolyMet Mining Corporation. He is responsible for historical and background information on the deposit. Mr. Patelke resides in Minnesota and is a Registered Professional Geologist of good standing with the State of Minnesota. Mr. Patelke has been involved in fieldwork at NorthMet, several of the adjacent copper-nickel deposits, detailed outcrop mapping projects, and other mine development projects in the region over the last seventeen years. He has worked on logging and sampling of drill core recovered from the NorthMet deposit and others during previous drilling campaigns.

Pierre Desautels P.Geo. Senior Geologist with Wardrop Engineering Inc. He directed the review of the 2007 digital data as well as the estimation of the resource for the NorthMet Deposit and is responsible for overall report integrity. Mr. Desautels also visited the NorthMet site from March 21st to March 23rd and again from August 27th to August 29th to gather the necessary data used in the resource estimate, review drill core logging and sampling procedure, collect representative check samples and verify drill hole collars location.

Tim Maunula P. Geo. from Wardrop Engineering Inc. provided on-going technical support and peer reviews of the final NI 43-101 compliant report.

All units used in this report are imperial unless otherwise stated; grid references are based on the Minnesota State Plane Grid (North Zone, NAD83, NAVD 88).

3.0 RELIANCE ON OTHER EXPERTS

Wardrop has followed standard professional procedures in preparing the content of this resource estimation report. Data used in this report has been verified where possible and this report is based upon information believed to be accurate at the time of completion.

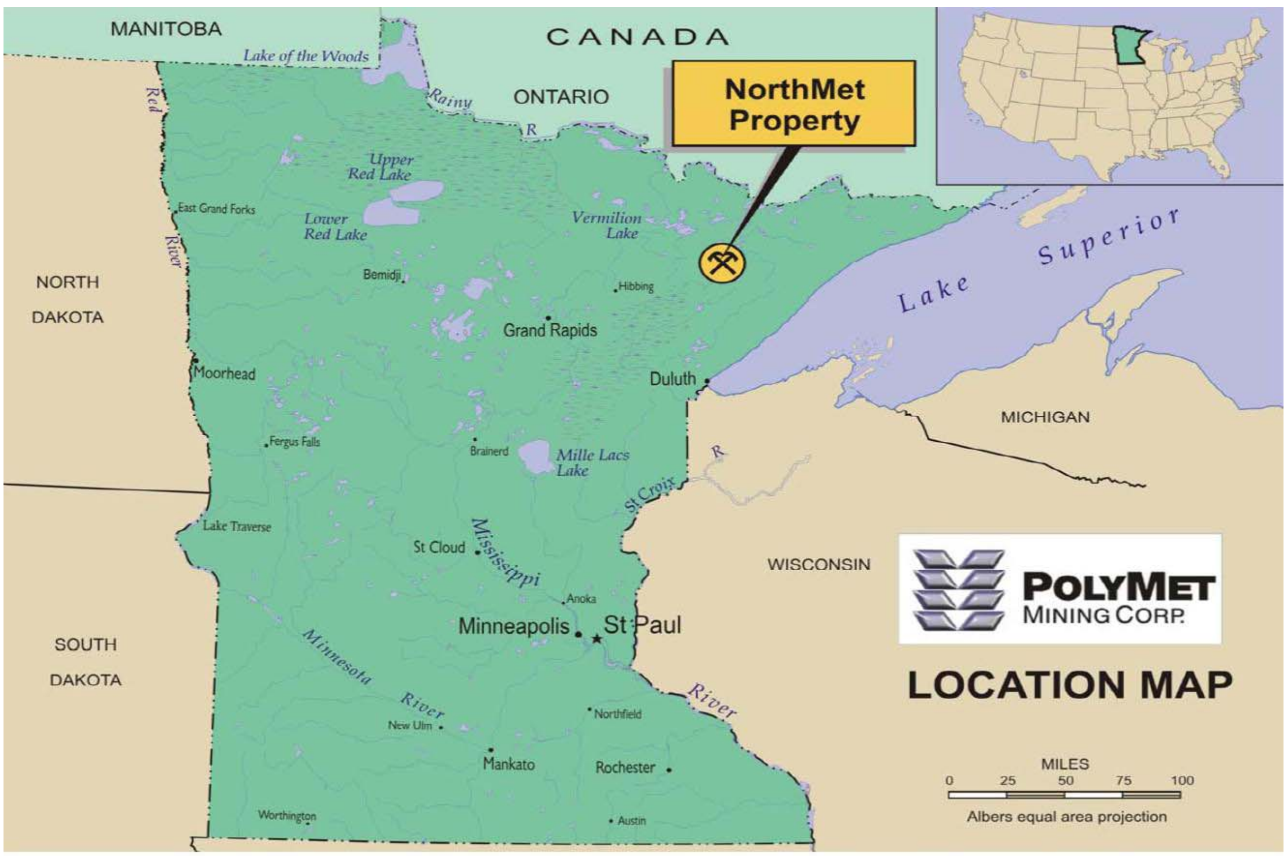
Wardrop has not verified the legal status or legal title to any claims and has not verified the legality of any underlying agreements for the subject properties.

The writers have also relied on several sources of information on the property, including technical reports by consultants to PolyMet, digital geological and assay data, and geological interpretations by PolyMet. Therefore, in writing this report the senior author relies on the truth and accuracy as presented in various sources listed in the References section of this report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 PROPERTY LOCATION

The NorthMet deposit is situated on a mineral lease located in St. Louis County in northeastern Minnesota at Latitude 47° 36’ north, Longitude 91° 58’ west, about 70 miles north of the City of Duluth and 6.5 miles south of the town of Babbitt.



4.2 PROPERTY DESCRIPTION

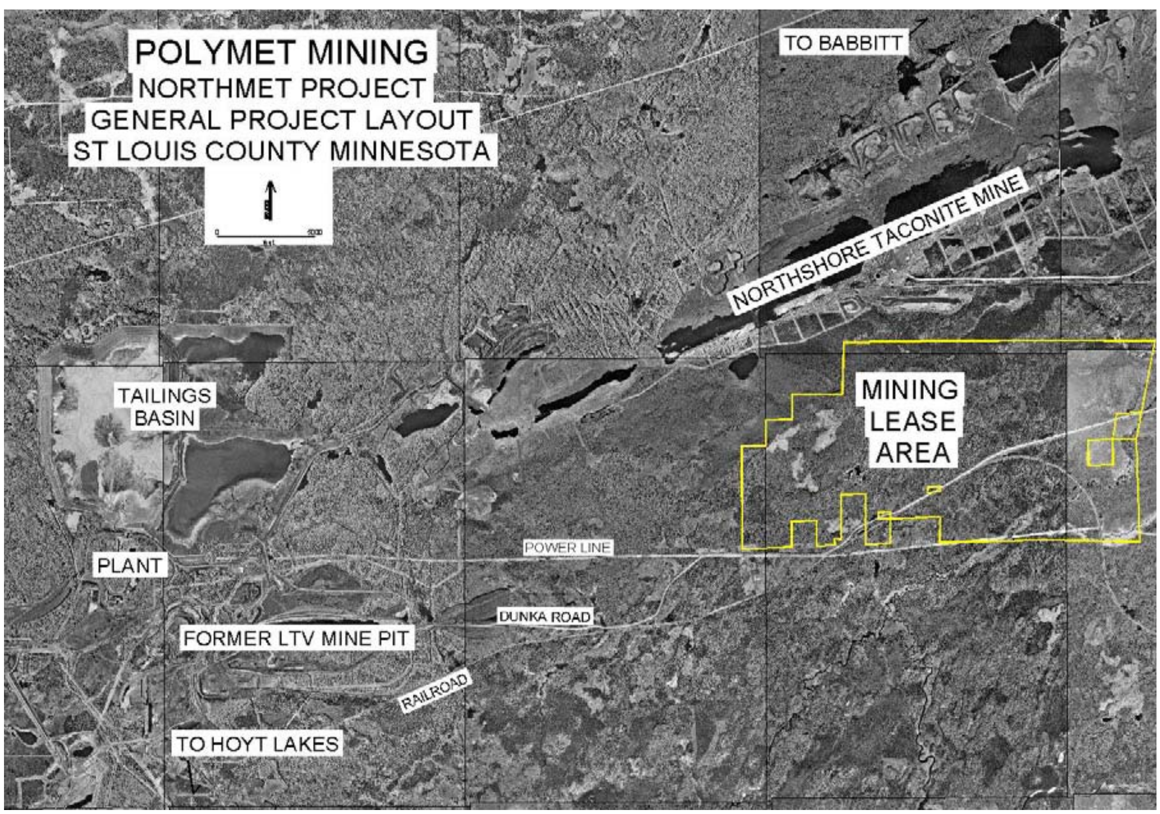
PolyMet, as Fleck Resources, acquired a 20 year renewable mineral rights lease to the deposit in 1989 from US Steel (USS, those leases now controlled by RGGS Inc. of Houston, Texas and Virginia, Minnesota). The lease is subject to yearly lease payments before production and then to a sliding scale Net Smelter Return (NSR) royalty ranging from 3 to 5% with lease payments made before production considered as advance royalties and credited to the production royalty.

Mineral and surface rights have been severed, with the US Forest Service being the surface owner of most of the lease area. As a result of USS retaining the mineral rights and the rights to explore and mine on the site under the original documents that ceded surface title to the Forest Service, the US Forest Service cannot prohibit mining on the lease.

The NorthMet lease held by PolyMet does not cover all areas expected to be disturbed by diamond drilling and eventual mining. Other areas involved are comparatively small inliers and their surface rights are held by the US Forest Service, Cliffs-Erie, and St. Louis County. The Longyear-Mesaba Trust holds the mineral rights to the small area (120 acres) whose surface rights are controlled by the Forest Service. One parcel (40 acres) of the Longyear-Mesaba land intercepts previously planned pits.

The deposit is situated eight miles east of the former LTV Steel Mining Company (LTVSMC) taconite concentrator and pellet plant which ceased operations in January 2001 (Figure 4.1). PolyMet has purchased this property and much of the supporting infrastructure from Cliffs-Erie, who bought the plant out of bankruptcy. This facility has not operated since 2001. It and the supporting infrastructure, which includes the taconite tailings disposal basin, are however, robust, intact and in good condition. It is PolyMet's intention to refurbish and use selected parts of the crushing, milling and concentrator facilities to process ore from NorthMet.

Figure 4.1 NorthMet Project - General Project Layout



The project mining lease area is approximately 4,200 acres. The only currently known mineralized zone on the lease is the NorthMet deposit. The forest in the area has been extensively and repeatedly logged. There are no mine workings, waste stockpiles, or tailings impoundments on the deposit property. The site is woodland and wetland with no access by the general public as it is surrounded by private mining lands. An all-weather gravel mine access road runs parallel to the former, and now infrequently used, LTVSMC railroad that traverses the southern part of the lease. Neither the road nor rail is expected to be impacted by mining operations.

Environmental studies and data collection are in progress for preparation of a mandatory project Environmental Impact Statement (EIS) and submission of applications for environmental permits. Permission to drill in the lease area has been granted by the US Forest Service.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The project site is situated in the eastern part of the historically important Mesabi Iron Range, a world class mining district that produces approximately 42 million tons per year of taconite pellets and iron ore concentrate. There are six producing iron ore mines on the Range, of which the nearby Northshore open pit mine owned and operated by Cleveland-Cliffs is one of the largest. The Northshore pit is located approximately two miles north of the NorthMet Deposit.

5.1 ACCESSIBILITY

Access to the property is by a combination of good quality asphalt and gravel roads via the LTVSMC (now PolyMet) Erie plant site. The nearest center of population is the town of Hoyt Lakes which has a population of about 2,500 people. There are a number of similarly sized communities in the vicinity, all of which are well serviced, provide ready accommodation, and have been or, still are, directly associated with the region's extensive taconite mining industry. The road network in the area is well developed though not heavily trafficked and there is an extensive railroad network which serves the taconite mining industry across the entire Range. There is access to ocean shipping via the ports at Taconite Harbor and Duluth/Superior on the western end of Lake Superior and the St. Lawrence Seaway.

5.2 TOPOGRAPHY, ELEVATION, VEGETATION

The Iron Range forms an extensive and prominent regional topographic feature. The project site is located on the southern flank of the eastern Range where the surrounding countryside is characterized as being gently undulating. Elevation at the project site is about 1,600 feet above sea level (1,000 feet above Lake Superior). Much of the region is poorly drained and the predominant vegetation comprises wetlands and boreal forest. Forestry is a major local industry and the project site and much of the surrounding area has been repeatedly logged. Relief across the site is approximately 100 feet.

5.3 CLIMATE

Climate is continental and characterized by wide temperature variations and significant precipitation. The temperature in the town of Babbitt, about 6.5 miles north of the deposit, averages four degrees Fahrenheit in January and 66 degrees Fahrenheit in July. During short periods in summer, temperatures may reach as high as 90 degrees Fahrenheit with high humidity. Average annual precipitation is about 28 inches with about 30% of this falling mostly as snow between November and April. Annual snowfall is typically about 60 inches with 24 to 36 inches on the ground at any one time. The local taconite mines operate year round and it is rare for snow or inclement weather to cause production delays.

5.4 RESOURCES AND INFRASTRUCTURE

The area has been economically dependent on the iron ore industry for many years and while there is an abundance of skilled labor and local mining expertise, the closure in 2001 of the LTVSMC open pit mine and taconite processing facility has had a significant negative impact on the local economy and population growth. There are, however, a number of other operating mines in other parts of the Iron Range. Hence the mining support industries and industrial infrastructure remains well developed and of a high standard.

The LTVSMC plant site is connected to the electrical power supply grid and a main HV electrical power line runs parallel to the road and railroad that traverse the southern part of the mining lease area. There is a coal fired 130 megawatt power station operated by Minnesota Power situated just west of Hoyt Lakes and about five miles from the LTVSMC plant site. The former LTVSMC 225 megawatt power plant at Taconite Harbor on Lake Superior has been refurbished by Minnesota Power and connected to the regional grid. There are plentiful local sources of fresh water.

6.0 HISTORY

There has been no prior mineral production from the NorthMet deposit though it has been subject to several episodes of exploration and drilling since its discovery in 1969 by USS. Table 6.1 summarizes the exploration drilling activities since 1969 and the amount of assay data.

USS held mineral and surface rights over much of the region, including the NorthMet lease, until the 1930's when, for political and land management reasons, surface title was ceded to the US Forest Service. In negotiating the deeds that separated the titles, USS retained the mineral rights and the rights to explore and mine any minerals on the site, effectively removing the possibility of veto of such activities by the US Forest Service, provided they are carried out in a responsible manner.

In 1989, Fleck Resources Ltd. (Fleck), a company registered in British Columbia, Canada, acquired a 20 year renewable mineral rights lease to the NorthMet deposit from USS and undertook exploration of the deposit. Fleck developed joint ventures with NERCO Inc. in 1991 and Argosy Mining Corp. in 1995 in order to progress exploration. In June 1998, Fleck Resources Ltd. changed its name to PolyMet Mining Corporation. In 2000, there was a short lived joint venture with North Mining Inc. that was terminated by PolyMet when North Mining Inc. was bought by Rio Tinto. With the exception of a hiatus between 2001 and 2003, PolyMet has continued exploration and evaluation of the deposit up to the present.

In 2000, PolyMet commissioned Independent Mining Consultants, Inc. of Tucson, Arizona (IMC) to carry out a Pre-feasibility Study of exploiting the deposit. The report was published in 2001 and filed on SEDAR (IMC, 2000). One of the conclusions of the IMC Pre-feasibility Study report was that proceeding to the preparation of a full Feasibility Study was warranted.

In 2004, USS sold much of its real estate and mineral rights in the region, including the NorthMet deposit, to a private company, RGGS of Houston Texas. PolyMet's USS mineral lease was transferred to RGGS at that time without any change in conditions.

USS took at least three bulk samples from NorthMet in 1970 and 1971 (Patelke and Severson, 2006). Bulk sample weights from three samples weighed approximately 9 tons, 300 tons and 20 tons respectively. The samples came from mineralization in Unit 3 (or possibly 4), Unit 1 and Unit 1, respectively.

Table 6.1 Summary of NorthMet Exploration Activity Since 1969

Company	Date of Drilling	Date of Assaying	Number of Drill Holes	Total Footage for Group	Number of Assay Intervals Used in "Accepted Values" Tables	Assayed Footage Used in Final Database	Assay Labs
USS	1969-1974	1969-1974 1989-1991 1999-2001 2005-2006	112	113,716	9,475	56,525	USS, ACME, ALS-Chemex
USS	1971-1972	Three surface bulk samples for metallurgical testing taken from two locations					
NERCO	1991	1991	2 (4)	842	165	822	ACME
NERCO	1991	Bulk metallurgical sample from large size (PQ) core used for tests of CUPREX hydrometallurgical process (842 feet)					
PolyMet Reverse Circulation Drilling	1998-2000	1998-2000	52	24,650	4,765	23,767	ACME
PolyMet Core Drilling	1999-2000	2000-2001	32	22,156	4,058	20,727	ALS-Chemex
PolyMet RC Drilling Deepened with AQ Core Trail	2000	2000	3	2,696	524	2,610	ALS-Chemex
PolyMet	1998 & 2000	Two flotation pilot plant campaigns and variability testing used about 60 tons of sample derived from RC drilling programs					
PolyMet Core Drilling	2005	2005-2006	109	77,166	11,656	71,896	ALS-Chemex
PolyMet	2005	Samples from four inch and PQ core processed for pilot flotation and metal production, three composites of average 0.3%, and 0.4% Cu, 10, 20, and 10 tons respectively					
PolyMet Core Drilling	Winter, 2007	2007	47	19,102.5	2801	18,174	ALS-Chemex
PolyMet Core Drilling	Summer, 2007	2007	14	5,427.5	748	5,515.7	ALS-Chemex
Totals for Exploration Drilling			**371**	**285,756**	**34,192**	**199,672.7**	
USS Stratigraphic Holes*	1970's?	None	6	9,647	None	None	
INCO*	1956	None	3	2,015	None	None	
Humble Oil Exxon*	1968-1969	None	3	9,912	None	None	
Bear Creek/AMAX*	1967-1977	None	11	8,893	None	None	
PolyMet/Barr Engineering (Hydrologic Testing)	2005	None	21	3,459	None	None	

**Stratigraphic Holes*

NOTES ON TABLE 6.1

The number of assays used in the PolyMet database reflects numerous generations of sampling duplication. See Section 17 for the assay history.

Stratigraphic holes are holes in the area from other projects (not necessarily drilled for this project) used to help define edges of the geologic model. Note that assays, especially those for the USS drilling, were not all completed at the time of the original drilling.

6.1 HISTORICAL RESOURCE ESTIMATES

Numerous historical resource estimates by USS, Fleck and NERCO were quoted by Peatfield (1999) who regarded these as preliminary in nature and lacking detailed documentation. Details on cut-off grades used in this early work are mostly absent though appear to be from 0.1 to 0.2% copper (Peatfield, 1999).

A 1970's USS report (in Patelke & Severson, 2006) provides a preliminary estimate of 109 million short tons of material containing 0.77% copper and 0.24% nickel which was considered to be potentially mineable by underground methods. Although not conforming to the definition of a Mineral Reserve, it was estimated at that time that the amount of this potentially mineable material could be doubled if the average combined cut-off grade was dropped by 0.2%. It is unclear how USS planned to process the ore.

During 2001, IMC completed mining studies and reported Measured, Indicated and Inferred categories within a pit design to 200 feet elevation (approximate final pit depth of 1,400 feet below surface) (IMC, 2001).

The most recent resource estimate was carried out by Hellman & Schofield Pty Ltd. in 2006, which saw the introduction of a US $7.42 NMV cut-off which was, according to Hellman and Schofield, roughly equivalent to a lower cut-off of 0.2% copper and 0.06% nickel.

Table 6.2 lists the historical resource estimates for the NorthMet Deposit.

PolyMet does not treat the historical estimates as current mineral resources or reserves. These estimates are historical in nature, pre-date and are non-compliant with NI 43-101. They are reproduced in Table 6.2 purely for a record. These estimates are no longer relevant as they are being replaced by the NI 43-101 resource estimated presented in this report.

Table 6.2 NorthMet Historical Resource Estimate

Origin	Cut-off	Million Short Tons	Cu*%	Ni*%	Ag* (ppm)	Au* (ppm)	Pt* (ppm)	Pd* (ppm)	Co* (ppm)	Notes
USS	Unknown	272	0.5	0.16	-	-	-	-	-	Geological resources
USS	Unknown	99	0.77	0.24	-	-	-	-	-	to 200 ft depth
Fleck? (1989)	Unknown	75	0.57	0.13	2.1	0.069	0.171	0.274	-	to 800 ft depth
Fleck (1989)	Unknown	157	0.47	0.11	-	-	-	-	-	in pit, undiluted
Fleck (1989)	Unknown	173	0.43	0.1	-	-	-	-	-	"Diluted", to 800 ft
Fleck (1990)	Unknown	154	0.48	0.11	1.7	0.068	0.133	0.454	-	in pit, undiluted
Fleck (1990)	Unknown	179	0.42	0.09	1.5	0.06	0.117	0.399	-	"Diluted", to 800 ft
NERCO (1991)	0.1% Cu	1419	0.4	0.009	1.3	0.061	0.118	0.445	-	"Global"
NERCO (1991)		808	0.43	0.11	1.5	0.061	0.116	0.437	-	In Pit
IMC 2001 Resource	0.1% Cu	362	0.301	0.084	-	0.04	0.078	0.286	66	Measured
		303	0.328	0.085	-	0.047	0.09	0.324	62	Indicated
		340	0.336	0.085	-	0.048	0.093	0.341	59	Inferred
IMC 2001 Resource	0.2% Cu	290	0.336	0.091	-	0.045	0.087	0.323	67	Measured
		255	0.359	0.091	-	0.052	0.1	0.361	62	Indicated
		275	0.379	0.094	-	0.055	0.107	0.396	60	Inferred
IMC 2001 Mineable	0.1% Cu	489	0.3	0.08	-	0.042	0.083	0.285	66	Total "Ore"
		406								Measured + Indicated
IMC 2001 Mineable	0.2% Cu	340	0.336	0.085	-	0.048	0.093	0.341	59	Total "Ore"
		290								Measured + Indicated
H&S 2006 Resource	US$7.42 NMV	133.7	0.298	0.087		0.035	0.067	0.269	77	Measured (To 500 ft elev.)
		288.4	0.266	0.078		0.033	0.066	0.231	72	Indicated (To 500 ft elev.)
		120.6	0.247	0.074		0.033	0.065	0.217	70	Inferred (To 500 ft elev.)

**Cu – copper*   *Pt - platinum*
Ni – nickel   *Pd - palladium*
Ag – silver   *Co - cobalt*
Au – gold

7.0 GEOLOGICAL SETTING

The NorthMet deposit is situated in the Duluth Complex of northeastern Minnesota. This is a large, composite, grossly layered, tholeiitic mafic intrusion that was emplaced into comagmatic flood basalts along a portion of the Mesoproterozoic (Geerts, 1994) Mid-continent Rift System. Along the western edge of the Duluth Complex, and within the Partridge River and South Kawishiwi intrusions, there are eleven known copper-nickel +/- platinum group element deposits (Figure 7.1). The NorthMet deposit is situated within the PRI, which consists of varied troctolitic and (minor) gabbroic rock types that have been subdivided into seven igneous stratigraphic units based on drill core logging. On the footwall is the Paleoproterozoic Virginia Formation, comprised of contact-metamorphosed graywackes and siltstones.

The regional and local geology are well known (Geerts et al., 1990; Geerts, 1991, 1994; Severson, 1988; Severson and Hauck, 1990, 1997; Severson and Zanko, 1996; Severson and Miller, 1999; Severson et al., 2000; Hauck et al., 1997; Miller et al., 2001, 2002). There are over 1,100 exploration drill holes on this part of the Complex, and nearly 1,000,000 feet of core have been logged or re-logged in the past fifteen years by a small group of company and university research geologists (see Patelke, 2003).

All of these igneous units, which are described below from bottom to top, exhibit shallow dips (10°-25°) to the south-southeast. The deposit, and the contact between the Duluth Complex and the Virginia Formation, strike 56°, approximately east-northeast.

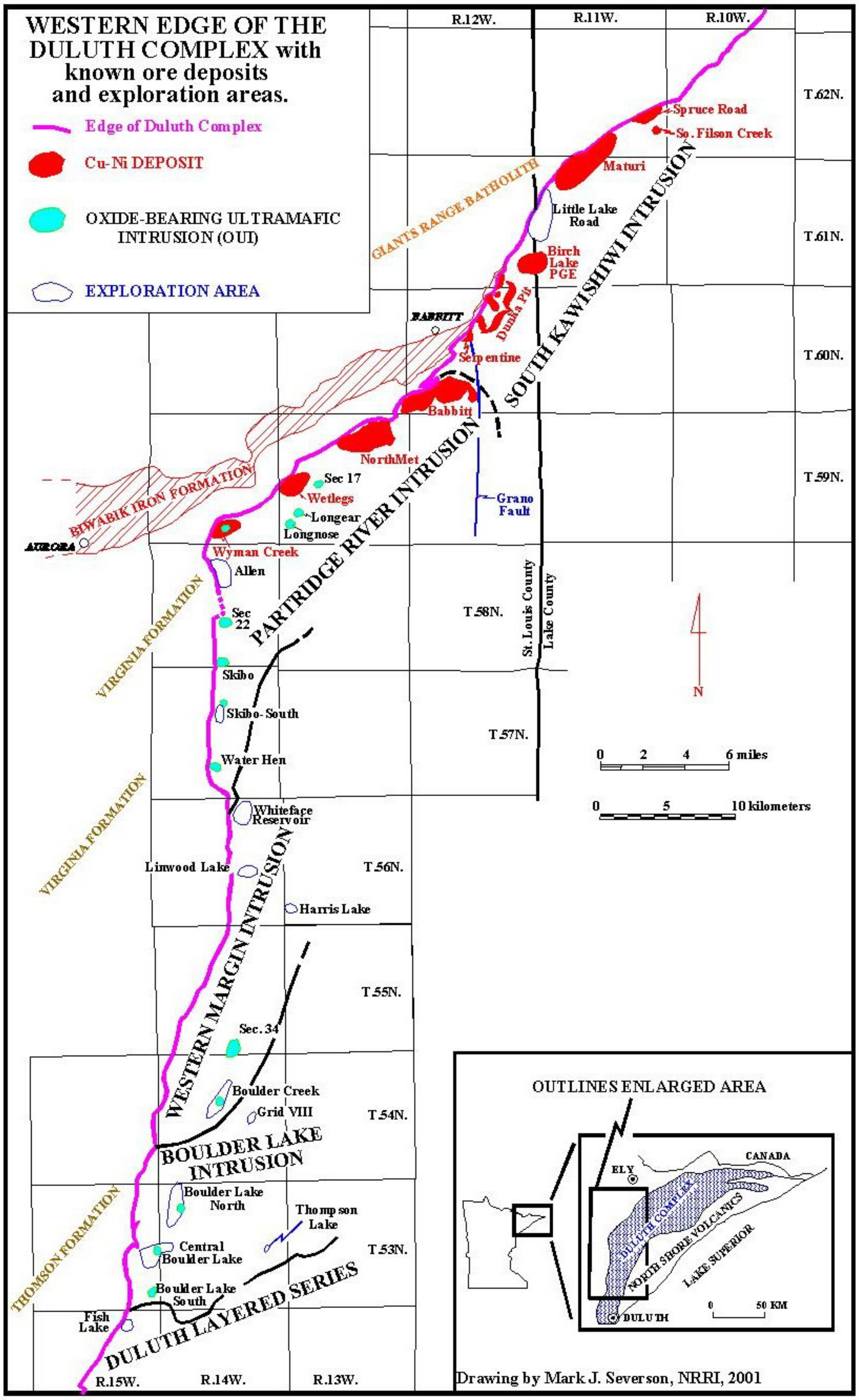
Geological domains for resource modeling are: Virginia Formation footwall rocks; a domain including the upper, higher grade parts of Unit 1, locally merged with the higher grade zones at the base of Unit 2; the remainder (lower part) of Unit 1; the Magenta Zone in Units 4, 5 and 6 in the western part of the deposit; and the remaining, less mineralized, parts of Units 2 through 7.

Note that in the geologic solids model, Units 2 and 3 are combined as Unit 3, and Units 4 and 5 are combined as Unit 5. In both cases the combined units have more consistent thicknesses than the single units. Unit 2 and 3 may or may not be a single igneous package, there is evidence for both scenarios, while Units 4 and 5 are clearly one package with an arbitrary pick based on gradual changes in grain size and overall texture defining the unit boundaries.

Geology at NorthMet is well constrained by outcrop mapping (Severson and Zanko, 1996) and drill core logging on the USS holes, mostly by Geerts (Geerts et al., 1990, Geerts 1991, 1994), Severson (Severson et al., 2000) and Patelke (2001). This has been rather detailed logging which provided the framework for the more production oriented logging done by

PolyMet during 1998-2000 (by various geologists trained by Severson) and the 2005 and 2007 (mostly by Severson and Geerts) drilling programs.

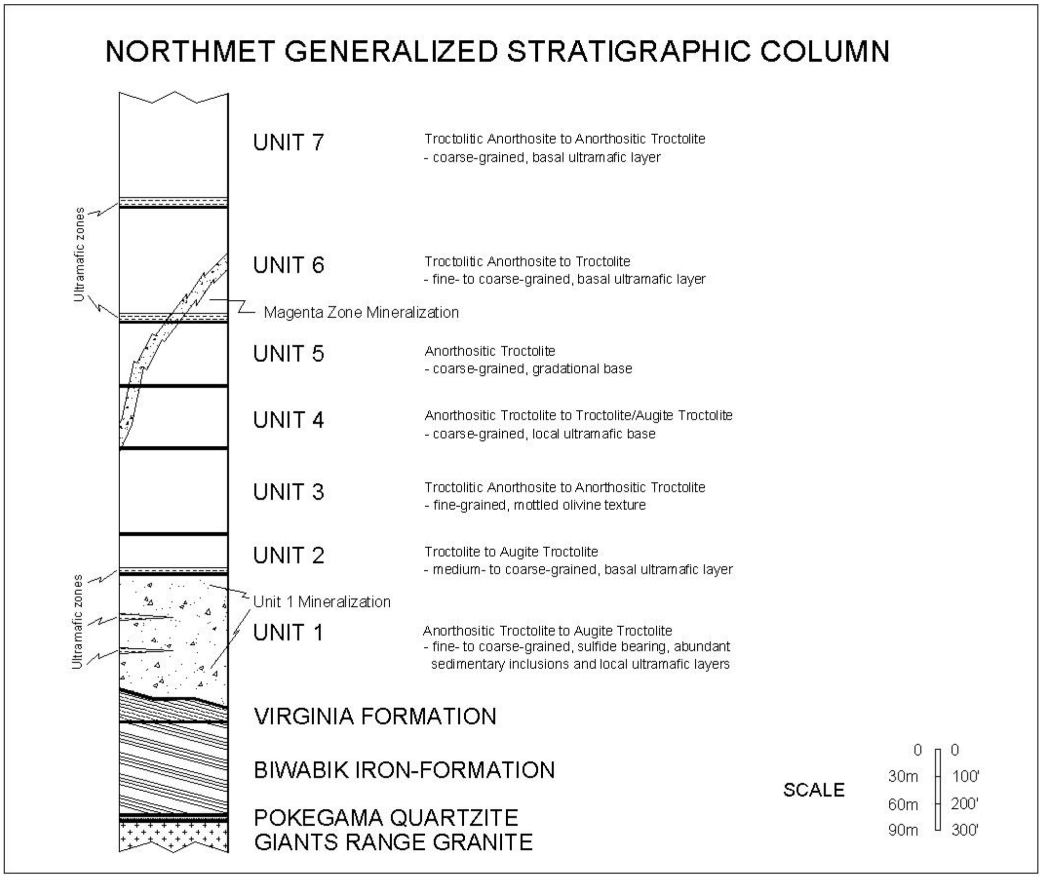
Figure 7.1 Copper-Nickel Deposit in the Duluth Complex (after Severson)



7.1 LOGGING AND MAPPING UNITS

A summary of the general stratigraphy of the NorthMet Deposit shown in Figure 7.2 is outlined in the text below. Rock units and formations are listed in descending order, as would be observed from top to bottom in drill hole. NorthMet units are labeled as Units 1 through 7, bottom to top. Unit 3 is the oldest, the intrusion sequence of the other units is not clear.

Figure 7.2 NorthMet Stratigraphic Column (after Geerts, 1994)



The broad picture is of a regular stratigraphy of troctolitic to anorthositic rock units, dipping southeast at 20° to 25°, with basal ultramafic units commonly defining the boundaries of these units. The basal ultramafic zones tend to have diffuse tops, sharp bases, and are commonly serpentinized and foliated. Geologists have generally picked the unit boundaries at the base of these ultramafics though there are local exceptions. Economic sulfide mineralization is ubiquitous in the basal igneous unit (Unit 1) and is locally present, but restricted, in the upper units (i.e., Magenta Zone). There is no economic mineralization in the footwall rocks.

7.2 ROCK TYPE AND UNIT CLASSIFICATION

Igneous rock types in the Complex are classified at NorthMet by visually estimating the modal percentages of plagioclase, olivine, and pyroxene. Due to subtle changes in the percentages of these minerals, a variation in the defined rock types within the rock units may be present from interval to interval or hole to hole. This is especially true for Unit 1.

Unit definitions are based on: overall texture of a rocktype package; mineralogy; sulfide content; and context with respect to bounding surfaces (i.e., ultramafic horizons, oxide-rich horizons). Unit definitions are not always immediately clear in logging, but usually clarified when drill holes are plotted on cross-sections. In other words, to correctly identify a particular igneous stratigraphic unit, the context of the units directly above and below must also be considered . Figure 7.3 shows a plan view of the NorthMet geological contacts within the mining lease area.

Based on drill hole logging, the generalized rock type distribution at NorthMet is about 83% troctolitic, 6% anorthositic, 4% ultramafic, 4% sedimentary inclusions, 2% noritic and gabbroic rocks, and the rest as pegmatites, breccia, basalt inclusions and others.

7.3 UNIT DEFINITIONS AND DESCRIPTIONS

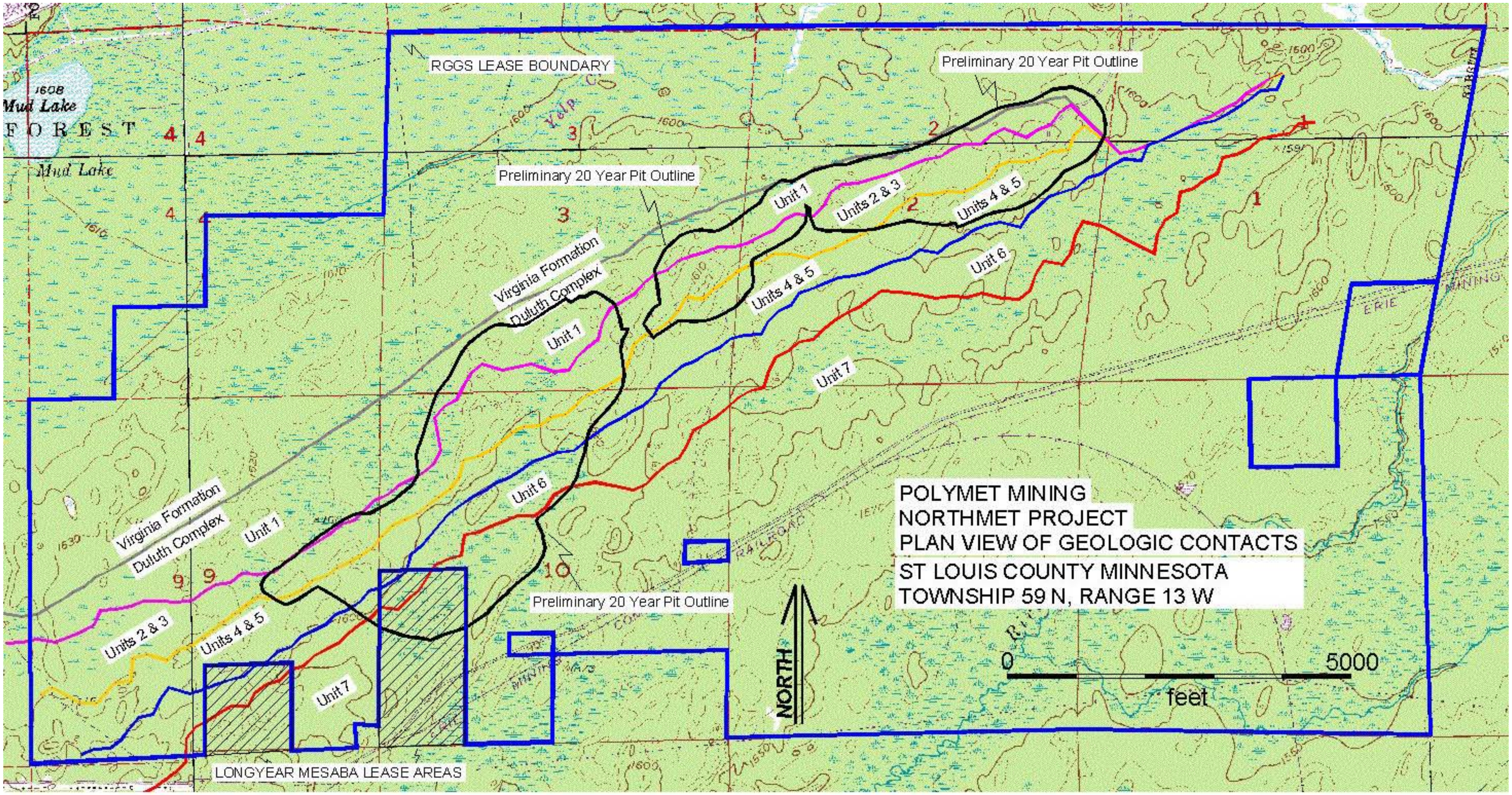
7.3.1 UNIT 7

Unit 7 is the uppermost unit intersected in drill holes at the NorthMet Deposit. It consists predominantly of homogeneous, coarse-grained, anorthositic troctolite and troctolitic anorthosite. The unit is characterized by a continuous basal ultramafic subunit that averages 20 feet thick. The ultramafic consists of fine- to medium-grained melatroctolite to peridotite and minor dunite. The average thickness of Unit 7 is unknown due to truncation by erosion.

7.3.2 UNIT 6

Very similar to Unit 7, Unit 6 is composed of homogeneous, fine- to coarse-grained, troctolitic anorthosite to troctolite. It averages 400 feet thick and has a continuous basal ultramafic subunit that averages 15 feet thick. Overall, sulphide mineralization is generally minimal, although a number of drillholes in the southwestern portion of the NorthMet Deposit contain significant copper sulphides and associated elevated PGEs (Geerts 1991, 1994). Sulphides within Unit 6 generally occur as disseminated chalcopyrite/cubanite with minimal pyrrhotite. This mineralized occurrence (the Magenta Zone) is discussed in greater detail in the following sections.

Figure 7.3 NorthMet Geological Contacts



7.3.3 UNIT 5

Unit 5 exhibits an average thickness of 250 feet and is composed primarily of homogeneous, equigranular-textured, coarse-grained anorthositic troctolite. Anorthositic troctolite is the predominant rock type, but can locally grade into troctolite and augite troctolite towards the base of the unit. The lower contact of Unit 5 is gradational and lacks any ultramafic subunit, therefore the transition into Unit 4 is a somewhat arbitrary pick. Due to the ambiguity of this contact, thicknesses of both units vary dramatically. However, when Units 5 and 4 are combined, the thickness is fairly consistent deposit-wide.

7.3.4 UNIT 4

Being somewhat more mafic than Unit 5, Unit 4 is characterized by homogeneous, coarse-grained, ophitic augite troctolite with some anorthosite troctolitic. Unit 4 averages about 250 feet thick. At its base, Unit 4 may contain a discontinuous, local, thin (usually no more than six inches) ultramafic layer or oxide-rich zone. The lower contact with Unit 3 is generally sharp. Overall, sulfides only occur in trace amounts within Unit 4 as finely disseminated grains of chalcopyrite and pyrrhotite.

7.3.5 UNIT 3

Unit 3 is used as the major “marker bed” in determining stratigraphic position in drill core. It is composed of fine- to medium-grained, poikilitic and/or ophitic, troctolitic anorthosite to anorthositic troctolite. Characteristic poikilitic olivine gives the rock an overall mottled appearance. On average Unit 3 is 300 feet thick. The lower contact of Unit 3 can be disrupted, with multiple “false starts” into typical Unit 2 homogenous rocks, only to go back to mottled Unit 3 with depth. The alternating sequence is common in the south western portion of the deposit and can span for many tens of feet along core before finally settling into definitive Unit 2. This most likely indicates that Unit 3 is broken up in this area and intruded by Unit 2 near the base of Unit 3. As with Units 4 and 5, the thickness of Units 2 and 3 tend to be highly variable, whereas if combined into one unit, it is more consistent deposit-wide (though not as consistent as Units 4 and 5).

Unit 3 can contain both footwall meta-sedimentary (Virginia Formation) and hanging wall basalt inclusions, which seems to indicate earliest emplacement within the intrusive sequence of the deposit. This exemplified by the fact that few sedimentary inclusions are found above Unit 3 and few basalt inclusions are found below it, as if Unit 3 was initially intruded between these units and eventually formed a barrier between them.

7.3.6 UNIT 2

Unit 2 is characterized by homogeneous, medium- to coarse-grained troctolite and pyroxene troctolite with a consistent basal ultramafic subunit. The continuity of the basal ultramafic subunit, in addition to the relatively uniform grain size and homogeneity of the troctolite, makes this unit distinguishable from Units 1 and 3. Unit 2 has an average thickness of 100 feet. The ultramafic subunit at the base of Unit 2 is the lowermost continuous basal ultramafic horizon at the NorthMet Deposit, averages 25 feet thick, and is composed of melatroctolite to peridotite and minor dunite.

In some ways the characteristics of Unit 2 and how it fits into the igneous stratigraphy and the sequence of intrusion are ambiguous, it can be interpreted as the lower part of Unit 3, the upper part of Unit 1, or a separate unit. Based on continuity of the ultramafic boundary it seems to be a lower, more mafic, counterpart to Unit 3. The general lack of footwall inclusions in Unit 2 would argue against Unit 2 being older than Unit 1 and would indicate an intrusion sequence of 3, 1 then 2. Though Unit 2 has been historically described as barren, in the western part of the deposit it has mineralization grossly continuous with that at the top of Unit 1.

7.3.7 *Unit 1*

Of the seven igneous rock units represented within the NorthMet Deposit, Unit 1 is the only unit that contains significant deposit-wide sulfide mineralization. Sulfides occur primarily as disseminated interstitial grains between a dominant silicate frame work and are chalcopyrite > pyrrhotite > cubanite > pentlandite. Unit 1 is also the most complex unit, with internal ultramafic subunits, increasing and decreasing quantities of mineralization, complex textural relations and varying grain sizes, and abundant metasedimentary inclusions. It averages 450 feet thick, but is locally 1,000 feet thick and is characterized lithologically by fine- to coarse-grained heterogeneous rock ranging from anorthositic troctolite (more abundant in the upper half of Unit 1) to augite troctolite with lesser amounts of gabbro-norite and norite (becoming increasingly more abundant towards the basal contact) and numerous metasedimentary inclusions. By far the dominant rock type in Unit 1 is medium-grained ophitic augite troctolite, but the textures can vary wildly. Two internal ultramafic subunits occur in drill holes in the southwest, and have an average thickness of 10 feet.

7.3.8 *Footwall: Animikie Group and Archean Rocks*

The footwall rocks of the NorthMet Deposit consist of Paleoproterozoic (meta) sedimentary rocks of the Animikie Group. These rocks are represented by the following three formations, listed from youngest to oldest: the Virginia Formation; the Biwabik Iron Formation; and the Pokegama Quartzite. They are generally underlain by Archean granite of the Giants Range Batholith, but there are Archean basalts and metasediments mapped in outcrop near the project area. The Duluth Complex is only in contact with the Virginia Formation at the NorthMet site.

Intrusion of the Complex metamorphosed the Virginia. Non-metamorphosed Virginia Formation (as found to the north of the site) consists of a thinly-bedded sequence of argillite and Graywacke, with lesser amounts of siltstone, carbonaceous-sulfidic argillite/mudstone, cherty-limey layers, and possibly some tuffaceous material. However, in proximity to the Duluth Complex, the grade of metamorphism (and associated local deformation) progressively increases, and several metamorphic varieties and textures are superimposed on the original sedimentary package at an angle to the original stratigraphy. At least four distinctive Virginia Formation varieties are present at NorthMet and informally referred to as: Cordieritic Metasediments; Disrupted Unit; Recrystallized Unit; and Graphitic Argillite (often with pyrrhotite laminae). These subunits are fully described in Severson et al., 2000.

7.3.9 *Inclusions in the Duluth Complex*

Two broad populations of inclusions occur at NorthMet: hanging wall basalts (Keweenawan) and footwall meta-sedimentary rocks. Basalts are fine-grained, generally gabbroic, with no apparent relation to any mineralization. Footwall inclusions may carry substantial sulfide (pyrrhotite) and often appear to contribute to the local sulfur content. Footwall inclusions are all Virginia Formation, no iron-formation, Pokegama Quartzite, or older granitic rock has been recognized as an inclusion at NorthMet.

Sedimentary inclusions make up about 4% of the logged rocktypes, and basalt inclusions sum to less than 1% of the drilling footage.

Generally, hanging wall inclusions are restricted to Unit 3 and the units above, while footwall inclusions are most abundant in Unit 1.

8.0 DEPOSIT TYPES

The NorthMet Deposit is a large-tonnage, disseminated accumulation of sulfide in mafic rocks, with rare massive sulphides. Copper to nickel ratios generally range from 3:1 to 4:1. Primary mineralization is probably magmatic, though the possibility of structurally controlled re-mobilization of the mineralization (especially PGEs) has not been excluded. Sulphur source is both local and magmatic (Theriault et al., 2000). Extensive detailed logging has shown no definitive relation between specific rock type and the quantity or grade quality of sulfide mineralization in the Unit 1 mineralized zone or in other units, though the localized noritic to gabbronoritic rocks (related to footwall assimilation) tend to be of poorer PGE grade and higher in sulphur.

Footwall faults are inferred from bedding dips in the underlying sedimentary rocks, considering the possibility that Keweenawan syn-rift normal faults may affect these underlying units and show less movement, or indeed no effect on the igneous units. Nonetheless, without faults, the footwall or igneous unit dips do not reconcile perfectly with the overall slope of the footwall. There are some apparent offsets in the igneous units, but definitive and continuous fault zones have not been identified. So far, no apparent local relation between the inferred location of faults and mineralization has been delineated.

Outcrop mapping (Severson and Zanko, 1996) shows apparent unit relations that require faults for perfect reconciliation. But, as with information derived from drill core, neither igneous stratigraphic unit recognition, nor outcrop density, is sufficiently definitive to establish exact fault locations without other evidence.

There is a wealth of regional (and some local) geophysical data available, though the resolution of core logging and field mapping is probably better than that of the geophysics, hence while the geophysical data is interesting, it has not yet been useful at delineating the structural geology of the site nor proved to be a guide to mineralization.

9.0 MINERALIZATION

The metals of interest at NorthMet are copper, nickel, cobalt, platinum, palladium and gold. Minor amounts of rhodium and ruthenium are present though these are considered to have no economic significance. In general, with the exception of cobalt and gold, the metals are positively correlated with copper mineralization. Cobalt is well correlated with nickel.

Mineralization occurs in four broadly defined horizons throughout the NorthMet property. Three of these horizons are within basal Unit 1, though they likely will not be discriminated in mining. The upper horizon locally extends upward into the base of Unit 2. The thickness of each of the three Unit 1 enriched horizons varies from 5 feet to more than 200 feet. Unit 1 mineralization is found throughout the base of the deposit. A less extensive (the copper-rich, sulphur-poor Magenta Zone) mineralized zone is found in Units 4, 5 and 6, in the western part of the deposit.

Mineralization occurs in two broad forms. Firstly, sulphides may be disseminated in heterogeneous troctolitic rocks (mainly Unit 1) in which the grain sizes of both silicates and sulphides widely vary. The occurrence and amount of this mineralization within drill holes can be unpredictable over the scale of 20 to 30 feet though mineralization is relatively constant in some horizons (i.e., top of Unit 1). Secondly, economic concentrations of sulphides in the upper units tend to be coarser grained and copper-rich (Units 2 to 7, particularly the Magenta Zone).

Sulphide mineralization consists of chalcopyrite and cubanite, pyrrhotite and pentlandite, with minor bornite, violarite, pyrite, sphalerite, galena, talnakhite, mackinawite and valerite. Sulphide minerals occur mainly as blebs interstitial to plagioclase, olivine and augite grains, but also may occur within plagioclase and augite grains, as intergrowths with silicates, or as fine veinlets. Small globular aggregates of sulphides (<2 centimetres) have been observed in core and in the small test pit on the site. The percentage of sulphide varies from trace to about 5%, but is rarely greater than 3%. Local massive sulphide is present, but rare. Platinum, palladium, and gold are associated with the sulphides as well as in tellurides and bismuthides.

10.0 EXPLORATION

Exploration history is outlined in Section 6. In general, the early drilling by USS is widely spaced but comparatively regularly distributed (approximately 600 feet x 600 feet), with some omissions that left substantial undrilled areas, especially down-dip. Subsequent programs by PolyMet were first focused on extracting metallurgical samples and on proving the up-dip and more readily accessible parts of the deposit. Besides extensive in-fill drilling since 2005, PolyMet has also expanded the definition of the mineralized zones to the west and southwest. In particular, it has become evident that the Magenta Zone, located in the upper units in the western part of the deposit, is much more robust than previously thought.

Those parts of the deposit at moderate depth largely continue to have the original USS drill-hole spacing, which, in the eastern half of the deposit, is approximately 600 feet x 1,200 feet.

Drill spacing in the deepest known section of the deposit is approximately 1,200 feet x 1,200 feet. The deposit is definitely open at depth and along strike. The deeper parts of the deposit (below about 1,600 feet from surface) may be of interest in the future, but they are considered to fall outside the scope of the current evaluation.

Drill hole spacing averages between 200 and 215 feet in the area of the resource model. This excludes holes drilled for metallurgical or geotechnical purposes. Distance studies show that 50% of the drillhole intercepts with Unit 1 will be within 215 feet distance from another hole. In the magenta zone, 50% of the drillhole intercepts will be within 200 feet distance from another hole. The best drilled area is in the vicinity of the preliminary optimum pit. This area also contains near-surface mineralization and is drilled at a spacing of about 150 feet (excluding geotechnical and metallurgical holes) from 171 holes.

11.0 DRILLING

There have been four major (and one minor) drilling campaigns on the property as shown in Figure 11.1.

This discussion is largely taken from Patelke and Geerts (2006).

In all cases drilling has shown a basal mineralized zone (Unit 1) in heterogeneous troctolitic rocks with the highest values at its top and with grades generally diminishing with vertical depth along drill holes. Grade appears to increase down dip, but as depth increases less information is available. The main ore zone is from 200 to 1,000 feet thick, averaging about 450 feet. Mineralization sub-crops at the north edge of the deposit and continues to depths of greater than 2,500 feet. Sampling on the longest holes is sparse, with little in-fill work done since the original USS sampling (PolyMet took about 700 samples from these longer holes in spring of 2006, these data are included in the drilling database)

While the concept of some structural control on mineralization is valid (i.e., proximity to a vent system or re-mobilization of some metals) no evidence collected to date fully supports this view. More likely, this is a magmatic sulphide system which was then contaminated by sulphur from locally assimilated footwall rocks and modified to some extent by (late magmatic?) hydrothermal action.

Core recovery (Table 11.1) is reported by PolyMet to be upwards of 99% with rare zones of poor recovery. Rock quality designation (RQD) is also very high, upward of 85% for all units except in the Iron formation. Experience in the Duluth Complex indicates that core drilling has no difficulty in producing samples that are representative of the rock mass. Rock is fresh and competent and the common types of alteration (sausserization, uralization, serpentinization and chloritization) in the deposit are not those that affect recovery. Core recovery was recorded by USS and PolyMet in its earlier work and for the smaller diameter (NQ2 and NTW) drilling in since 2005. There is no readily apparent relation of recovery to sulphur content or rock type. Values in excess of 100 may arise from errors associated with assembling broken core.

In short-range detail, the deposit geology is subtle and complex. However, mineralogical and textural variation occurs within narrow ranges and at the mining scale, the overriding lithology will be troctolite to augite-troctolite (plagioclase>olivine>>pyroxene with biotite and minor ilmenite). The known ultramafic horizons are thin enough, and metasedimentary inclusions small enough, that material handling will homogenize the plant feed, as accounted for in the bulk samples. In general, rocks are medium- to coarse-grained, fresh, and competent.

Figure 11.1 Drillhole Collar Location by Campaign

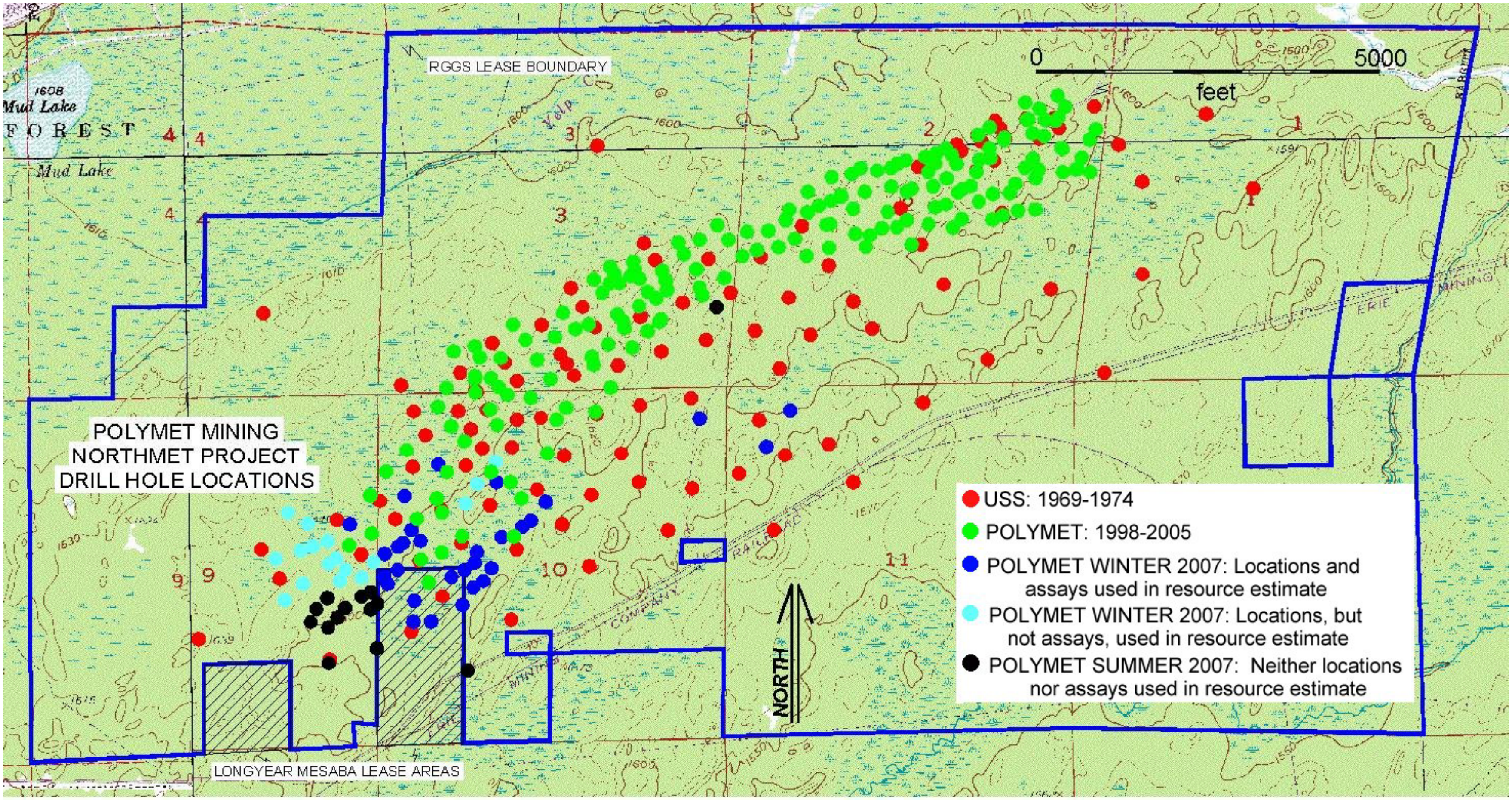


Table 11.1 Summary of Core Recoveries and RQD Measurements (Includes all Drilling through Summer 2007)

Unit	Recovery Count	Recovery Percentage (%)	RQD count	RQD percent
1	8,906	99.9	4,194	91.8
2	1,879	99.5	968	90.3
3	4,374	100.1	2,632	93.5
4	2,160	100.3	1,063	96.4
5	1,901	100.2	838	94.3
6	2,262	100.2	1,041	94.7
7	951	99.3	396	87.4
Virginia Formation	2,095	99.7	1,069	87.6
Inclusions	62	98.1	57	86.6
Biwabik Iron Formation	381	100.2	60	79.8
Duluth Complex Average		99.96		92.82

11.1 USS DRILLING, 1969-1974

From 1969 to 1974 USS drilled 112 holes across the property. Drilling began in an attempt to intersect a geophysical conductor (virtually all of the deposits in the area were originally drilled on geophysical targets) and the first hole hit three feet of massive sulphide with 4.8% copper, 115 feet from the surface. Drilling continued, without discovery of any more such dramatic results and eventually defined a broad zone of low-grade copper-nickel sulphide mineralization. Further drilling indicated that the original geophysical target was graphitic argillite in the footwall, rather than any mineralization in the Duluth Complex.

USS assayed only about 22,000 feet of the 133,000 feet they drilled, generally on 10 foot intervals. Their focus was on developing an underground reserve and sampling was limited to zones of continuous “higher grade” mineralization. As in many exploration projects, sampling focused on the expected main ore body, not more scattered intervals or assumed waste rock. USS was aware of the PGE value from the assaying of concentrates derived from bench work and test pits, but did no assaying for these metals on drill core. Nearly all core was BQ size, and only 14 of the holes were angled (all to the northwest, grid north). Hole depths ranged from 162 feet to 2,647 feet, averaging 1,193 feet. Five holes were over 2,500 feet in length.

USS drilling was by Longyear. Virtually all of the core from this program exists, is properly stored, and is available for further sampling. Seventeen USS holes were “skeletonized” after assaying, with only a foot kept for each five or ten foot “unmineralized” run. Core was split by USS using a manual core splitter. Samples submitted for assay were half core. USS assays were done at their own laboratories; most of these have since been re-assayed by ACME or Chemex. Drilling by PolyMet near some of the locations of skeletonized holes has indicated the possibility that some mineralized intervals may have been missed and disposed of in the skeletonizing process.

The USS geologists logged all their holes, but neither recognized nor documented any comprehensive igneous stratigraphy. Mark Severson of the Natural Resources Research Institute (NRRI), Duluth, Minnesota began re-logging these holes in the late 1980's as part of a Partridge River intrusion geochemistry project. He quickly recognized Unit 3 as a marker horizon, which led to reliable correlations among the other units.

Steve Geerts, working for the NRRI with Fleck Resources (PolyMet precursor) refined the geologic model for the deposit in light of this igneous stratigraphy. This basic model is still considered by PolyMet to be valid and currently guides the interpretation of the deposit (Severson 1988, Severson and Hauck 1990, Geerts et al. 1990, Geerts 1991, 1994).

11.2 NERCO Drilling, 1991

NERCO conducted a minor drilling campaign in 1991—four holes at two sites. At each site a BQ sized core hole (1.43 inches) was drilled and sampled from collar to bottom of hole. A PQ (3.3 inch) hole twinned each of these two holes and was sent in its entirety for metallurgical work on the assumption that the assays on the smaller diameter core would represent the larger diameter core. Both sets of holes twinned existing USS holes (Pancoast, 1991).

One-hundred and sixty-five assays were taken from the smaller diameter cores and processed at ACME.

11.3 PolyMet Drilling, 1998-2000, Reverse Circulation Holes

PolyMet drilled 52 vertical reverse circulation (RC) holes to supply material for a bulk sample in 1998 to 2000. These holes twinned some USS holes and others served as in-fill for parts of the deposit. The drilling was done by a contractor from Duluth with extensive RC experience and was carried out in both summer and winter. The type of bit and extraction system used (cross-over sub or face-sampling) is not known. Available recorded sample weights indicate a recovery of at least 85%. Metallurgical core drilling in February and March 2005 approximately twinned some of these RC holes.

The PolyMet drilling in 1998 to 2000 targeted the up-dip portions of the deposit and was essentially in-fill drilling. RC holes averaged 474 feet in length with a minimum of 65 feet and a maximum depth of 745 feet. Core holes averaged 692 feet in length with a minimum of 229 feet and a maximum depth of 1,192 feet (this does not include the three RC holes completed with AQ core).

The RC holes were assayed on five foot intervals. Six inch reverse circulation drilling produced about 135-150 pounds of sample for every five feet of drilling. This material was split using a riffle splitter into two samples and placed in plastic bags and stored underwater in five gallon plastic buckets. A 1/16th sample was taken by rotary splitter from each five feet of chip sample and assayed. The assay values were used to develop a composite pilot plant sample from bucket samples. Actual compositing was done after samples had been shipped to Lakefield (Patelke and Severson, 2006). A second 1/16th sample was sent to the Minnesota Department of Natural Resources for their archive.

Chip samples were collected and later logged at the PolyMet office. PolyMet retains these samples in their warehouse. Logging is obviously not as precise as that for core, but the major silicate and sulfide minerals can be recognized and location of marker horizons derived. The underlying metasedimentary rocks (Virginia Formation) are easily recognized and finding the bottom of the deposit is relatively straightforward. Where rock recognition is difficult, the higher zinc content of the footwall rocks can help define the contact.

11.4 PolyMet Drilling, 1999 to 2000, Diamond Core Holes

The PolyMet core drilling program was carried out during the later parts of the RC program, with three holes drilled late in 1999 and the remainder in early 2000. There were seventeen BTW (1.65 inch) and fifteen NTW (2.2 inch) holes all of which were vertical. Three RC holes were re-entered and deepened with AQ core.

These holes were assayed from top to bottom (with rare exception) on five foot lengths. Samples were half core. Cutting was done at the PolyMet field office in Aurora, Minnesota.

Core logging was done at the PolyMet office by a variety of geologists, all trained in recognition of the units and the subtleties of the mineralogy and textures by Mark Severson of the NRRI.

11.5 PolyMet Drilling, 2005, Diamond Core Holes

PolyMet's 2005 drilling program had four distinct goals: collection of metallurgical sample; continued in-fill drilling for resource estimation; drilling outward from the margins of the well drilled area to expand resource; and collection of geotechnical data through core logging and recovery of oriented cores. The program covered 109 holes for 77,165 feet. These included:

- Fifteen four inch diameter holes for metallurgical sample (6,974 feet) drilled by Boart-Longyear of Salt Lake City in February-March 2005;
- Twelve PQ sized holes (core diameter 3.3 inches) for 6,897 feet, mostly used for bulk sample material, but with a few holes intended as in-fill. The PQ holes were also all drilled in February-March of 2005.
- Fifty-two NTW sized holes (2.2 inches) totalling 41,403 feet for resource definition;
- Thirty NQ2 sized holes (2.0 inches) totalling 21,892 feet for resource definition and geotechnical purposes. The NTW and NQ2 size core was drilled in February-March and September-December of 2005.

About 11,650 multi-element assays were collected from the 2005 drilling program. Another 1,790 assays were performed on previously drilled USS and PolyMet core. All assaying was by ALS-Chemex.

Of the 109 holes drilled in 2005, 93 were angled, generally to grid north at dips of -60°to -75°. Sixteen NQ2 sized holes were drilled and marked as oriented core, ten to grid south and six to grid north, at varying dips, for geotechnical assessment across the deposit. These holes targeted expected positions of pit walls as defined by Whittle pit shells developed by mining consultants AMDAD and available in January 2005. These locations have proved to be reasonable for more recent iterations of pit design.

Besides extensive assaying for “ore” elements during this program, about 900 core intervals were analyzed for “whole rock” oxides, about 300 samples were analyzed for Rare Earth Elements (REE), and thousands of density measurements were taken. This data is used to support resource evaluation as well as waste characterization efforts for permitting.

Separately, about 100 samples from previously drilled and analyzed core were submitted for humidity cell testing. These samples represented a broad cross-section of Units, rock-types, metals content, and sulphur content. In addition, these humidity cell samples were all re-assayed, analyzed for whole rock, and assessed in thin-section and by micro-probe.

11.6 POLYMET DRILLING, 2007, DIAMOND CORE HOLES

In 2007 PolyMet conducted two drilling programs, a winter program for 47 holes over 19,102.5 feet and a summer program for 14 holes over 5,437.5 feet. The summer drilling is not covered in this report. The first 16 winter holes were NTW sized, the rest from both programs were NQ2 sized core. Most of these holes were angled to north-northeast (azimuth 326°).

For the winter holes the minimum length was 148 feet, the maximum length was 734 feet and the average length was 406 feet.

12.0 SAMPLING METHOD AND APPROACH

Original USS sampling, generally on 10 foot intervals, honored some, but not all, the geological boundaries that were encountered. The PolyMet RC sampling transgressed boundaries, though the five foot chip samples diminish the opportunity for this to be of any consequence in a bulk mining (15 to 20 foot bench or greater) scenario.

Sampling of USS core by Geerts, Severson, and Patelke of NRRI at various times usually was on five foot samples and seldom crossed any significant geologic boundaries. Core sampling by PolyMet in 1999 and 2000 was usually on five foot intervals and crossed unit boundaries, as with the RC samples, the short sample length negates any major effect from this sampling choice. Sampling by PolyMet on the USS core in 2005 was generally on 10 foot intervals, but did not cross any major geologic boundaries and included some shorter intervals. Sampling of in-fill (NTW and NQ2) core in 2005 and 2007 used five foot samples in the main mineralized zone and 10 foot in the upper zones. This was adjusted to use smaller intervals in the upper parts with visible mineralization and did not cross geologic boundaries.

Large diameter core collected for metallurgical sample was sampled and assayed by the box with the goal of minimizing re-handling during the preparation and compositing of the bulk sample. Four inch core was sampled on an average interval of 3.45 feet, and PQ core was sampled on an average interval of 4.47 feet.

Table 12.1 shows average length of samples in Unit 1 and all other units for holes used in the resource model. Approximately 90.5% of Unit 1 and about 55.5% of the other units have been sampled project-wide. About 70% of the total exploration drilling by USS and PolyMet has been sampled across the property. Over 97% of the drilling intercepting the anticipated 20 year pit has been sampled.

Table 12.1 Sample Lengths

	Average Sample Length in Unit 1 (feet)	**Average Sample Length in Other Units (feet)**
USS Original Core	6.1	7.2
PolyMet Drilling	5.0	5.0
PolyMet Core Drilling	5.1	7.7
All Drilling	5.3	7.0

Sampling in Unit 1 (the main mineralized zone) is mostly continuous through the zone for all generations of drilling. The older PolyMet RC and core holes have continuous sample through the upper waste zones (which do have some intercepts of economic mineralization). Work in 2005 and 2006 essentially completed the sampling of historic USS core within the area likely to be mined. This broad sampling limits the possibility of bias in the sample set. The 2005 and 2007 sampling has been continuous along the drill hole.

12.1 Reverse Circulation Drilling Compared to Diamond Drilling

Hellman (2005, 2006) has analyzed duplicate assay sets from RC samples that are closely situated (within 20 feet of each other) to core samples.

Gatehouse (2000) summarizes the sampling and assaying of the RC samples:

> *6" hole RC drilling conducted by PolyMet in 1998 had assay samples over 5' taken at the rig using a 1/16 split creating (10-15lb) samples. This initially was were* [sic] *sent to Lerch Bros in Hibbing where preparation consisted of jaw and gyratory crushing of entire sample followed by riffle splitting (0.5lb) for final pulping. Assaying was done by Acme using the same techniques as above. One in ten samples had pulps sent to Chemex in Vancouver for check assaying using the same Fire Assay technique and similar (notionally stronger) aqua regia ICP technique for Co, Ni, Cu and other elements.*
>
> *In the 1999-2000 drilling and prior to February 2000, PolyMet sampling of 5' intervals of ½ BTW core was prepared at Lerch Bros Hibbing as above and assayed using Acme. One in ten samples were sent to Chemex as the check laboratory. Subsequently, for no apparent technical reason, Chemex were made the primary laboratory and Acme was used as a check. Analytical techniques remained the same.*

This analysis is summarized in Table 12.2 for DD-RC sample pairs that are at a similar elevation. For comparison, Table 12.3 shows pairs of closely situated core samples.

Table 12.2 Summary of Closely Situated RC and DD Samples

Parameter	DD Samples	RC Samples
Cu%	0.25	0.25
Ni%	0.07	0.08
Co (ppm)	62	70
Au (ppb)	32	36
Pd (ppb)	231	223
Pt (ppb)	54	59
Separation distance/ number of pairs	15.6/200	

Table 12.3 Summary of closely situated DD and RC samples

Parameter	DD Samples	RC Samples
Cu%	0.22	0.23
Ni%	0.07	0.07
Co (ppm)	60	71
Au (ppb)	97	98
Pd (ppb)	306	238
Pt (ppb)	62	56
Separation distance/ number of pairs	31.3 ft./98	

These results show excellent agreement even for gold, palladium and platinum. The differences between the RC and DD samples are of a similar level to those between adjacent pairs of diamond core samples. These results strongly support the integrity of both the RC samples and their assays, especially considering the many generations of sampling at NorthMet.

Wardrop reviewed the information available and agrees with Hellman and Schofield's conclusion.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

Sections 13. 1 and 13.2, were extracted from the Hellman 2005 report.

13.1 SAMPLE PREPARATION PRE-2000

Bright (2000), an employee of ALS-Chemex, summarized the sample preparation history of the project up to that point, the following is an extract from his summary.

> *Pre-1996, Lerch Brothers, and State of Minnesota crushed in a jaw crusher to about 1/4 inch and pulverized about 250g in a Bico type plate pulverizer to about -100 mesh (149 microns). Bondar Clegg also did some work on the project, crushing about the same, but pulverizing in a ring mill to -106 microns.*
>
> *In 1997, samples were sent directly to Acme Laboratories, where they crushed to finer than 1/4 inch and pulverized to about 149 to 106 micron range.*
>
> *In 1998, Lerch Bros. crushed and pulverized about 250g in an older ring mill to finer than 149 microns and sent to Acme.*
>
> *In 1999, Lerch Bros. prepped as in 1998, but sent to Chemex for analysis. Early on in the project, I requested a finer grind out of Lerch Bros, and they accomplished it. (-106 mic). Also in 1999, some drill cuttings and core were directly picked up by ALS Chemex. This is what we did in Thunder Bay:*
>
> *3.5-4kg of RC or percussion samples were dried and split to obtain two splits of each sample. Core samples of 2.5-3kg were crushed to pass >70% -2 mm, 200-300g were split out. Both r.c. cuttings and crushed core were shipped to Toronto for pulverizing in a ring mill to >95% -106 microns (-150 Tyler mesh).*
>
> *We also took selected core samples and crushed to -1/2 inch and put in a poly bottle, purged with nitrogen, and capped and sealed for special met / enviro work.*

13.2 SAMPLE PREPARATION PRE-2005

In summary (Gatehouse 2000a), pre-2005 drilling has been prepared in either of two ways depending on drill type or on the work load of Lerch Bros in Hibbing.

- ***5’ of 6” RC chips***

–1/16 split using an Eklund rotary Splitter (3-4kg)
–Jaw crush >> Gyratory Crusher >> Rolls crusher

–1/16 split to 200-250gms for pulverizing to 109micron (some data poorly pulped to 150micron)
–

•***5' of 1/2 core (1.65" & 2.2"diameter, BTW, NTW)***
–***Chemex***
–Rhino (Jaw) Crush to 2mm
–Split 200-250gms for pulverizing to 109micron

–***Lerch Bros.***
–Jaw Crush >> Gyratory Crusher
–Split 200-250gms for pulverizing to 149 micron

13.3 SAMPLE PREPARATION 2005 THROUGH TO 2007

The 2005 and 2007 sample preparation varied at the cutting and sampling stage with ½ core samples used for all NQ2 and NTW drilling and 1/8 core samples used for all four inch and PQ drilling. For smaller diameter core, the field duplicates were ¼ core, for the larger cores the field duplicates were 1/8 core.

All sample preparation after cutting was done at ALS-Chemex in Thunder Bay, Ontario, and all analyses at ALS-Chemex in Vancouver, B.C. Transport from Hoyt Lakes to Thunder Bay was by truck driven by ALS-Chemex employees and under ALS-Chemex custody.

Sample preparation methods were as follows:

- A 10 to 15 pound sample was crushed in a single stage crusher to 90% -2 millimeters;
- A 500-700 gram sample was split off and pulverized to -150 mesh in one pass;
- 1 in 20 samples also duplicated at the crusher;
- Approximately 200 grams for each sample were sent to Vancouver;
- All samples were analyzed for multi-element ICP package (four acid digestion) and PGE.
- Depending on batch size and other factors 1 in 10 to 1 in 20 samples were submitted as pulps for analysis for whole rock major elements, aqua regia digestion, REE and iron oxide (FeO).
- A standard, coarse blank (iron formation) or core (field) duplicate was submitted at a rate of one in every 12 samples.
- LECO Corporation (LECO) furnace sulphur was run on 1 in 10 samples.

13.4 ANALYTICAL HISTORY

The following discussion is derived largely from Patelke and Geerts (2006), an internal company report on the compilation and history of the newly revised PolyMet drilling database.

There are eight generations of sample preparation and analyses that contribute to the overall project assay database:

1. Original USS core sampling, by USS, 1969-1974;
2. Re-assaying of USS pulps and rejects, selection by Fleck and NRRI, 1989-1991;
3. Sampling of previously unsampled USS core, sample selection by Fleck and NRRI in 1989-1991;
4. Sampling of two NERCO drill holes in 1991;
5. Sampling of RC cuttings by PolyMet in 1998-2000;
6. Sampling of PolyMet core in 2000;
7. Sampling of previously unsampled USS core (sample selection work done by NRRI, done in two phases) in 1999-2001.
8. Sampling of PolyMet core from 2005 drilling, continued sampling of previously unsampled USS core in 2005-2006, and sampling from 2007 drilling, which continues protocols in place since 2005.

Employees of PolyMet (or Fleck Resources) have been either directly or indirectly involved in all sample selection since the original USS sampling. Sample cutting and preparation of core for shipping has been done by PolyMet employees or contract employees. Reverse circulation sampling at the rig was done by, or in cooperation with, PolyMet employees and drilling contractor employees.

USS took about 2,200 samples, mostly ten feet in length, and assayed for copper, nickel, sulfur, and iron. Assays were done at two USS laboratories in Minnesota, the Applied Research Laboratory (ARL) in Coleraine (now the NRRI mineral processing laboratory), and the Minnesota Ore Operations Laboratory (MOO) at the MinnTac Mine in Mountain Iron. Most of the original USS samples have been superseded by ACME and Chemex re-assays which included many more elements.

Analytical method at these USS laboratories is uncertain (AAS?). While standards were developed and used (as evidenced by documents in PolyMet files), it is not thought the standards were inserted into the sample stream in a blind manner. It is likely that these were used for calibration or spot checks.

There are less than 200 sets of USS copper-nickel values that remain in the database.

PolyMet used 63 coarse reject USS samples, weighing from five to seven pounds each, to create three standards in 2004. The 2004 assay results are consistent with estimates based on original USS assays of drill core. The ALS-Chemex results are shown in Table 13.1.

Table 13.1 ALS-Chemex assays compared with USS assays

	Cu %	Ni %	S %
Standard 1 expected value based on 1969 to 1974 USS assays	0.18	0.08	1.04
Standard 1 assayed value-2004 - Chemex	0.20	0.11	1.08
Standard 2 expected value based on 1969 to 1974 USS assays	0.36	0.14	0.88
Standard 2 assayed value-2004 - Chemex	0.37	0.15	0.82
Standard 3 expected value based on 1969 to 1974 USS assays	0.55	0.18	1.17
Standard 3 assayed value-2004 - Chemex	0.57	0.21	1.04

Averages are based on twenty samples of each standard with 4-acid assays completed in 2004. In all cases the USS results are slightly understated relative to the Chemex values. These standards have been used throughout the 2005 and 2007 programs.

The re-assaying of USS pulps and sampling of previously unsampled core completed in 1989-1991 was sponsored by Fleck Resources and partially involved cooperative work with the NRRI in Duluth. A large number of pulps and coarse reject from the original USS drilling were re-assayed for copper, nickel, PGE, and a full suite of other elements. The NRRI's contribution was the selection and sampling (and re-logging) of previously unsampled core. This was the first large scale testing for PGE done on the project.

About 2,600 of these analyses are in the current PolyMet database. All of this analytical work was done at ACME Laboratories (ACME) by aqua regia with ICP-ES for copper and nickel. Gold, platinum, palladium were by lead-oxide (PbO) collection fire assay/AAS finish. There is uncertainty about the level of standards used at ACME, though it is certain that they used some duplicates. There is agreement between the ACME assays done on pulps and rejects and the original USS work. PolyMet is using the USS sulfur value for most of these intervals. Sample preparation for all this work is thought to have been done by ACME.

The two NERCO BQ core holes (1991, 162 samples) were analyzed at ACME by the same methods.

There are 5,216 analyses from the RC drilling in the current PolyMet database. The 1998 RC drilling program started with all analyses being sent to ACME and check assays going to Chemex. RC sample collection involved a 1/16 sample representing each five foot run. These were sent to Lerch Brothers of Hibbing Minnesota, for preparation, and then sent to ACME for analysis. It is not certain that all samples were prepared at Lerch.

Part of the way through the RC program, PolyMet switched laboratories, and sent the samples to Chemex, with ACME undertaking check assays. Analytical methods for the RC samples were aqua regia digestion, fire assay for PGE, and ICP-AES for other elements. LECO furnace sulphur was run on nearly every sample.

Table 13.2 details the distribution and source of the assays for the RC drilling.

Table 13.2 Assaying of RC samples

	Number of Samples in Database
ACME	1,116
Chemex	1,927
Chemex Re-run (chosen over ACME or Chemex)	2,173

The PolyMet core drilling has all been assayed by ALS-Chemex. A matrix problem was discovered on some copper and nickel assays in the earlier groups in 2000. The problem was rectified and affected samples were re-assayed (eventually including some RC samples). Sample preparation was done at Chemex, though some may have been done at the Lerch facility — various original Chemex laboratory certificates show both “received as pulp” and give grind directions. ACME ran the check assays on these samples.

Some samples on USS in 2000 core were done through ACME.

On pre-2005, post USS sampling, intervals were generally five feet, sometimes adjusted for geological breaks. Analyses were aqua regia digestion with fire assay for PGE and ICP-AES for other elements. LECO furnace sulfur was run on most intervals. During this program standards and blanks were inserted into the sample stream.

Table 13.3 details the distribution and source of assays for PolyMet core drilling.

Table 13.3 Assaying of samples from all core drilling on project

	Number of Samples in Database
ACME	2,113
Chemex	22,409
Chemex Re-run	786
USS	119

Samples (collected by Severson et al., in 1999-2000 and Patelke, in 2000-2001) of previously unsampled USS core were assayed by ALS-Chemex. These samples were sawn at the Coleraine laboratory by University of Minnesota employees. At various times samples were prepared at the Coleraine laboratory, Lerch, and probably by ALS-Chemex.

Assays were by aqua regia digestion with fire assay for PGE and ICP-AES for other elements. LECO furnace sulfur was run on most intervals. During this program standards and blanks were inserted into the sample stream.

Samples were generally five feet in length, with some adjustments to avoid crossing geologic boundaries. This work was intended to supplement and in-fill the database, primarily in the Unit 1 mineralized zone as well as to provide some geochemical data for waste characterization.

The 2005 drilling and 2005-2006 sampling used four acid digestion on all samples, with aqua regia also done on about 1 in 10 samples. Since 2005 all samples have honored geological contacts.

PolyMet continued in 2005 and 2006 the process of assaying previously unsampled USS core, adding about 1,700 assays during 2005-2006. The majority of this is in the anticipated 20 year pit.

Table 13.4 shows previously unsampled intervals of USS core that were sampled by Severson et al (1999-2000) and Patelke (2000-2001).

No sieve tests are available for pre 2005 work. These were performed for samples from the 2005 and 2007 drilling programs.

Table 13.4 Details of Sampling of USS Core by PolyMet

	Number of Samples in Database from each Laboratory	**Minimum Number of Duplicates and/or Re-runs**
Chemex (Post Re-run)	5,032	229

13.5 Core Storage and Security

The USS core has been stored, either at the original company warehouse in Virginia, Minnesota during drilling, or more recently at the Coleraine Minerals Research Laboratory (now a part of the University of Minnesota). Core has been secured in locked buildings within a fenced area that is locked at night where a key must be checked out. The NERCO BQ size core is also stored at this facility.

The PolyMet core and RC reference samples were stored in a PolyMet leased warehouse in Aurora, Minnesota during drilling and pre-feasibility. Core and samples were then moved in 2002 to a warehouse in Mountain Iron, Minnesota where they remained until 2004. They were then moved to a warehouse at the current PolyMet field office site on the Cliffs-Erie property in Hoyt Lakes. Access to this warehouse has been limited to PolyMet employees.

14.0 DATA VERIFICATION

PolyMet staff have made a STRONG commitment to the geological and assay database and have, as far as is possible, produced a database that is complete, well documented and traceable.

14.1 POLYMET DATA COMPILATION AND VERIFICATION 2004

Data verification by PolyMet has involved the checking of digital data against that in the paper records and also establishing the quality and source of that data.

In 2004 all tables in the drillhole database (header, survey, lithology, assay) were reconstructed from digital and paper records and checked by PolyMet staff against the completely re-organized original paper data. Known discrepancies were addressed and corrected. In the assay data file, erroneous or suspect data was not removed, but was flagged to prevent its inclusion in the “accepted values” file used for evaluation.

The 2004 recompilation included a generalized first-pass review list for finding any database errors or suspect assays as well as facilitating further sorting and analysis. This occurred during and after assembly of the current PolyMet drill database and prior to the finalization of an “accepted values” assay data file for project evaluation. Suspect values were either corrected or flagged for exclusion from the final “accepted values” file.

This review by PolyMet included the following quality assurance steps:

- The completeness of paper records was confirmed for each hole and assay certificates were checked to determine if they were the final versions;
- Drill hole numbers were checked for correct formats;
- Drill hole lengths were checked against data in PolyMet database header file. Any assay or lithology depths recorded as below the length of the hole were assessed;
- Depth to overburden were checked against lithological logging, many RC samples, in particular, were shown as having been collected in the overburden, these were then isolated and rejected;
- The master assay file as a whole was sorted by each element in every laboratory group. The data filter in Excel was used to inspect and check the lowest and highest value samples. The highest values were checked against the paper records. The lowest values were checked against detection limits for that period. Any discrepancies found were checked and corrected;
- All assays below detection limit were designated with “less than symbols (<)”. All “<” were corrected to the detection limits listed by the laboratories for that time as shown in their “schedules of services”. It was found that ACME did not show the “<”

values in their older digital data reports, these had to be checked against paper records and entered manually;

- Where LECO Corporation furnace sulphur analyses had been run, these were compared with the ICP scan sulphur, if one or other seemed out of range, the possible reason was investigated and corrected if possible. If not reconcilable, the data was flagged as not to be used;
- Copper and nickel ppm values were converted to percent for the final step before export of data for resource estimation;
- If the original copper value was above the upper detection limit of the method, the determination had always been re-run by a different method, this value was merged into the database as copper percent data;
- Duplicates were noted as field duplicates (two 1/4 core samples), or sample preparation duplicates (laboratory duplicates) where a crushed and/or ground sample was split at the laboratory. These duplicates were considered to have been assayed at about the same time. Copper and nickel values were compared; where these values did not reasonably match both samples were removed from the final data set;
- Where there are multiple “good” assays for copper, nickel, etc, i.e., USS and ACME, or ACME and Chemex, (the same intervals, but generally done at different times) the values were compared; for those that did not match, a preferred value was resolved through examination of the data or both samples were removed from consideration for the final data set.;
- Obvious laboratory typographical errors or inconsistent data were checked and either corrected or flagged to not be used. These included simple laboratory errors such as double decimal points or mis-typed sample numbers;
- Copper, nickel, sulfur, platinum, palladium and gold were plotted as a function of time to highlight clusters of data well above or below the average for the group, none were found;
- Duplicate results were plotted for USS work in the 1970s, to determine any discrepancies;
- All “check assays” were checked as duplicate pairs; if the samples were not in reasonable agreement, then the samples were flagged for possible exclusion.

14.1.1 *First Step*

The first step was to sort the data into subsets by laboratory and time.

14.1.2 *Second Step*

The second step was to compare all the “intentional duplicate pairs”, i.e., all pulp duplicates and quarter core duplicates done by the same laboratories at (more or less) the same time. PolyMet calculated a copper:copper ratio for these pairs, sorted from lowest to highest, graphed these, and generally discarded pairs where the copper:copper ratio values were beyond the inflection point of the sigmoidal graph. This somewhat depended on the geologist’s view of the quality and size of the sample group, but usually this was any difference greater than about 10% to 15% of the pair. Experience in the data set, as well as some other ratio tests, were also used to see if numbers were reasonable. Only a single sample from each pair that PolyMet believed matched duplicate and original was used.

14.1.3 THIRD STEP

The third step was to compare pairs or multiple samples on the same interval by different laboratories at different times (USS and ACME, ACME vs. Chemex vs. Chemex rerun etc.) The same approach was used, graphing copper:copper ratios and eliminated those pairs outside some range determined by inspection of the graph, which again was group by group dependent. This was more subjective. The goal here was to find mis-numberings or mis-orderings, not to quantify the quality of the data. Other ratio tests were also applied to identify if values were within expected ranges (copper:sulphur, copper:nickel).

As a result of this review, about 1,800 intervals were flagged as suspect and filtered out of the "accepted values" data used for resource evaluation.

An unexpected, but welcome, result of the 2004 data re-compilation was the discovery that about 5,000 samples taken by Severson et al. (2000) and Patelke (2001) on stored USS core had not been previously entered into any database. This addition greatly improved the data density within Unit 1, as well as improving the waste characterization data set for the upper units.

14.2 HELLMAN AND SCHOFIELD ASSESMENT

Dr. Hellman of Hellman and Shofield Pty Ltd. undertook several assessments of the database and has advised PolyMet of a number of minor issues. These have been addressed. Dr. Hellman conducted spot checks of the digital data by comparing it with assay certificates. In addition, Mr. S. Gatehouse, a former North Mining employee, now an employee of Hellman and Schofield Pty Ltd, did a detailed review of sampling and QA/QC aspects whilst in the previous employ of North. Although a number of concerns were identified, these did not relate to the possibility of overstatement of grade but, rather, highlighted the conservative nature of the assays.

A re-study by Hellman and Schofield of PolyMet's work of 205 coarse blanks with drill samples in 2000 shows only three samples exceeding 70 ppm nickel. These three samples appear to have resulted from transcription errors. PolyMet has, however, identified some samples that were incorrectly labelled and has deleted these from the database. There is negligible cross contamination for copper, gold and platinum as evidenced by the rest of the data set. Approximately 2% of coarse blanks have palladium in excess of 20 ppb which may suggest either some cross-contamination during sample preparation or a variable background content in the blank. In another sampling program in 2000-2001 there were negligible values above lower detection limits for gold, palladium and platinum for 82 submitted blanks. The use of pulp blanks, as well as the coarse blanks, may help to resolve any future issues regarding higher than expected values.

14.3 QA/QC PROGRAM

A comprehensive QA/QC program involving the use of coarse blanks, standards and duplicates has been instigated under the direction of Hellman and Schofield and Lynda Bloom of ASL, Toronto. This process consisted of the production of three matrix-matched standards from the Duluth complex, sample preparation and homogenization, homogeneity testing, formulation of Recommended Values based on a round robin and routine insertion of standards on an anonymous basis. The three standards have copper concentrations in the approximate range 0.15 to 0.60% and nickel from 0.1 to 0.2%. Homogeneity of pulps, as determined by coefficients of variation from 20 replicate assays, is excellent with, for example, values less than 2% for copper and nickel and less than 5% for palladium.

There were very few assay failures found in the drill programs with Chemex and they are investigated in batches. Depending on the nature of the failures, samples may be re-run or discarded from the data set.

14.4 WARDROP ASSESMENT

Wardrop carried out an internal validation of the 330 drill holes in the NorthMet database used in the resource estimate. Data validation has been done throughout the years by various consultants to PolyMet prior to the 2007 drill campaign and therefore the hole selection for Wardrop's validation was heavily weighted on the 2007 drilling with spot checks of the USS, 1999, 2000 and 2005 drill campaigns. A total of 40 holes were checked amounting to 3,121 individual samples or 9% of the total sample count in the database.

The error rate was found to be exceptionally low with only one sample (or 0.03%) entered erroneously in the GEMS database. In addition, three samples were found to have a laboratory certificate value available but were entered in GEMS as not sampled because they failed to meet PolyMet's quality standard.

During the validation, Wardrop found that values from laboratory certificates prior to the 2005 drill campaign were rounded half-up at the 3rd decimal while certificate values from the 2005-2007 drill campaign were truncated to the 3rd decimal during the parts per million (ppm) to percent conversion, thereby slightly understating the actual laboratory value.

The core handling facility at NorthMet is located in the former LTVSMC light duty mechanical shop and warehouses. The facility is large, well lit and equipped with overhead cranes and front end loaders assisting staffs at moving palletized core bundles and crates containing sample bags ready for shipment to the ALS-Chemex laboratory in Thunder Bay, Canada. The core logging room is very large and well lit and contains three large tables allowing Geologists to lay out in excess of 1,000 feet of core at any one time. Three diamond core cutting saws plus a spare are located in the core cutting room.

A summary of the holes validated by Wardrop can be found in Table 14.1.

Table 14.1 Holes Validated by Wardrop

HOLE-ID	Source	Elements Checked	Total Number of Samples	Errors	Missing in Gems
26025	Lab cert paper copy	Cu, Ni	176	1	
26093	Lab cert paper copy	Cu	163	0	
99-309B	Lab cert paper copy	Cu	142	0	
00-337C	Lab cert paper copy	Cu, Ni, Pd	121	0	1
00-352C	Lab cert paper copy	Cu, Ni	156	0	2
00-352C	Lab cert PDF	Cu, Ni	156	0	
05-406C	Lab cert PDF	Cu	107	0	
05-451C	Lab cert PDF	Cu, Ni, Pd, Pt, Au, Co	150	0	
05-501C	Lab cert PDF	Cu, Ni, Pd, Pt, Au, Co	151	0	
05-502C	Lab cert PDF	Cu, Ni, Pd, Pt, Au, Co	182	0	
07-510C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	44	0	
07-511C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	32	0	
07-512C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	28	0	
07-513C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	42	0	
07-514C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	46	0	
07-515C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	45	0	
07-516C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	70	0	
07-517C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	58	0	
07-518C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	71	0	
07-519C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	60	0	
07-520C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	73	0	
07-521C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	55	0	
07-522C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	49	0	
07-523C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	43	0	
07-524C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	62	0	
07-525C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	41	0	
07-526C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	55	0	
07-527C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	59	0	
07-528C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	24	0	
07-529C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	19	0	
07-530C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	24	0	
07-531C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	27	0	
07-532C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	96	0	
07-533C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	116	0	
07-534C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	35	0	
07-535C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	64	0	
07-536C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	26	0	
07-538C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	44	0	
07-539C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	98	0	
07-540C	Electronic XLS Lab cert	Cu, Ni, Pd, Pt, Au	111	0	
		Total checked	**3121**	**1**	**3**
		Total Samples in Database	**34641**		
		Percent checked	**9.0%**		
		Percent errors		**0.03%**	
		Percent missing			**0.10%**

During the site inspection, Wardrop located 12 drill hole collars using a hand held Garmin GPSMap 60CSx global positioning instrument. Seven of those holes are used in the resource evaluation. The others are part of the summer 2007 drilling campaign not covered by this report. The average difference between the Wardrop GPS collar against the database value was 22 feet, which is very good considering that the instrument reported an accuracy of ±17 to 18 feet at most field locations surveyed which is typically influenced by vegetation cover and number of satellites seen by the instrument on the day the survey was taken.

On location, Wardrop also inspected the core facility, core cutting room and shipping crates, geological logging and collected a limited number of check samples. Figure 14.1 shows a few images taken during the site inspection.

The senior author regards the sampling, sample preparation, security and assay procedures as adequate to form the basis of resource estimation.

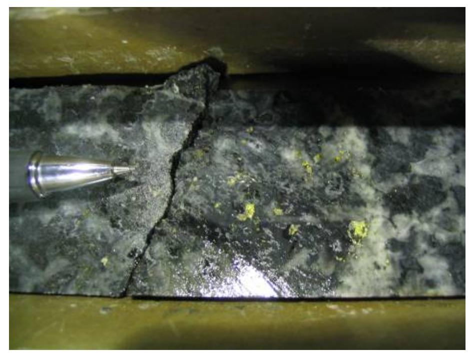
Figure 14.1 Site Visit Photos

Crate almost ready for
shipment to ALS Chemex

Core cutting in progress

Core storage facility

Typical Copper mineralization



Collar coordinate hole 98-108B

USS steel core re-sampled by
PolyMet

15.0 ADJACENT PROPERTIES

There are no adjacent properties that PolyMet is proposing to explore or drill as part of any drilling program or other evaluation.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The Pre-feasibility Study of the NorthMet Project which was completed in 2001 and filed on SEDAR contained a description of metallurgical test work and hydrometallurgical process design work undertaken as an integral part of that Pre-feasibility Study. Further mineral processing developments were described in a report entitled “Technical Update of the NorthMet Project Incorporating the established Cliffs-Erie crushing / milling / concentration facilities with the Hydrometallurgical processes described in the May 2001 Pre-feasibility study.” by P. Downey and Associates, dated July 2004 and filed on SEDAR.

Since that time additional mine engineering work has been undertaken along with metallurgical test work by SGS Lakefield Laboratories and extensive process design and engineering work by Bateman Engineering Pty Ltd. as part of the DFS. The results of this DFS were filed on SEDAR September 20, 2006 (Hunter, 2006). There has been no substantive change since that time.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 DATA

Mineral resource estimates have been completed by Wardrop for PolyMet's NorthMet polymetallic deposit. The deposit is located in the St. Louis County in north-eastern Minnesota, USA at Latitude 47°36' north, Longitude 91°58' west, approximately 70 miles north of the City of Duluth and 6.5 miles south of the town of Babbitt. PolyMet Mining Corp. (as Fleck Resources), acquired a 20-year renewable mineral lease to the NorthMet deposit in 1989 from US Steel (USS), which disposed of much of its non-core assets to RGGS Ltd. in 2003 consequently transferring the underlying mineral rights to RGGS Ltd.

Gemcom software GEMS 6.04™ was used for the resource estimate in combination with Sage 2001 for the variography. The metals of interest at NorthMet are copper, nickel, cobalt, platinum, palladium and gold. Minor amounts of rhodium and ruthenium are also present although these elements are not significant. Sulphur was also estimated for process and environmental purposes.

PolyMet provided the digital data files in two batches. The first shipment, dated May 21st, 2007, consisted of a series of Microsoft Excel spreadsheets for the digital drill hole database containing a complete data set from 394 holes, a Gemcom project, a triangulation workspace with the top surfaces of the different units on the NorthMet deposit, two geological domains for the Virginia Formation inclusions, two grade shell domains and a topo and ledge surface. On May 25th, 2007, Wardrop received additional assay results for 10 holes. In addition to the drill hole data from all drilling carried out before the beginning of 2007, the June 2007 resource model contains drillhole locations and sample location data from a total of 47 holes drilled during January and February 2007. Unfortunately because of extended turnaround time at the analytical laboratory, it was only possible to include assay data from 30 drill holes which were used for grade interpolation purposes. However, because the exact spatial position of all sample intervals was known (including those for which assay results had not been returned) it was possible to use all drill holes for confidence categorization. Appendix A lists the data that was available for the June 2007 resource evaluation.

As shown in Table 17.1, out of a total of 404 drill holes, 340 were used for the resource evaluation grade models and an additional 17 holes with pending assays were used for the category model. A total of 47 stratigraphic control drill holes without assays were left out of the resource model.

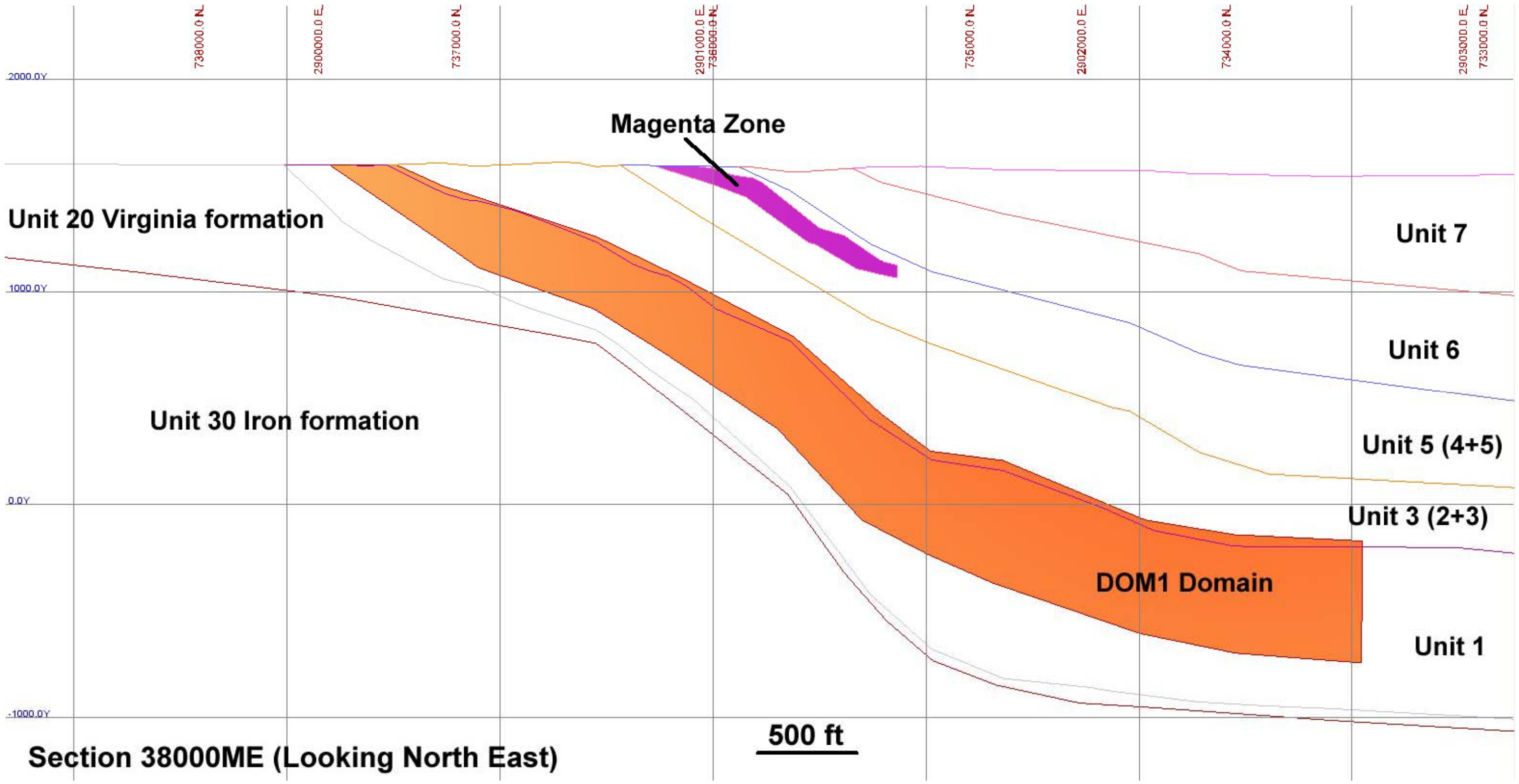
The PolyMet NorthMet project is divided into seven main lithological units and two grade shell domains. A typical cross section (Figure 17.1) shows the stratigraphic position of the units in relation to the grade shells DOM1 and Magenta Zone.

Table 17.1 Total Number of Holes Used for the June 2007 Resource Estimate

	Number of Holes	Total Length (ft)	Total Number of Assays
Holes with assay results 2007	30	11,761	1,650
Holes with assay results pre-2007	310	261,227	31,791
Holes outside the pit area/hydro holes	47	29,827	0
Holes with assay result pending 2007	17	7,342	1,200
Total	404	310,157	34,641

The bulk of the mineralization is located within the two grade shells with minor amounts in the remainder of Units 1 through 7. The Virginia Formation typically carries very low copper, nickel, palladium, platinum, gold and cobalt values but has elevated sulphur values and has been modelled for waste characterization purposes. No grades were interpolated in the Iron Formation (Unit 30).

Figure 17.1 Domains and Unit Code



17.2 EXPLORATORY DATA ANALYSIS

Exploratory data analysis is the application of various statistical tools to characterize the statistical behaviour or grade distributions of the data set. In this case, the objective is to understand the population distribution of the grade elements in the various units through the use of such tools as histograms, descriptive statistics, probability plots and contact plots.

Statistical analysis of the data was performed on each of the unit codes and also on the grade shell domains.

17.2.1 ASSAYS

Table 17.2 shows the assay mean values for the different unit codes. Units 1, 5 and 6 show elevated metal values, with minor amounts distributed in Unit 7. The complete set of descriptive statistics for the NorthMet deposit is included in Appendix B.

Table 17.2 NorthMet Raw Assay File by Unit – Mean Grade

Units	30	20	1	2+3 (3)	4+5 (5)	6	7
Number of Samples	77	1412	19160	7802	2769	1425	366
Cu (%)	0.001	0.017	0.213	0.064	0.092	0.143	0.028
Ni (%)	0.001	0.012	0.067	0.034	0.036	0.051	0.038
Co (ppm)	0.758	23.360	66.620	52.480	50.640	63.370	64.160
Pt (ppb)	1	2	45	23	31	60	16
Pd (ppb)	1	7	177	73	82	149	31
Au (ppb)	1	3	24	13	16	25	6
S (%)	0.02	1.49	0.62	0.16	0.21	0.22	0.06

17.2.2 CONTACT PROFILES

Wardrop examined in detail the contact relationship between the individual units and between the units adjacent to the grade shell models. Only copper was used for this study assuming that nickel, cobalt and platinum, palladium and gold would behave similarly since the correlation coefficients (Hellman) are known to be high. No other elements were evaluated.

The software calculates the average grade of an element over distance from a boundary between two lithologies, two units/domains or two indicator values. Contact relationships can be used to determine the inclusion or exclusion of sample data points used in the interpolation of one particular grade domain and also to assist in confirming geological interpretations. A gradational contact (or soft boundary) generally allows the interpolation parameters to include a limited number of samples from the adjoining domain while a sharp contact (or hard boundary) will restrict the sample points used in the interpolation to its own domain.

Results from the analysis are as follows with accompanying plots in Figure 17.2:

- The expected hard boundary between the Virginia Formation (Unit 20) and Unit 1 is clearly visible in the contact plots with no grade enrichment at the contact and a slight depletion in Cu% grade up to 20 ft from the boundary inside Unit 1.
- Units 1 and 3 (2 + 3) also show a hard boundary with a large variance in grade and no apparent enrichment or depletion at or near the boundary.
- Units 3 (2 + 3) and 5 (4 +5) show a gradational contact with copper enrichment near the boundary.
- Units 5 (4 + 5) and 6 show a gradational contact near the boundary and a slight depletion internal to Unit 6, followed by an enrichment. Note that the data point count for Unit 5 (4 + 5) is 2609 points with 393 points inside the higher grade Magenta Zone. It is therefore normal to expect a higher grade in Unit 6 than Unit 5 (4+ 5).
- Units 6 and 7 both show gradational contacts and even grade distribution. The point count for Unit 7 is low at 358 points.

On the basis of the unit contact profile results, the assay points located in the DOM1 and Magenta Zone grade shell models were grouped by unit code and additional contact profiles were evaluated between the following boundaries as shown in Figure 17.3. The Magenta Zone overlays Units 3 (2 + 3), 5 (4 + 5), 6 and 7, however, since the Magenta Zone is primarily in contact with Unit 5 (4 + 5) and 6, only the points from these Units were considered for the contact study relating to the Magenta Zone.

- Unit 1 and DOM1 points located in Unit 1.
- DOM1 points located in Unit 1 and DOM1 points located in Unit 3 (2 + 3).
- Unit 3 (2 + 3) and DOM1 points located in Unit 3 (2 + 3).
- Unit 5 (4 + 5) and Magenta Zone points located in Unit 5 (4 + 5).
- Magenta Zone points located in Unit 5 (4 + 5) and Magenta Zone points located in Unit 6.
- Unit 6 and Magenta Zone points located in Unit 6.

Results for DOM1 grade shell indicate the following with accompanying plots in Figure 17.4:

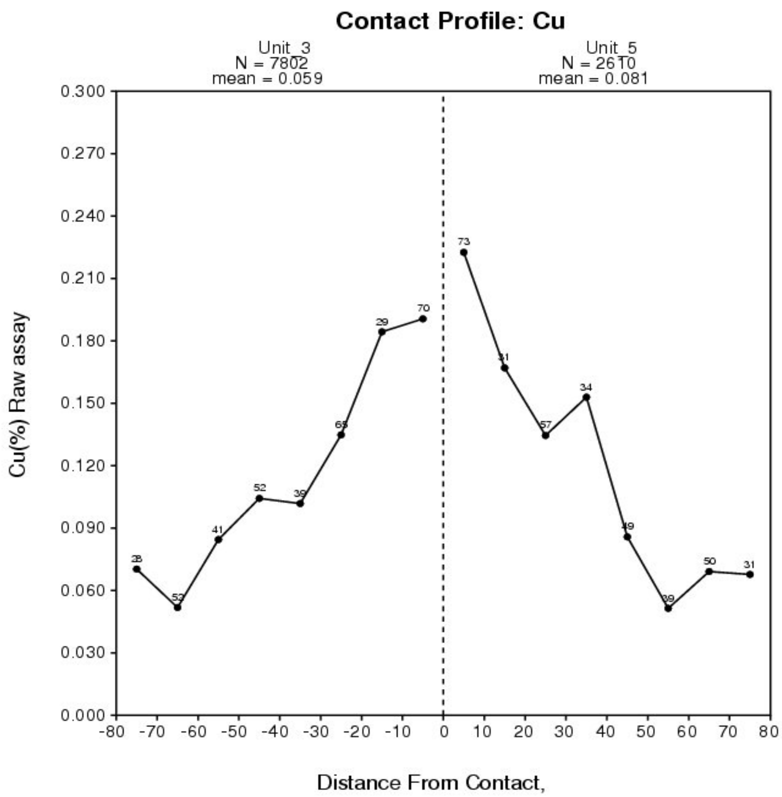
- Gradational contact across Unit 1 and the DOM1 bottom boundary.
- Sharp contact with no enrichment between DOM1 bottom and DOM1 top mimicking the Unit 1 and Unit 3 (2 + 3) contact profiles.
- Gradational contact across DOM1 top and Unit 3 (2 + 3).

Contact plots for across the Magenta Zone indicate the following with accompanying plots in Figure 17.5:

- Semi-soft contact between Unit 5 (4 + 5) and the bottom of the Magenta Zone. Grade increases gradually inside the Magenta Zone.

- Relatively sharp contact exists between the Magenta top and Unit 6. Grade decreases gradually from the core of the Magenta Zone toward the contact. The copper grade in Unit 6 is consistently low.

Figure 17.2 Unit Contact Profiles (distance in feet)



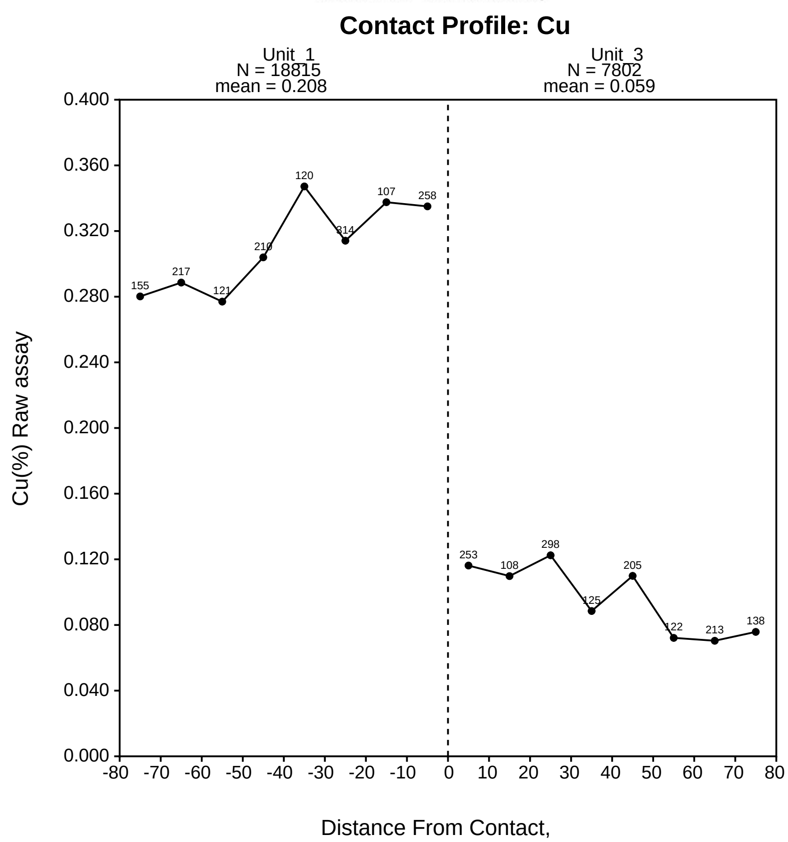
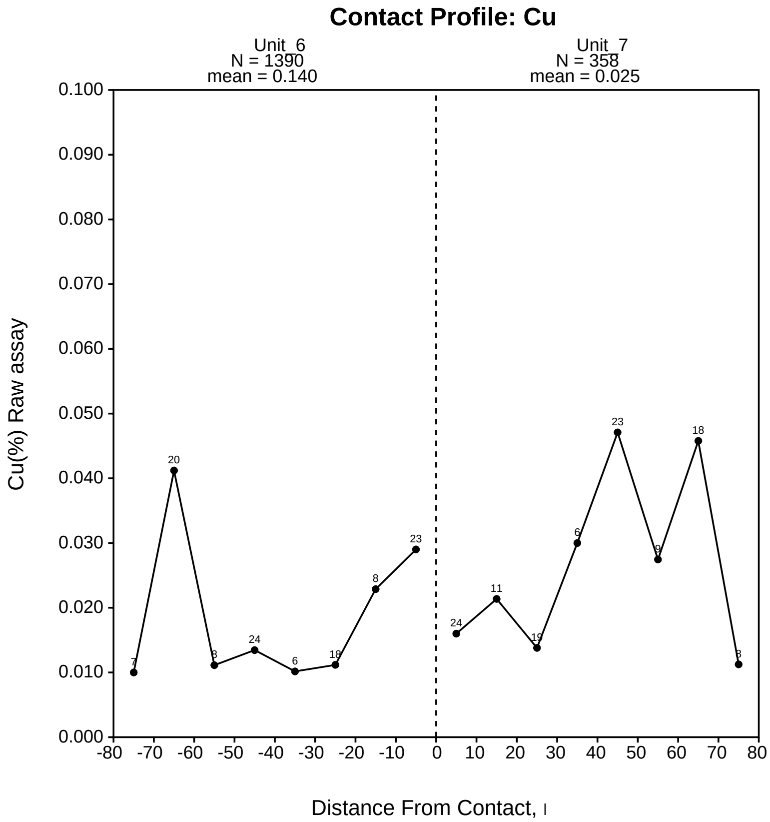


Figure 17.2 Unit Contact Profiles (distance in feet) Continued



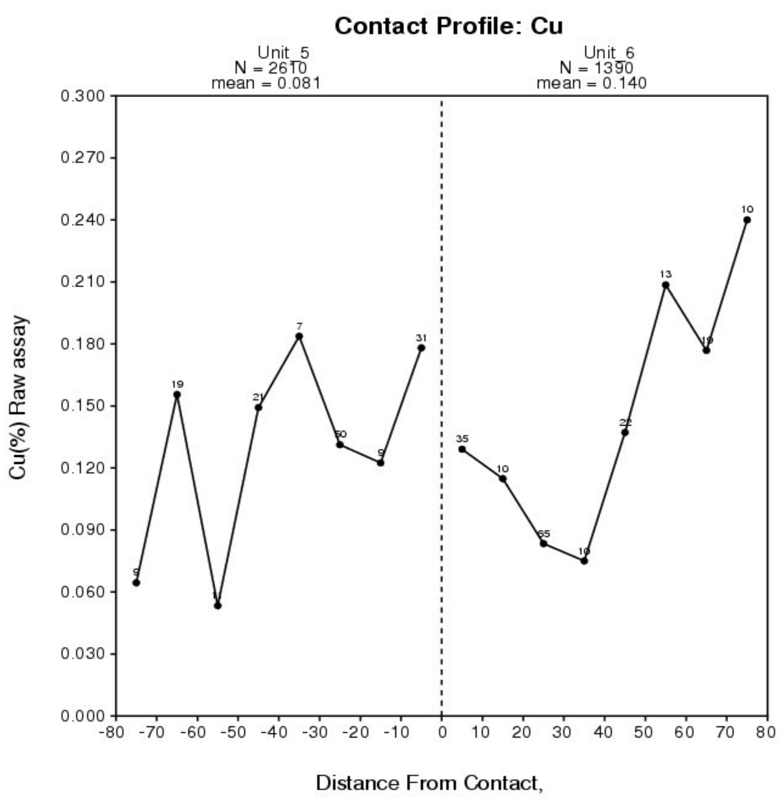


Figure 17.2 Unit Contact Profiles (distance in feet) Continued

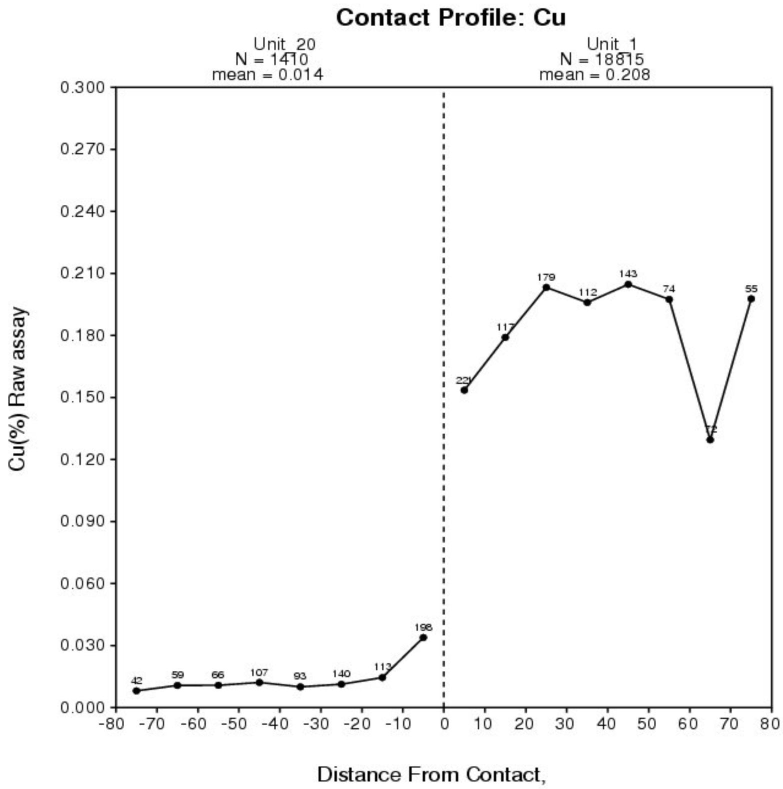


Figure 17.3 Schematic Cross-Section Illustrating Unit and Domain Nomenclature and Contact Profiles

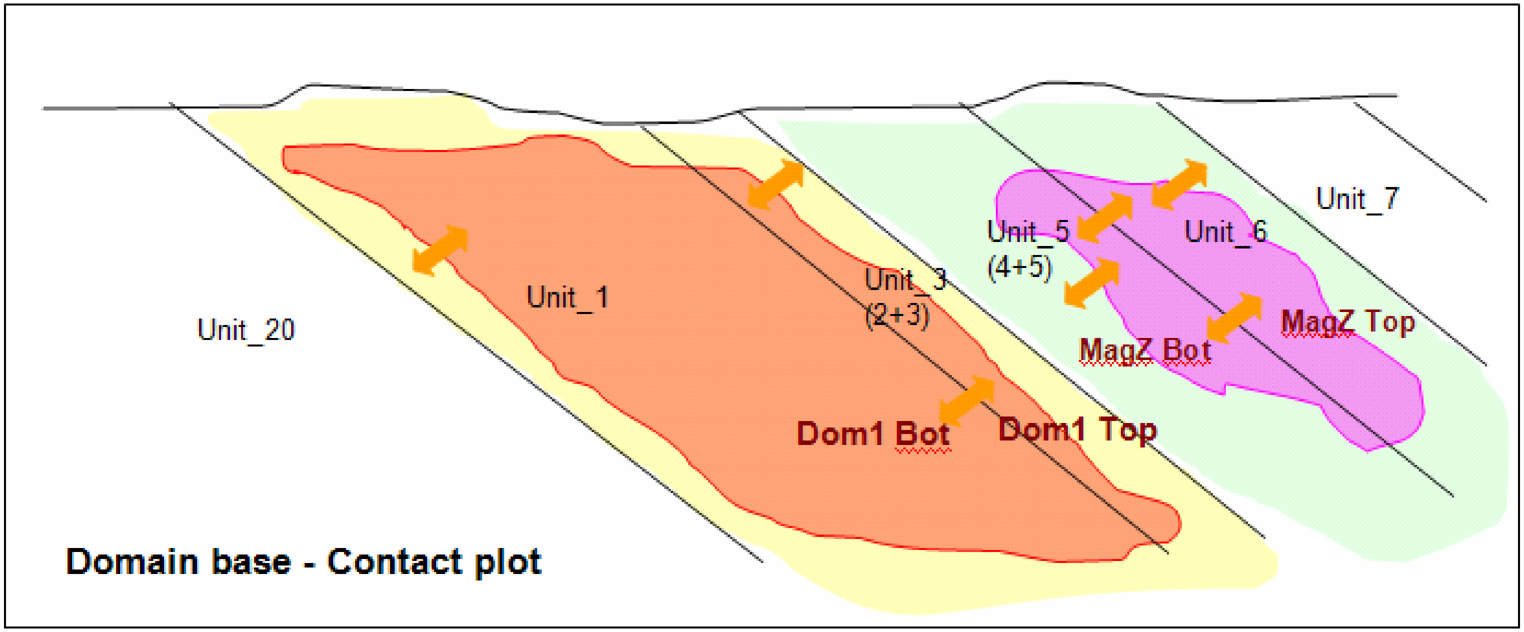


Figure 17.4 Grade Shell DOM1 Contact Profiles (distance in feet)

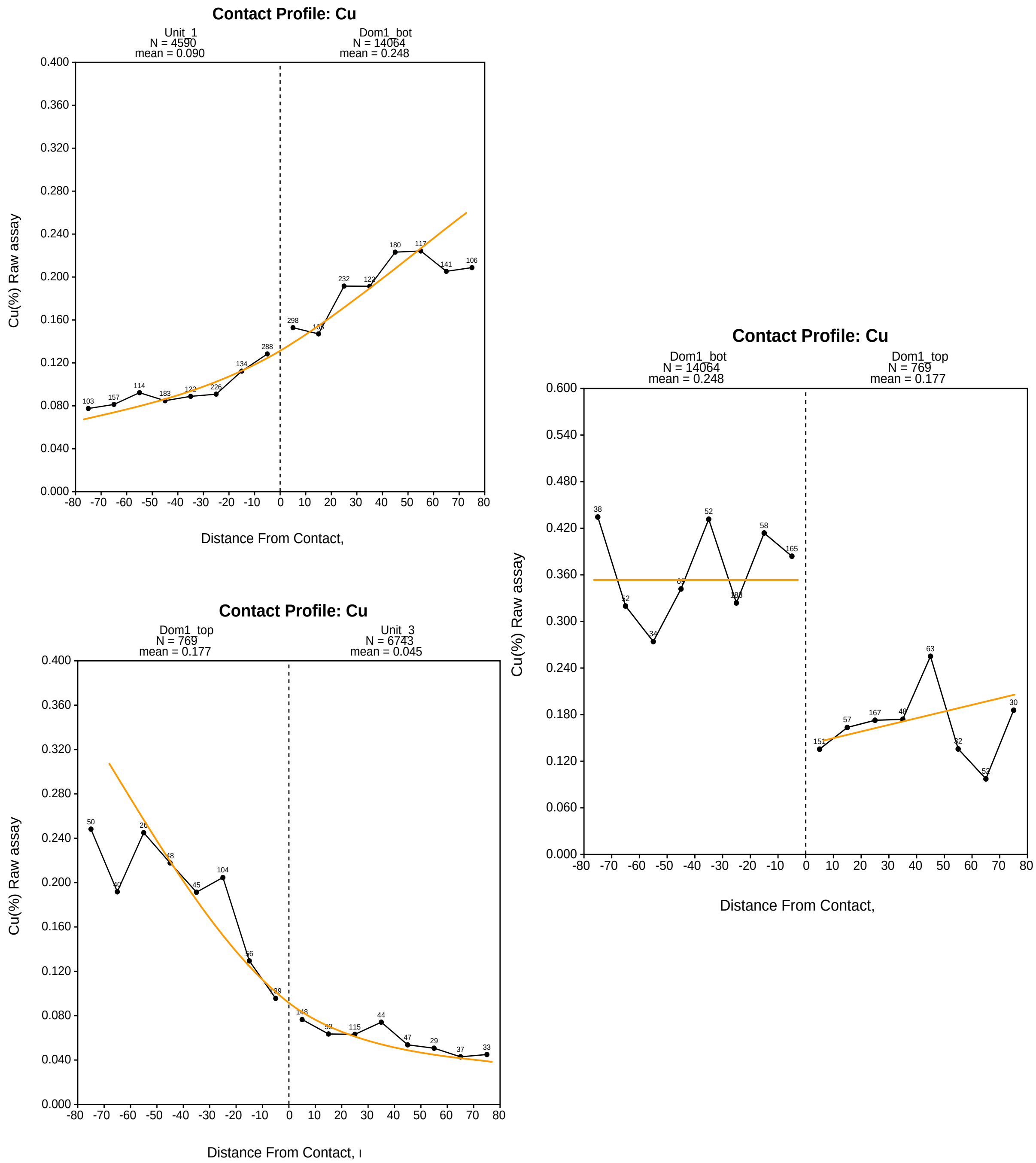
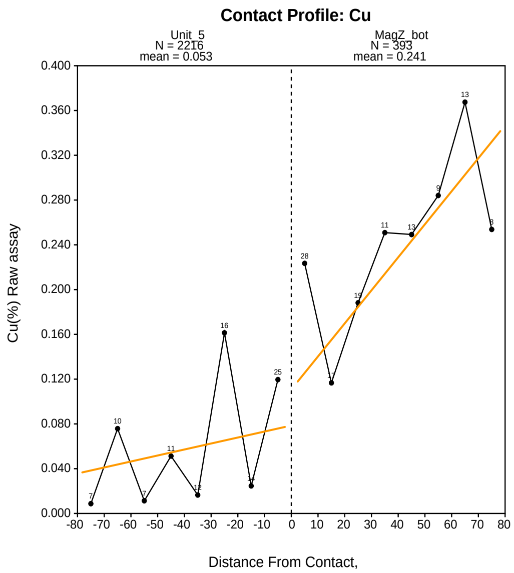
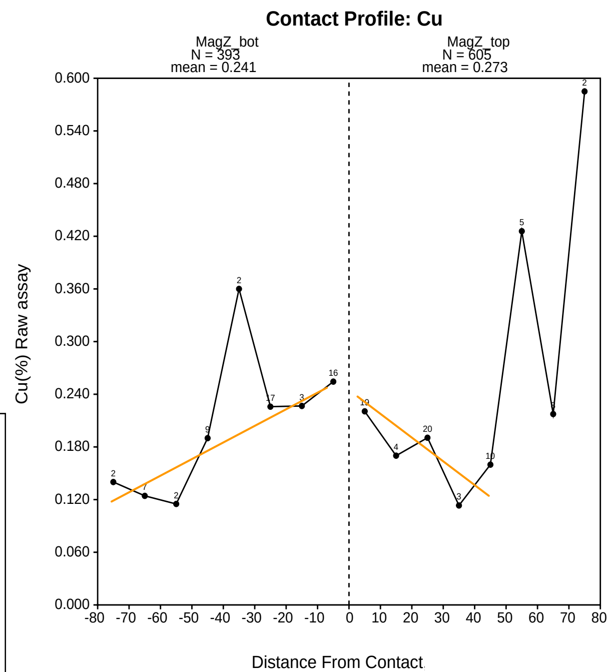
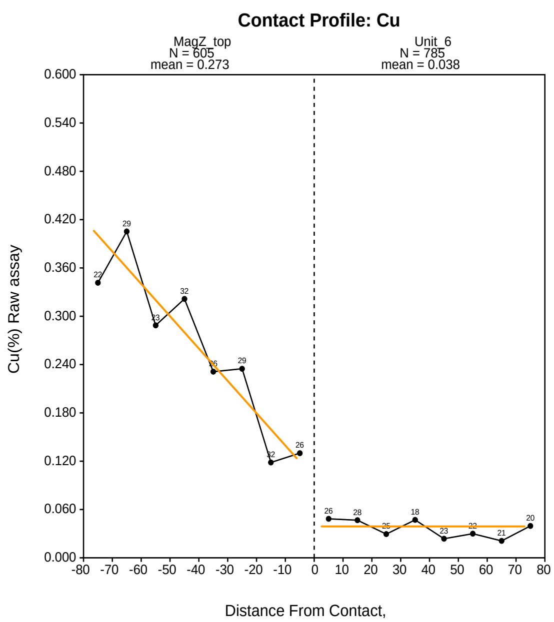


Figure 17.5 Contact Profile for Magenta Zone Grade Shell (distance in feet)







17.2.3 GRADE CAPPING

A combination of decile analysis and review of probability plots were used to determine the potential risk of grade distortion from higher-grade assays. A decile is any of the nine values that divide the sorted data into ten equal parts so that each part represents one tenth of the sample or population. In a mining project high grade outliers can contribute excessively to the total metal content of the deposit.

Typically in a decile analysis capping is warranted if:

- The last decile has more than 40% of metal or;
- The last decile contains more than 2.3 times the metal quantity contained in the one before last or;
- The last centile contains more than 10% of metal or;
- The last centile contains more than 1.75 times the metal quantity contained in the one before last.

The decile analysis results shown in Appendix C indicate that no grade capping is warranted for the DOM1 and Magenta Zone grade shell domains. Unit 1, Unit 20 and Units 3, 4, 5, 6 and 7 outside the Magenta Zone show significant high grade outliers and a high grade search restriction was considered by Wardrop as appropriate for the NorthMet deposit. Table 17.3 compares the analyses and tabulates the implemented level.

Table 17.3 Threshold Value Used for High Grade Search Restriction

	Cu (%)	Ni (%)	Co (ppm)	Pt (ppb)	Pd (ppb)	Au (ppb)	S (%)
Unit 20	0.7	0.18	n/a	200	1000	80	7.5
Unit 1 outside DOM1 Grade shell	1.8	0.6	n/a	450	1600	500	7.5
DOM1 (in Unit 1)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
DOM1 (in Unit 3)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Units 2/3, 4/5, 6 and 7 excluding Magenta Zone	2.1	0.4	n/a	700	4000	500	8
Magenta Zone	n/a	n/a	n/a	n/a	n/a	n/a	n/a

The search restriction size was based on a next block, diamond shape pattern with a 75 foot radius from the block center. Essentially, a sample search selection ellipsoid is applied to a block during the interpolation process. Points that are above the threshold value and outside the smaller restricted search ellipsoid are eliminated from the set during the interpolation. Grade for the block is calculated and the process is repeated for the next block. The end result is that all high grade samples are used at face value but their range of influence is limited to an area that is more or less 75 feet in diameter.

17.2.4 COMPOSITES

Core length statistics, indicate the sampling intervals in the two grade shell domains for the NorthMet deposit average 5.6 feet in the DOM1 domain and 6 feet in the Magenta Zone. The upper third quartile shows 10 feet or less for Units 1, 3, 5, 6, 7 and 20. Based on that information a 10 foot composite length was selected. This length allowed for a few samples of greater length to be broken without affecting the variance and shorter samples to be combined to produce a sample of proper support. Summary statistics are shown in Table 17.4.

Assays were composited in 10 foot intervals starting at the toe of the hole and honouring the geological hard boundaries. Composite remnants, which are composites less than 10 feet in length, are unavoidable if the hard geological boundaries are to be honoured. The compositing methodology used by Wardrop locates the composite remnant (<10 feet) in Unit 20 and on the wider side of the Unit 1-Unit 3 boundary while minimizing the composite remnants in the remaining units.

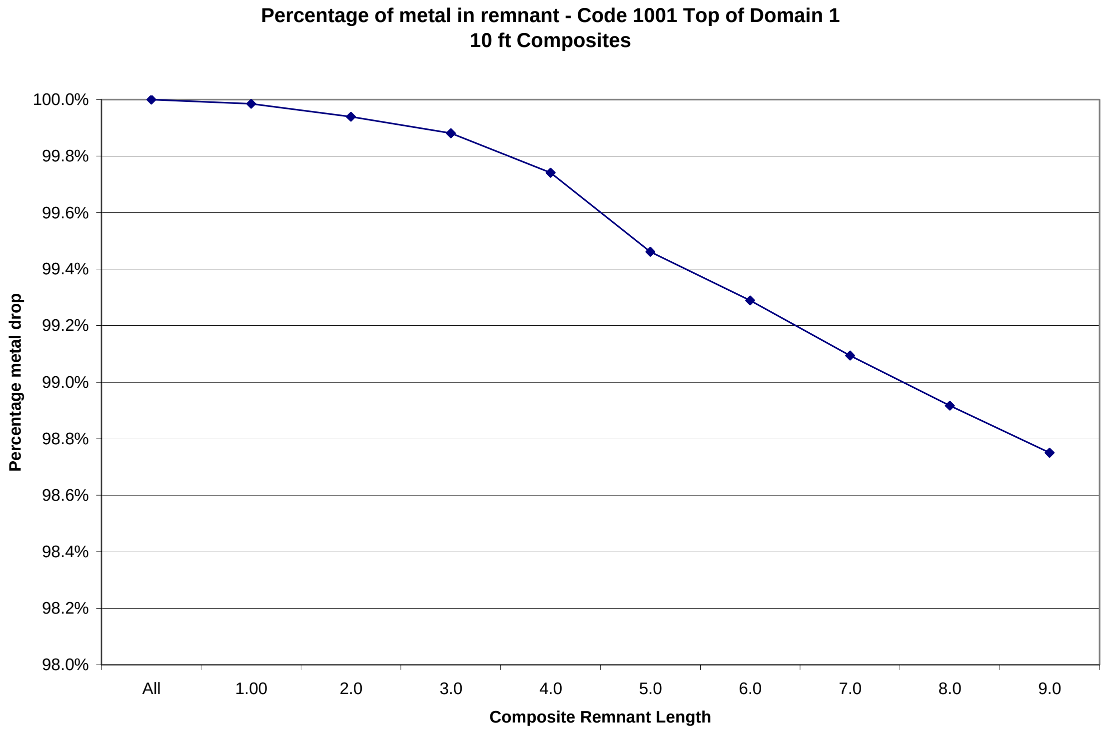
Table 17.4 Core Length Summary Statistics (in ft)

Unit Code	30	20	1	2/3	4/5	6	7	DOM1	Magenta Zone
Number of values	32	952	4531	6648	2141	749	323	14913	1089
Minimum (ft)	1.0	0.3	0.1	0.1	0.3	2.0	1.0	0.2	0.1
Maximum (ft)	19.0	19.0	18.5	19.0	16.0	14.0	19.0	19.0	15.0
Mean (ft)	10.9	6.9	5.2	6.6	8.2	8.5	8.8	5.3	6.0
Median (ft)	10.7	5.0	5.0	5.0	10.0	10.0	10.0	5.0	5.0
First quartile (ft)	7.3	5.0	5.0	5.0	5.0	6.0	8.0	5.0	5.0
Third quartile (ft)	15.1	10.0	5.0	10.0	10.0	10.0	10.0	5.0	7.0

Un-sampled intervals, gaps and assays below detection limits were composited at zero grades as per PolyMet's request.

Statistical analysis of the composite remnants indicates that intervals less than four feet could be safely deleted from the dataset without introducing a bias in the remaining composites. This ensured that smaller, less representative samples would not be included in the interpolation. Figure 17.5 shows one example graph for the upper DOM1 Zone where deleting composites less than four feet would only affect the metal content by 0.2%. Boxplots showing statistical analysis of sample interval lengths are included in Appendix D along with the complete remnant statistical study.

Figure 17.6 DOM1 Composite Remnants



Composite statistics by unit codes are shown in Table 17.5.

Table 17.5 Final Composite Statistics by Unit Code (June 2007 Model) Mean Grade Compilation

Units	1	2/3	4/5	6	7	20	30
Counts	11132	6568	3670	2053	759	2303	375
Cu (%)	0.204	0.044	0.043	0.062	0.011	0.008	0.001
Ni (%)	0.062	0.025	0.019	0.025	0.016	0.006	0.001
Co (ppm)	60.13	39.98	28.71	32.70	27.22	10.39	0.14
Pt (ppb)	44.2	16.3	15.0	27.0	6.2	0.8	0.1
Pd (ppb)	169.4	50.2	37.4	66.1	12.1	2.7	0.1
Au (ppb)	23.7	9.0	7.4	11.0	2.5	1.5	0.1
S (%)	0.60	0.12	0.10	0.10	0.02	0.63	0.00

Complete composite statistics are located in Appendix E.

Composite statistics sorted by grade domain code illustrated in Figure 17.6 and 17.8 of this report are shown in Table 17.6.

Table 17.6 Final Composites by Domain June 2007 – Mean Grade Compilations

Grade Domain	Unit 1 Outside DOM1 Zone	Unit 20	Unit 30	DOM1 Bottom (in Unit 1)	DOM1 Top (in Unit 3)	Magenta Zone	Units 3,4,5,6 and 7 Outside Magenta Zone
Domain Code	1	20	30	1001	1003	2000	3000
Count	3064	2626	375	7941	406	778	11670*
Cu (%)	0.082	0.012	0.001	0.253	0.173	0.237	0.028
Ni (%)	0.029	0.007	0.001	0.076	0.070	0.066	0.018
Pd (ppb)	50.0	5.2	0.1	217.4	215.2	240.8	28.7
Pt (ppb)	13.7	1.7	0.1	56.3	59.0	91.3	10.8
Au (ppb)	8.7	2.1	0.1	29.7	32.6	40.2	5.6
Co (ppm)	39.7	13.7	0.1	68.3	71.6	63.3	31.8
S (%)	0.366	0.644	0.003	0.675	0.316	0.380	0.074

** Four Pd values below 0.000000001 ppb were excluded from this data set in Domain 3000.*
Eleven Pt values below 0.000000001 ppb were excluded from this data set in Domain 3000.
Seven Au values below 0.000000001 ppb were excluded from this data set in Domain 3000.

17.2.5 BULK DENSITY

PolyMet's database contains about 6,675 specific gravity / density measurements, plus duplicates including the winter 2007 drilling, and 7,196 including all measurements through summer 2007. Mark J. Severson et al., Natural Resources Research Institute of the University of Minnesota, Duluth compiled 1,037 comparative specific gravity determinations in 1999-2000 using Jolly balance determinations on smaller pieces and duplicate measurements of displacement and weight ("graduated cylinder method") on larger core pieces.

From this work, Severson reported the following:

> *When compared to the Jolly Balance method, the Graduated Cylinder method is not only faster (about 25 samples per hour, versus the Jolly Balance's 30-40 samples per day), but just as accurate.*

and concluded:

> *In most cases, sample variance is smaller for the Graduated Cylinder method than the Jolly Balance method, probably because the Graduated Cylinder method uses a much larger sample. This sheer difference in specimen size makes the Graduated Cylinder samples more robust to minor variations. Furthermore, the relatively simple nature of the Graduated Cylinder method reduces the chance for introducing measurement errors.*

PolyMet used primarily the Graduated Cylinder method for subsequent specific gravity (SG) determination. The distribution of the data including all determinations through to summer 2007 is shown in Table 17.7.

Table 17.7 Percentage of Specific Gravity Determination by Method

Method	Percent of Total Determination	Average SG
PolyMet Graduated Cylinder	82%	2.93
PolyMet Weight in Water	3%	2.95
Severson/Zanko Data - Graduated Cylinder	14%	2.92
Severson/Zanko Data - Jolly Balance	1%	2.93
Chemex (average)	0.1%	2.91

Density measurements to date have been made on core that has not been oven dried and has not been sealed. This is likely to have resulted in a small (~1%) overstatement due to the inclusion of moisture that would normally be driven off at 105 to 110 degrees Celsius (°C). It is recommended that approximately 50 samples be selected and the weight loss be determined after drying for the same temperature and duration as used by the assay laboratory.

Wardrop considered the specific gravity determination using the graduated cylinder method to be accurate enough to use in the resource estimation.

Table 17.8 list the average specific gravity determination including all determination through to Summer 2007 sorted by unit.

Table 17.8 Specific Gravity Average per Unit (Through Drill Hole 07-556C)

Unit	Mean	Count
1	2.98	2021
3 (2+3)	2.93	1523
5 (4+5)	2.90	919
6	2.90	769
7	2.95	237
20	2.79	279
30	3.19	8
All Units	2.93	5756

17.2.6 GEOLOGICAL INTERPRETATION

The NorthMet deposit digital data set consists of seven surfaces provided by PolyMet describing the geological boundaries observed during core logging. The stratigraphy (bottom to top) covers the Iron Formation, the Virginia Formation, Unit 1, Unit 2 and 3 combined into Unit 3, Unit 4 and 5 combined into Unit 5, Unit 6, Unit 7 and the overburden (glacial drift).

This geological model is overlain by two grade shell models, the DOM1 Zone and the Magenta Zone where the boundaries were drawn based on a US$6.00 per short ton NMV calculated with the formula in Section 17.2.11 of this report. The US$6.00 NMV is currently below the cut-off and is designed to include all areas of mineralization that have the potential to be economically viable. The grade shell model also limits the potential smearing or high grade value into adjoining low grade areas or vice versa.

The DOM1 domain is located near the top of Unit 1 and breaks through the contact to include some of the higher grade material near the bottom of Unit 2 (Unit 2 is merged with Unit 3 in this study). The DOM1 domain spans 14,300 feet east-west and 4,700 feet in the north-south direction between 2895955 E and 2910402 E and 730073 N to 741199 N.

The Magenta Zone domain is smaller in size and is mostly contained within Units 5 and 6 but occasionally is seen in Units 3 and 7. The domain is largely located in the western part of the deposit between 2897538 E and 2902320 E and 733115 N and 736794 N

On the basis of the contact profile, the geological model was re-coded into six distinct grade domains for the purpose of grade interpolation as illustrated in Figure 17.7.

17.2.7 SPATIAL ANALYSIS

Geostatisticians use a variety of tools to describe the pattern of spatial continuity, or strength of the spatial similarity of a variable with separation distance and direction. The correlogram measures the correlation between data values as a function of their separation distance and direction. If we compare samples that are close together, it is common to observe that their values are quite similar and the correlation coefficient for closely spaced samples is near 1.0. As the separation between samples increases, there is likely to be less similarity in the values and the correlogram tends to decrease toward 0.0. The distance at which the correlogram reaches zero is called the "range of correlation" or simply the range. The range of the correlogram corresponds roughly to the more qualitative notion of the "range of influence" of a sample; it is the distance over which sample values show some persistence or correlation. The shape of the correlogram describes the pattern of spatial continuity. A very rapid decrease near the origin is indicative of short scale variability. A more gradual decrease moving away from the origin suggests longer scale continuity.

Using Sage 2001 software, directional sample correlograms were calculated for all elements, copper, nickel, platinum, palladium, gold, cobalt and sulphur in each of the six grade domains along horizontal azimuths of 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300 and 330 degrees. For each azimuth, sample correlograms were also calculated at dips of 30 and 60 degrees in addition to horizontally. Lastly, a correlogram was calculated in the vertical direction. Using the thirty-seven correlograms an algorithm determined the best-fit model. This model is described by the nugget (C_0) which was derived using downhole variograms; two nested structure variance contribution (C_1, C_2), ranges for the variance contributions and the model type (spherical or exponential). After fitting the variance parameters, the algorithm then fits an ellipsoid to the thirty-seven ranges from the directional models for each structure. The final models of anisotropy are given by the lengths and orientations of the axes of the ellipsoids. Tables 17.9, 17.10 and 17.11 summarize the results of the variography.

Figure 17.7 Grade Domains Schematic Section Looking North-East

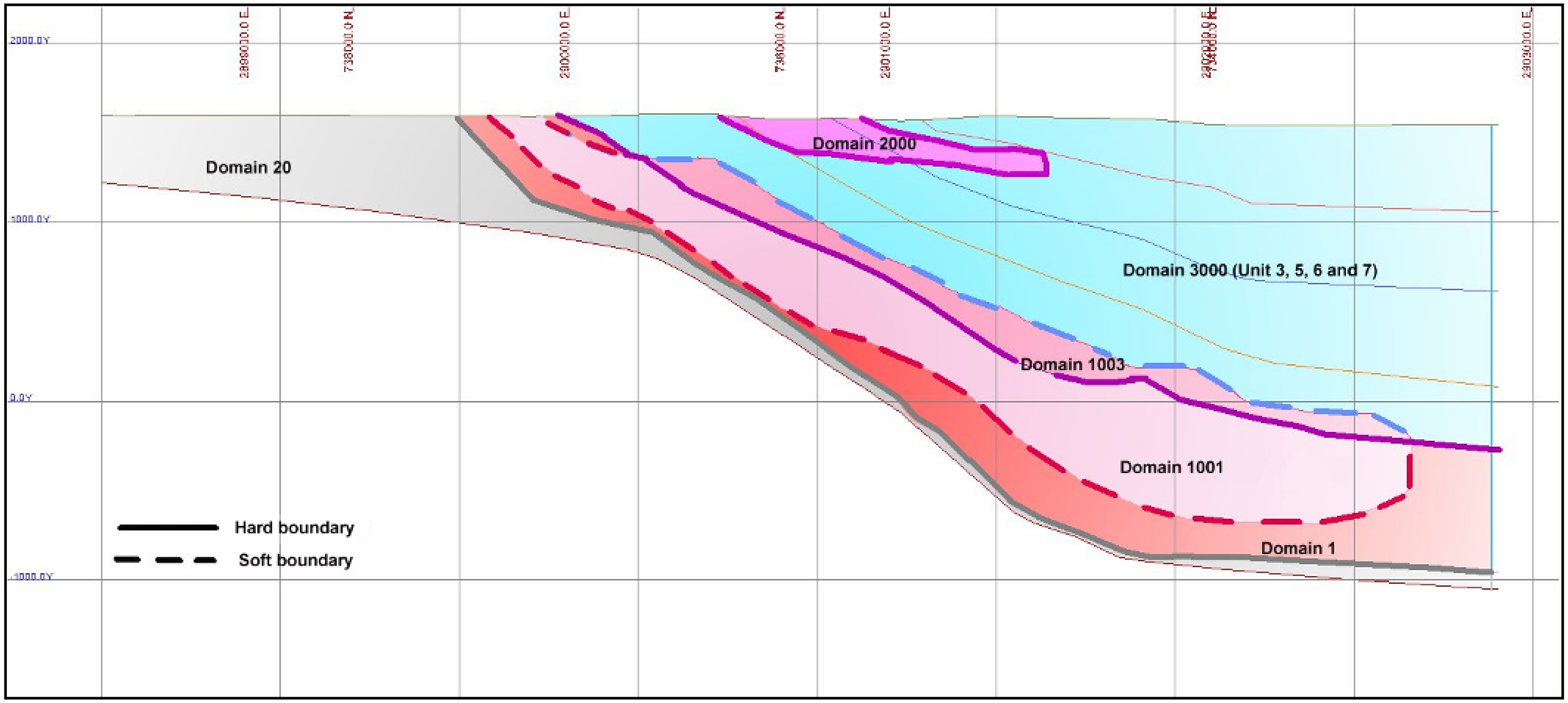


Table 17.9 Variography DOM1 Top and Bottom

Domain	Component	Increment	Cumulative	Rotation	Angle1	Angle2	Angle3	Range1	Range2	Range3
DOM1 Bottom – Au Code 1001	Nugget C_0	0.331	0.331							
	Exponential C_1	0.567	0.898	ZYZ	34.06	-52	-62	4.6	11.1	96.3
	Exponential C_2	0.102	1	ZYZ	-122.94	-64	116	1636.1	108.4	2517.8
DOM1 Bottom – Co Code 1001	Nugget C_0	0.205	0.205							
	Exponential C_1	0.614	0.819	ZYZ	-24.94	-74	42	23.2	81.7	321.4
	Exponential C_2	0.181	1	ZYZ	-40.94	-1	19	26.5	1194.1	1363.7
DOM1 Bottom – Cu Code 1001	Nugget C_0	0.065	0.065							
	Exponential C_1	0.646	0.711	ZYZ	-98.94	13	18	49	460	38
	Exponential C_2	0.289	1	ZYZ	-87.94	39	0	1860	1877	232
DOM1 Bottom – Ni Code 1001	Nugget C_0	0.092	0.092							
	Exponential C_1	0.658	0.75	ZYZ	-87.94	-28	-42	9.4	263.9	16
	Exponential C_2	0.25	1	ZYZ	-39.94	-56	30	71.4	994.2	1091.8
DOM1 Bottom – Pd Code 1001	Nugget C_0	0.249	0.249							
	Exponential C_1	0.553	0.802	ZYZ	36.06	-55	-80	10	17.2	182
	Exponential C_2	0.198	1	ZYZ	-98.94	-52	189	95.7	1007.5	2336.2
DOM1 Bottom – Pt Code 1001	Nugget C_0	0.119	0.119							
	Exponential C_1	0.73	0.849	ZYZ	47.06	-79	91	6.4	12.8	116.8
	Exponential C_2	0.151	1	ZYZ	-54.94	-59	166	87.7	1120.4	1374.6
DOM1 Bottom – S Code 1001	Nugget C_0	0.185	0.185							
	Exponential C_1	0.562	0.747	ZYZ	53.06	-74	66	8.7	21.4	62.8
	Exponential C_2	0.253	1	ZYZ	-122.94	-41	190	50.7	1780.8	1579.8
DOM1 Top – Au Code 1001	Nugget C_0	0.6	0.6							
	Exponential C_1	0.263	0.863	ZYZ	-179.94	19	25	872	344	12
	Exponential C_2	0.137	1	ZYZ	-36.94	-57	47	499	133	1200
DOM1 Top – Co Code 1003	Nugget C_0	0.4	0.4							
	Exponential C_1	0.262	0.662	ZYZ	-155.94	1	-33	83	838	38
	Exponential C_2	0.338	1	ZYZ	-144.94	-71	34	240	1200	445
DOM1 Top – Cu Code 1003	Nugget C_0	0.446	0.446							
	Exponential C_1	0.48	0.926	ZYZ	109.06	84	16	306	375	12
	Exponential C_2	0.074	1	ZYZ	-15.94	-75	-47	211	931	1200
DOM1 Top – Ni Code 1003	Nugget C_0	0.386	0.386							
	Exponential C_1	0.408	0.794	ZYZ	125.06	-31	-74	37.1	4637	70
	Exponential C_2	0.206	1	ZYZ	-131.94	-10	34	68	701	1200
DOM1 Top – Pd Code 1003	Nugget C_0	0.603	0.603							
	Exponential C_1	0.298	0.901	ZYZ	73.06	-89	-17	206	23	57
	Exponential C_2	0.099	1	ZYZ	38.06	65	35	151	9432	1200
DOM1 Top – Pt Code 1003	Nugget C_0	0.61	0.61							
	Exponential C_1	0.296	0.906	ZYZ	-41.94	79	73	69	128	24
	Exponential C_2	0.094	1	ZYZ	-144.94	-64	126	3733	211	2736
DOM1 Top – S Code 1003	Nugget C_0	0.465	0.465							
	Exponential C_1	0.372	0.837	ZYZ	79.06	62	-72	652	141	32
	Exponential C_2	0.163	1	ZYZ	-12.94	-41	41	936	120	1500

Table 17.10 Variography Unit 1 and Unit 20

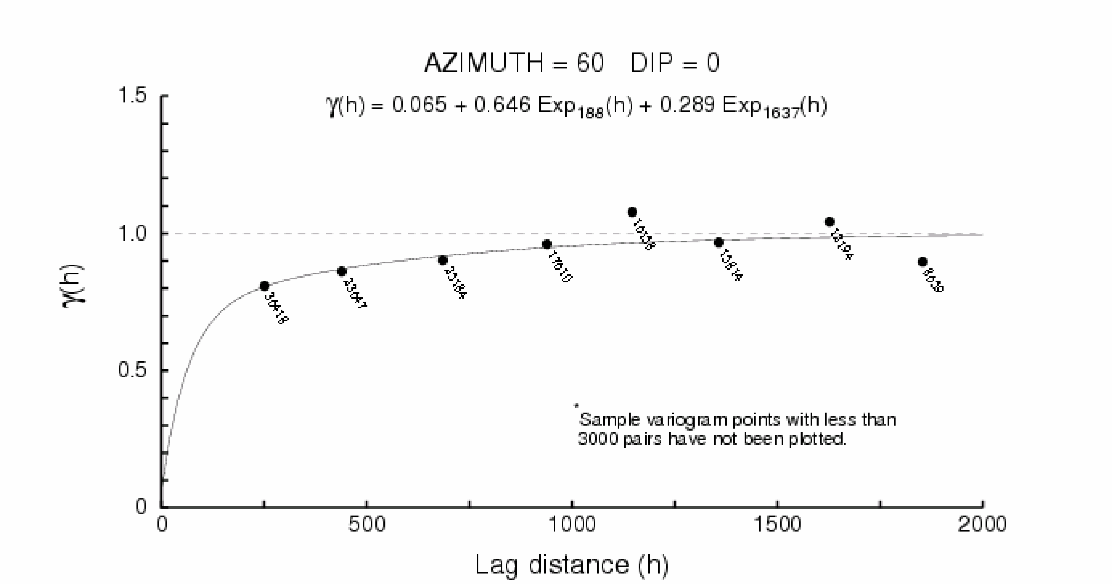
Domain	Component	Increment	Cumulative	Rotation	Angle1	Angle2	Angle3	Range1	Range2	Range3
Unit 1 – Au Code 1	Nugget C_0	0.784	0.784							
	Spherical C_1	0.137	0.921	ZYZ	-57.94	80	-36	143.4	102.9	3
	Spherical C_2	0.079	1	ZYZ	-151.94	-3	91	542.1	12687.8	16953.8
Unit 1 – Co Code 1	Nugget C_0	0.495	0.495							
	Spherical C_1	0.186	0.681	ZYZ	-115.94	64	-50	213.8	80.9	26.7
	Spherical C_2	0.319	1	ZYZ	-89.94	-48	97	3002.4	244.7	789.9
Unit 1 – Cu Code 1	Nugget C_0	0.48	0.48							
	Spherical C_1	0.265	0.745	ZYZ	-100.94	-11	-30	15.6	95.6	118.3
	Spherical C_2	0.255	1	ZYZ	-62.94	4	16	52.4	104.2	960.3
Unit 1 – Ni Code 1	Nugget C_0	0.647	0.647							
	Spherical C_1	0.205	0.852	ZYZ	-128.94	85	48	155.9	181.5	10.1
	Spherical C_2	0.148	1	ZYZ	-118.94	3	46	283.3	3019.2	1094.7
Unit 1 – Pd Code 1	Nugget C_0	0.508	0.508							
	Spherical C_1	0.296	0.804	ZYZ	-121.94	90	3	306	171.8	7.9
	Spherical C_2	0.196	1	ZYZ	-66.94	7	89	5569.9	902.3	599.5
Unit 1 – Pt Code 1	Nugget C_0	0.672	0.672							
	Spherical C_1	0.234	0.906	ZYZ	-122.94	89	-35	313.8	213.9	8.1
	Spherical C_2	0.094	1	ZYZ	29.06	-74	47	1183.8	765.1	2754.6
Unit 1 – S Code 1	Nugget C_0	0.533	0.533							
	Spherical C_1	0.3	0.833	ZYZ	119.06	70	-16	316.1	93.5	40.9
	Spherical C_2	0.167	1	ZYZ	-101.94	39	8	218.4	2008.7	214.2
Unit 20 – Au Code 20	Nugget C_0	0.368	0.368							
	Spherical C_1	0.435	0.803	ZYZ	-74.94	90	26	66.6	85.5	6.2
	Spherical C_2	0.197	1	ZYZ	-55.94	-12	62	143.8	79.1	546.8
Unit 20 – Co Code 20	Nugget C_0	0.398	0.398							
	Spherical C_1	0.279	0.677	ZYZ	-124.94	-62	81	48.3	215.9	11.4
	Spherical C_2	0.323	1	ZYZ	-106.94	50	33	457	1859.6	223.2
Unit 20 - Cu Code 20	Nugget C_0	0.45	0.45							
	Spherical C_1	0.381	0.831	ZYZ	-94.94	87	-49	163.5	152.2	9
	Spherical C_2	0.169	1	ZYZ	-60.94	-5	-54	155.5	500	1200
Unit 20 – Ni Code 20	Nugget C_0	0.406	0.406							
	Spherical C_1	0.34	0.746	ZYZ	-80.94	90	3	182.4	67.1	7.9
	Spherical C_2	0.254	1	ZYZ	-83.94	11	9	78.3	117.5	1190.4
Unit 20 – Pd Code 20	Nugget C_0	0.571	0.571							
	Spherical C_1	0.198	0.769	ZYZ	-68.94	61	-55	44.1	140.4	163.5
	Spherical C_2	0.231	1	ZYZ	-14.94	0	-24	5.4	50.9	609
Unit 20 – Pt Code 20	Nugget C_0	0.434	0.434							
	Spherical C_1	0.402	0.836	ZYZ	-47.94	89	-47	81.3	52.1	4.9
	Spherical C_2	0.164	1	ZYZ	-39.94	3	82	179.3	76.5	759.2
Unit 20 – S Code 20	Nugget C_0	0.227	0.227							
	Spherical C_1	0.389	0.616	ZYZ	-150.94	28	3	28.4	60.8	138.8
	Spherical C_2	0.384	1	ZYZ	-48.94	0	13	47.9	105.4	1410.5

Table 17.11 Variography Magenta Zone and Code 3000

Domain	Component	Increment	Cumulative	Rotation	Angle1	Angle2	Angle3	Range1	Range2	Range3
Magenta Zone – Au Code 2000	Nugget C_0	0.183	0.183							
	Exponential C_1	0.649	0.832	ZYZ	-77.94	36	71	19.6	36.8	4.8
	Exponential C_2	0.168	1	ZYZ	43.06	89	10	33.2	943.4	6853.1
Magenta Zone – Co Code 2000	Nugget C_0	0.211	0.211							
	Exponential C_1	0.47	0.681	ZYZ	-56.94	0	-25	854.8	3117.1	6.9
	Exponential C_2	0.319	1	ZYZ	-116.06	66	-73	16.1	96.8	770
Magenta Zone – Cu Code 2000	Nugget C_0	0.281	0.281							
	Exponential C_1	0.581	0.862	ZYZ	-79.94	-59	22	76.3	244.1	16.7
	Exponential C_2	0.138	1	ZYZ	-61.94	-67	-5	95.7	1704.6	738
Magenta Zone – Ni Code 2000	Nugget C_0	0.455	0.455							
	Exponential C_1	0.543	0.998	ZYZ	-79.94	-56	3	28.6	407.3	15.2
	Exponential C_2	0.002	1	ZYZ	-42.94	-87	86	1863.2	282.7	4647.6
Magenta Zone – Pd Code 2000	Nugget C_0	0.329	0.329							
	Exponential C_1	0.443	0.772	ZYZ	-83.94	30	-40	20.1	154.7	6
	Exponential C_2	0.228	1	ZYZ	-107.94	-84	8	41.3	2214.6	1487.1
Magenta Zone - Pt Code 2000	Nugget C_0	0.329	0.329							
	Exponential C_1	0.515	0.844	ZYZ	-83.94	-57	24	23.6	129.7	3.8
	Exponential C_2	0.156	1	ZYZ	-69.94	-84	2	29.6	3650.2	3372.5
Magenta Zone – S Code 2000	Nugget C_0	0.257	0.257							
	Exponential C_1	0.638	0.895	ZYZ	-83.94	-57	34	20.1	171.3	5
	Exponential C_2	0.105	1	ZYZ	-113.94	-80	6	40.5	3275.4	2425.3
Unit 3, 4, 5, 6, 7 – Au Code 3000	Nugget C_0	0.55	0.55							
	Exponential C_1	0.353	0.903	ZYZ	-56.94	73	-86	29.4	48	9.6
	Exponential C_2	0.097	1	ZYZ	-39.94	-42	45	89.1	2322.4	195.2
Unit 3, 4, 5, 6, 7 – Co Code 3000	Nugget C_0	0.502	0.502							
	Exponential C_1	0.274	0.776	ZYZ	-129.94	68	-2	36.2	23.4	59.9
	Exponential C_2	0.224	1	ZYZ	-18.94	-86	-31	225.5	650.8	2185.5
Unit 3, 4, 5, 6, 7 – Cu Code 3000	Nugget C_0	0.601	0.601							
	Exponential C_1	0.242	0.843	ZYZ	-135.94	75	-10	38.4	41.3	16.3
	Exponential C_2	0.157	1	ZYZ	-72.94	61	23	1673.2	85.4	175.9
Unit 3, 4, 5, 6, 7 – Ni Code 3000	Nugget C_0	0.842	0.842							
	Exponential C_1	0.003	0.845	ZYZ	-112.94	-49	17	97.4	38.9	43.4
	Exponential C_2	0.155	1	ZYZ	-13.94	-86	-28	197.6	780.3	197.6
Unit 3, 4, 5, 6, 7 – Pd Code 3000	Nugget C_0	0.634	0.634							
	Exponential C_1	0.277	0.911	ZYZ	-72.94	84	6	62.6	73.9	4.1
	Exponential C_2	0.089	1	ZYZ	-100.94	-53	20	109.3	622.8	576.5
Unit 3, 4, 5, 6, 7 – Pt Code 3000	Nugget C_0	0.603	0.603							
	Exponential C_1	0.314	0.917	ZYZ	-27.94	-60	-30	29.1	40.7	5.4
	Exponential C_2	0.083	1	ZYZ	-111.94	-36	-6	166.7	408.5	776.3
Unit 3, 4, 5, 6, 7 – S Code 3000	Nugget C_0	0.564	0.564							
	Exponential C_1	0.223	0.787	ZYZ	-96.94	-63	5	129	78.6	9.1
	Exponential C_2	0.213	1	ZYZ	-79.94	-64	-2	160	1286.7	461.4

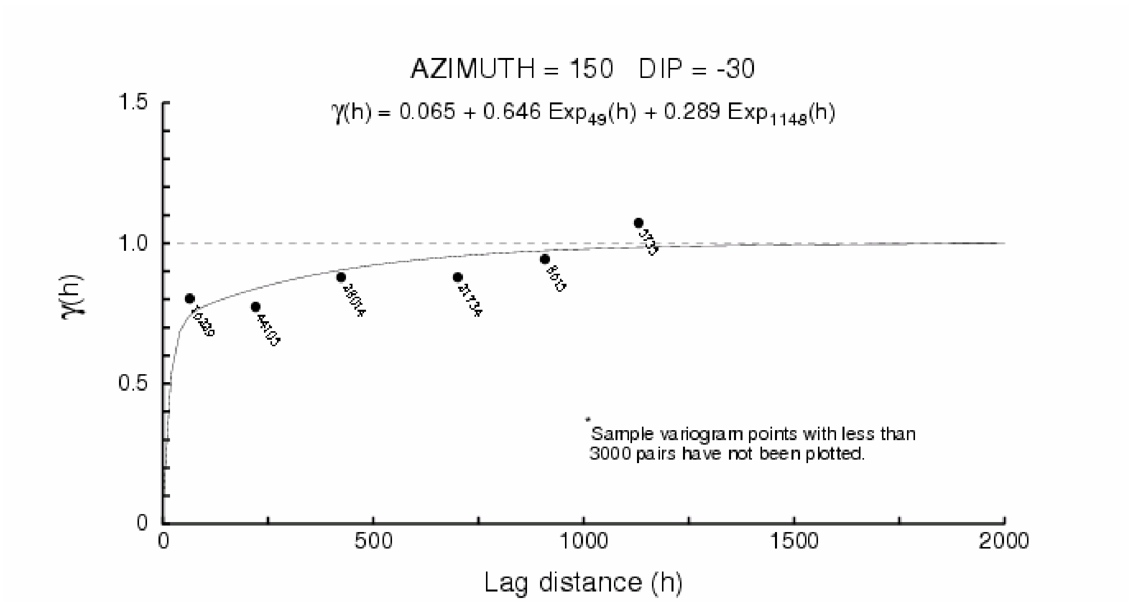
Generally, ranges for the copper correlogram in the main DOM1 grade shell reach 1000 feet at approximately 96% of the 1.0 sill level in the main strike direction as shown in Figure 17.8.

Figure 17.8 Copper Correlogram for Domain 1001 – Main Strike Direction



In the down dip direction, the range is shorter reaching about 800 ft at about 96% of the sill value as shown in Figure 17.9. The variography is consistent with PolyMet's NorthMet field geologists being able to predict the location of the high grade horizon with a relatively good degree of accuracy prior to drilling.

Figure 17.9 Copper Correlogram for Domain 1001 - Down Dip Direction



The Magenta Zone shows shorter range with a maximum range of 800 feet at the sill in the main strike direction and 500 feet in the down dip direction.

Domain 1003 did not provide enough points to generate a reliable correlogram and Wardrop elected to use the lithological Unit 3 points for the spatial analysis in lieu of the domain 1003 points.

The complete spatial analysis is attached in Appendix G.

17.2.8 RESOURCE BLOCK MODEL

One block model was constructed in Gemcom's GEMS version 6.04™ software. The block size was 50 feet x 50 feet x 20 feet to allow for detailed engineering of the resource model.

The block model matrix was defined using the following coordinates (block edge) based on the Minnesota State Plane Grid (North Zone, NAD83, NAVD 88):

Easting:	2,896,240.59081
Northing:	728,838.73616
Top elevation:	1,620
Rotation angle:	33.94 degrees anti clockwise around the origin giving the model X direction an azimuth of 56.06 degree.

Number of blocks in the X direction: 399
Number of blocks in the Y direction: 122
Number of blocks in the Z direction: 81

The block model matrix covers the area bounded by the coordinates listed in Table 17.12.

Table 17.12 Maximum and Minimum Coverage for the Block Model Matrix (edge to edge)

Coordinate	Minimum	Maximum
Easting	2892834.810	2912791.563
Northing	728838.736	745038.007
Elevation	0.00	1620

A unit model was assigned a code corresponding to the integer code of the lithological units. Blocks in this model have a value of 30, 20, 1, 3, 5, 6 or 7. A domain model was coded using the DOM1SOL, MAGZONE, and two Virginia Formation inclusions wireframe named CODE21 and RAMP-07 in the database. Blocks in this model have values of 1000 for the DOM1 grade shell, 2000 for the Magenta Zone grade shell, and 21 or 23 for the two Virginia Formation inclusions. The final grade domain code was calculated in the Rocktype model using a block model manipulation script where the block integer code was assigned according to the matrix in Table 17.14.

Figure 17.10 shows a typical cross section.

Figure 17.10 Final Grade Domain Code in the Gemcom© Rocktype Model

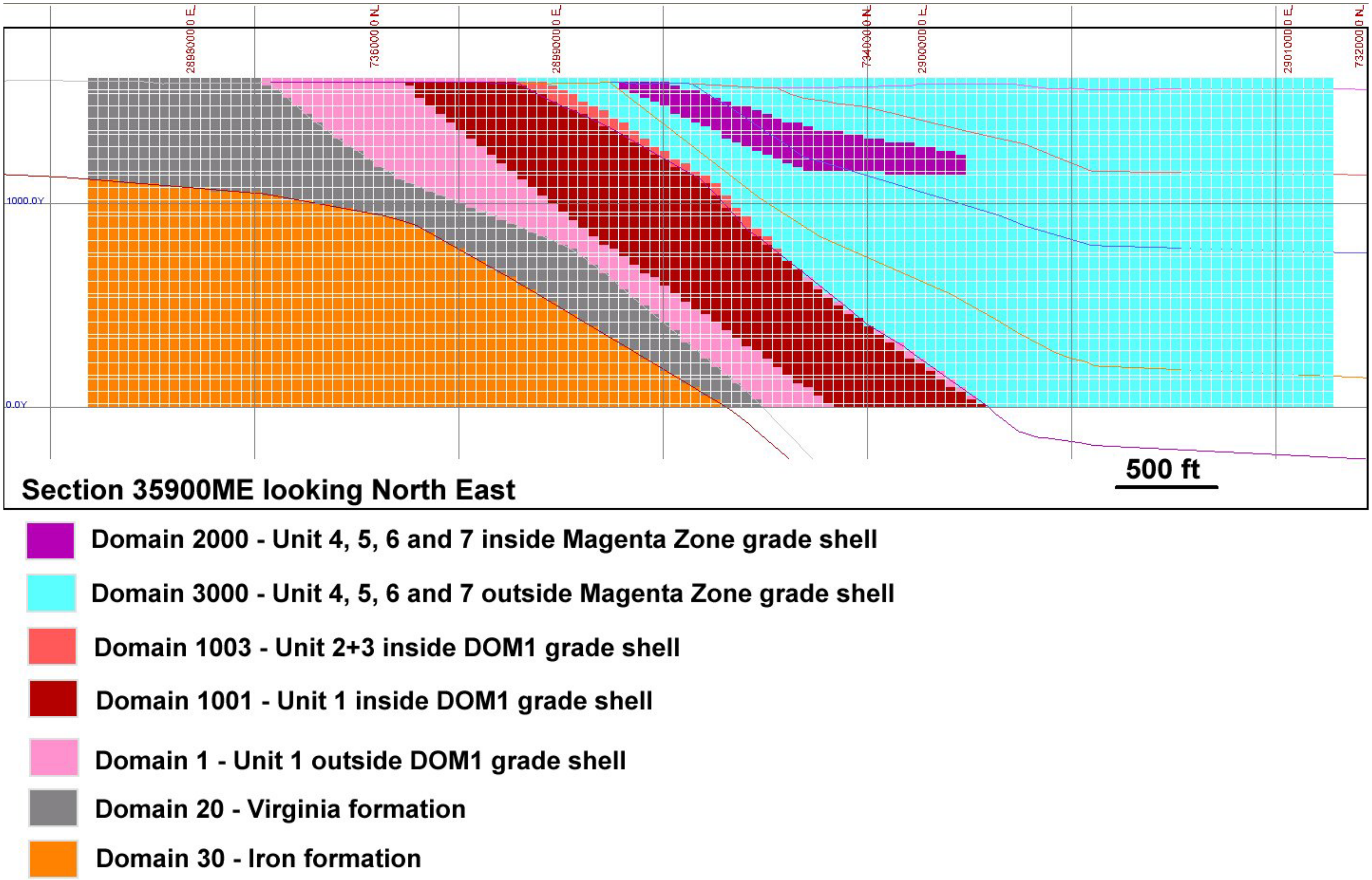


Table 17.13 Grade Domain Coding Matrix

Domain Code	Unit Code							
	30	**20**	**1**	**2**	**3**	**5**	**6**	**7**
23	-	20	20	20	20	20	20	20
22	20	20	20	20	20	20	20	20
1000	-	-	1001	1002	-	-	-	-
2000	-	-	2000	2000	2000	2000	2000	2000
3000	-	-	-	-	3000	3000	3000	3000

17.2.9 INTERPOLATION PLAN

Interpolation was carried out in five passes with an increasing search radius coupled with a decreasing sample density restriction. The interpolation plan used for the NorthMet deposit allows for a limited soft boundary across the grade shell domain DOM1 and its surrounding unit code. The soft boundary search was limited to the most restrictive Pass 1 search in order to avoid high grade smearing into the lower grade areas or vice versa, as the search ellipsoid becomes larger in the subsequent passes. With the exception of DOM1 grade shell boundary, the remaining grade domains were treated as hard boundaries.

The search ellipsoids orientation and dip were tweaked in this resource estimate to coincide better with the average strike and dip angle of the deposit. Grade shell DOM1 shows an average azimuth of 61.8° and dips towards the southeast at 28.6°. The Magenta Zone is flatter, exhibiting a strike of 47.8° dipping southeast at 14.9°. Units 1 and 20 were kept at the average deposit strike of 56.06° and dipping southeast at 30°.

Search ranges were based on the density of diamond drilling and the two main ore domain copper correlograms. Generally, the ratio between the major and semi-minor axis is 0.56 while the ratio between the semi-minor and minor axis was kept around 0.23 for Pass 1 to Pass 4 inclusively. The incremental ratio of the major axis between passes was 0.5, 0.66 and 0.45 respectively for Pass 1 to Pass 2, Pass 2 to Pass 3 and Pass 3 to Pass 4.

Table 17.14 summarizes the ellipsoid dimensions used in the different passes while Table 17.15 summarizes the search angle and search restriction imposed on the high grade outliers as described in the capping section (Section 17.2.3) of this report.

A series of model in the block matrix called Nbsamp1, Nbsamp2, Nbsamp3 and Nbsamp4 recorded the number of samples used to interpolate the blocks. These models were used in a block manipulation script to fill a PassNb model with a value of 1, 2, 3 or 4 representing at what pass a given grade was interpolated.

The target domain code and sample code controls the soft/hard boundary of the model. When a block is interpolated with a given target domain code the software will load the point file according to the grid listed in Tables 17.16 and 17.17.

Table 17.14 Ellipsoid Dimensions

	Ellipsoid dimension (in ft)			Number of Samples Used			
	X	Y	Z	Min	Max	Max per hole	Comment
Pass 1	300	170	40	6	15	5	Minimum of two holes required
Pass 2	600	340	80	6	15	5	Minimum of two holes required
Pass 3	900	500	115	2	15	5	
Pass 4	2000	1100	265	2	15	5	
Pass 5	8000	6000	1200	2	15	5	

Table 17.15 Sample Search Parameters (all passes)

Search Angle				Search Restriction Size and High Grade Threshold Value Used								
	Z	X	Z	Z	X	Z	Au (ppb)	Cu (%)	Ni (%)	Pd (ppb)	Pt (ppb)	S (%)
Dom 20	0	30	0	75	75	75	80	0.7	0.18	1000	200	7.5
Dom 1	0	30	0	75	75	75	500	1.8	0.6	1600	450	7.5
Dom 1001	-6	29	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dom 1003	-6	29	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dom 3000	8	15	0	75	75	75	500	2.1	0.4	4000	700	8
Dom 2000	8	15	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 17.16 Pass 1 – Target Domain Code and Sample Code Used

	20	1	1001	1003	3000	2000
20	x					
1		x	x			
1001		x	x			
1003				x	x	
3000				x	x	
2000						x

Table 17.17 Pass 2, 3, 4 and 5 – Target Domain Code Sample Code Used

	20	1	1001	1003	3000	2000
20	x					
1		x				
1001			x			
1003				x		
3000					x	
2000						x

The density model was initialized with the unit average density from Table 17.8. The density data collected by PolyMet was interpolated into the model using a simple inverse distance model with a fairly restrictive search ellipse of 300 feet x 300 feet x 75 feet. The minimum number of samples was set to six, the maximum was fifteen and a maximum of five samples per hole was imposed. In total, 2.79% of all the blocks in the model were interpolated for density by the inverse distance method. The block model specific gravity (SG) by unit code is shown in Table 17.18.

Table 17.18 Block Model Specific Gravity by Units

Unit Code	Specific Gravity
1	2.98
3	2.93
5	2.90
6	2.90
7	2.95
20	2.79
30	3.19

17.2.10 Mineral Resource Classification

Several factors are considered in the definition of a resource classification:

- Canadian Institute of Mining (CIM) requirements and guidelines.
- Experience with similar deposits.
- Spatial continuity.
- Confidence limit analysis.
- Geology.

No environmental, permitting, legal, title, taxation, socio-economic, marketing or other relevant issues are known to the author that may affect the estimate of mineral resources. Mineral Reserves can only be estimated on the basis of an economic evaluation that is used in a Pre-feasibility or Feasibility Study of a mineral project, thus no reserves have been estimated. As per NI 43-101, mineral resources which are not mineral reserves do not have demonstrated economic viability.

Four confidence categories exist in the model. The usual CIM guidelines of Measured, Indicated and Inferred classes are coded 1, 2 and 3 respectively. A special code 4 called "Fill" in this report represents what are typically un-interpolated blocks. NorthMet requires that all blocks in the model carry sulphur value in addition to the six primary grade elements for environmental purposes and therefore a fourth and fifth pass was used, with a large search ellipsoid, so that all blocks in the model are populated with a grade value.

Typically, confidence level for a grade in the block model is reduced with the increase in the search ellipsoid size along with the diminishing restriction on the number of samples used for the grade interpolation. This is essentially controlled via the pass number of the interpolation plan describe in the previous section. A common technique is to categorize a model based on the pass number and distance to the closest sample. In numeric models with hard boundaries between grade domains the technique has a tendency to stripe the model with measured category in close proximity with inferred category. If the interpolation uses a minimum number of holes similar to pass 1 and pass 2 in the Wardrop model, this effect can be aggravated showing an indicated category in between drill holes where a series of blocks were interpolated with the pass 1 with a minimum of 2 drill holes restriction while the blocks located directly on the drillholes could not see the next hole end up classified as inferred.

For the NorthMet deposit, Wardrop elected to classify the mineral resource primarily using the Pass number from the interpolation plan with help from a core area model to minimize having blocks in the measured category in close proximity with blocks in the inferred category.

The core area model represents the density of the drilling in the resource model based on two components; the position of the drillholes and the number of drillholes surrounding the blocks in the matrix. The model was created as follows:

- A model in the block model matrix called DDH175 was first created by assigning the percentage of the blocks inside a 175 foot extruded drillhole trace. The model contains values from 0 to 100% representing how far a block center is from a 175 foot extruded drillhole trace where 100% means the block is fully within the trace of the drillhole shown in the top right inset image of Figure 17.11.
- A second model called NBHoles was created in the block model matrix containing the number of drillholes that are visible from a given block in the model within a 300 foot search bubble. The model contains values from 0 to 15 representing the number of drillholes visible within a 300 foot search bubble from the block center shown in the bottom left inset of Figure 17.11.
- A third and final model called Core was constructed in the block model matrix containing the combination of the DDH175 model and the NBHoles model weighted at a 25/75 ratio between the DDH175 and NBHoles model respectively. This procedure essentially eliminated the stripping effect visible in the DDH175 model for holes near the fringe area of the core while giving more weight to the number of drillholes visible from a block center. The resulting model carries an empirical value from 0 to 81.25 (average 6.937) describing more or less the number of drillholes visible to a block center in relation to the proximity to the nearest hole. A high value is well within the core area drilled by PolyMet's NorthMet staff geologists while a low value is near the fringe. The core area values are shown in the main image of Figure 17.11.

The category model was coded using the pass number to define the Measured, Indicated and Inferred category in combination with the core area model as per schedule in Table 17.19 where a block located outside the core area was likely to be downgraded in category. The procedure allowed the fine tuning of the measured category and will eventually be used in the future to fine tune the pass 2 blocks in order to eliminate the indicated blocks outside the core area where the drillhole density is weak.

Figure 17.11 Core Area with Drillhole Traces

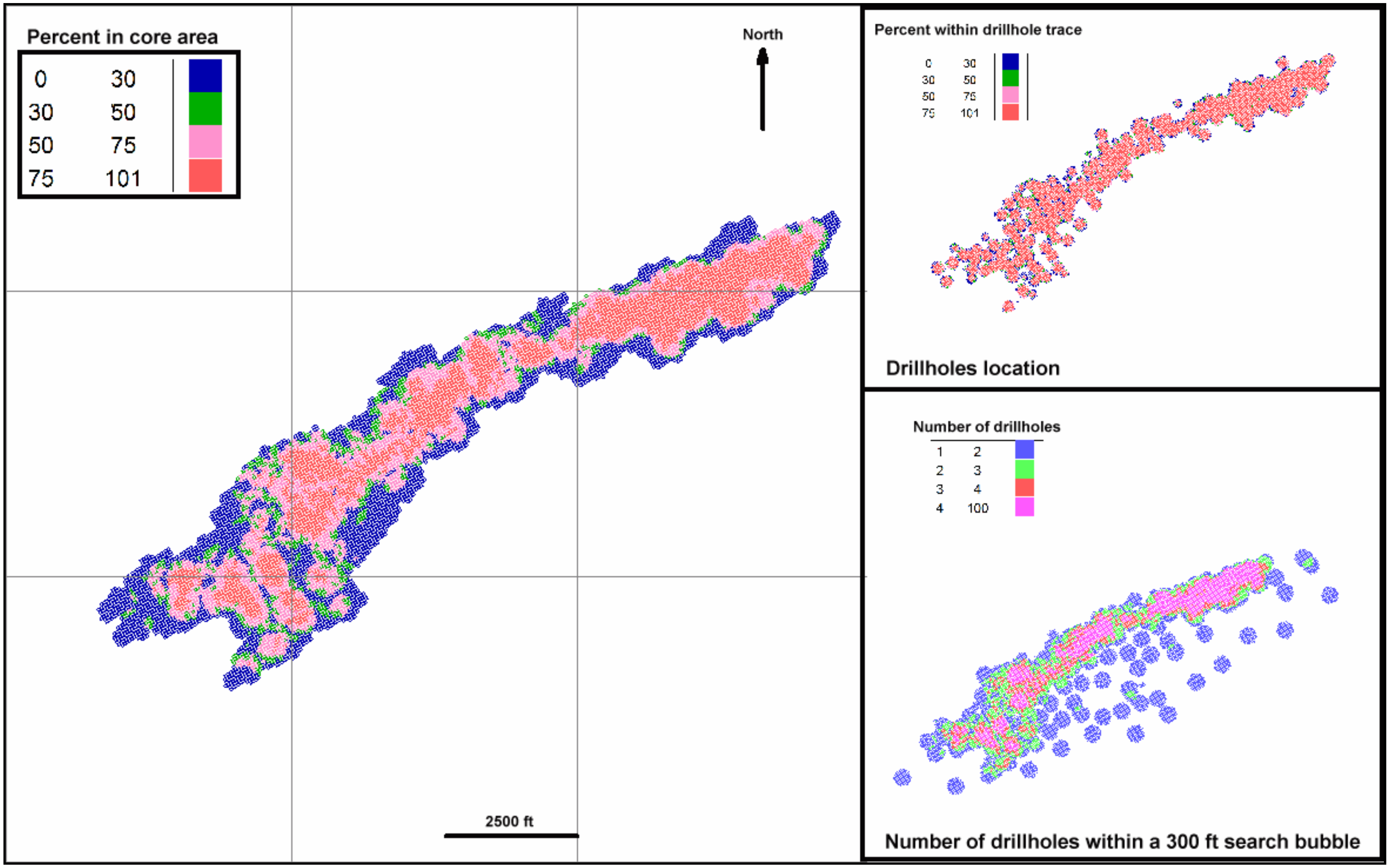


Table 17.19 summarizes the classification parameters used for the category models.

On the basis of the criteria outlined in Table 17.20, 3% of the blocks estimated at the NorthMet project are classified as Measured, 13% of the blocks are Indicated and 24% of the blocks are Inferred. The remaining blocks are either non-interpolated, category 4 or “fill”. Figure 17.12 shows a representative section of the category model.

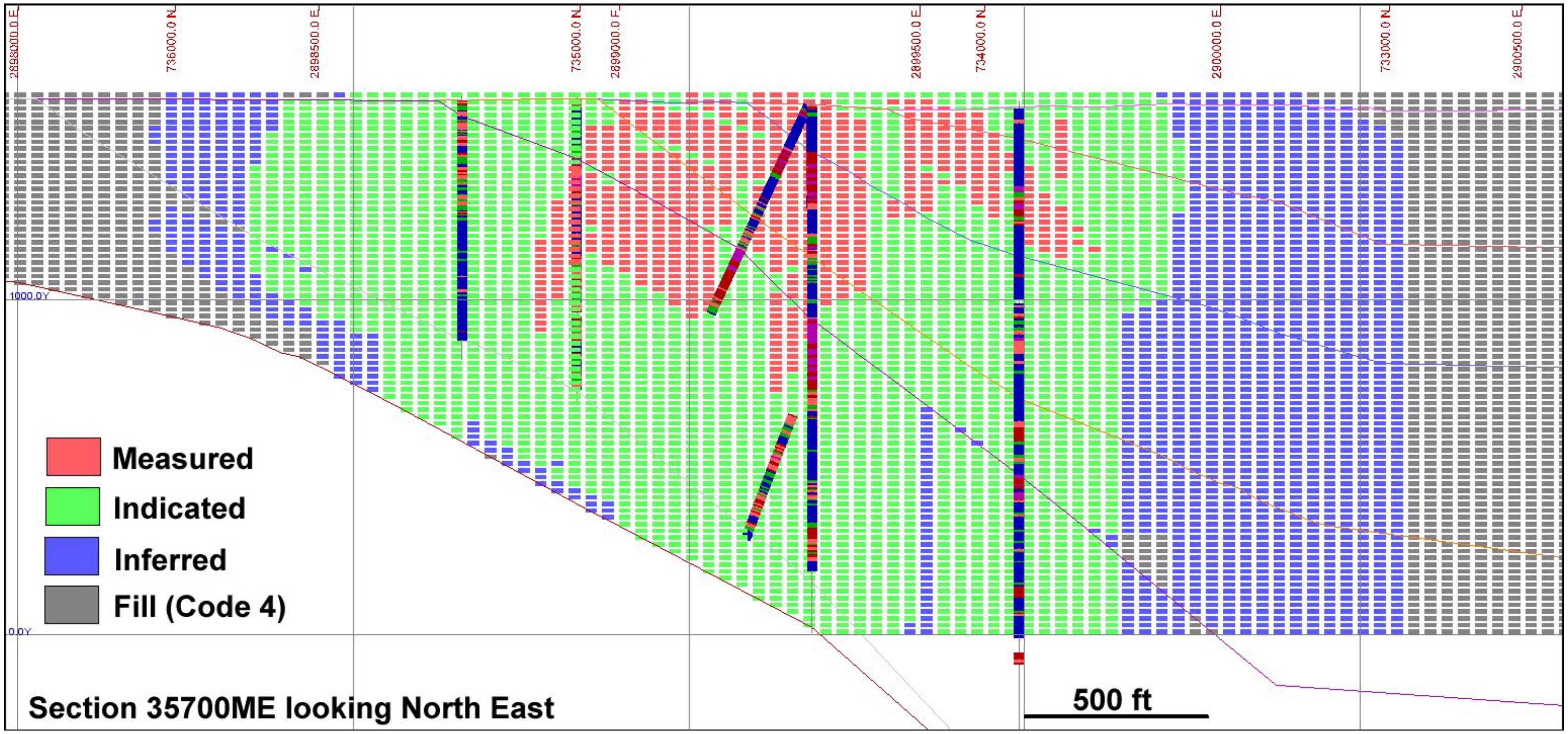
Table 17.19 Classification Parameters

Pass Number	Inside Core	Outside Core
Pass 1	Measured if Core value > 75	Indicated
Pass 2	Indicated	Indicated
Pass 3	Indicated	Inferred
Pass 4	Inferred	Fill
Pass 5	Fill	Fill

Table 17.20 NorthMet Project Category Model Tabulation

Unit	Total Number Blocks	Measured		Indicated		Inferred		Non-Interpolated or Fill	
		Number of Blocks	%	Number of Blocks	%	Number of Blocks	%	Number of Blocks	%
20, 1, 3, 5, 6, 7	2,884,900	104,763	3	499,282	13	938,975	24	1,341,880	34
30	1,058,018	-	0	-	0	-	0	1,058,018	26
Total Block	3,942,918								

Figure 17.12 Section 35700ME Classification Model



17.2.11 NET METAL VALUE FORMULA

For comparison purposes, Wardrop was requested by PolyMet to use the same metal price and recovery figures used previously in the report titled "Technical Report on the Results of a Definitive Feasibility Study of the NorthMet Project" authored by D. J. Hunter and dated October 2006.

Net Metal Value is calculated as follows:

1) For all elements a net metal price is calculated:
   Net Metal Price = [(Metal price - Refining, insurance and transport charge) * Metal paid by Smelter in percent]

2) For each element, a factor is calculated:

   a) For Copper and Nickel (expressed in %):
      Factor = Net Metal Price * Recovery Ore to Conc. * Recovery Conc. To Metal * Conversion % to lbs

   b) For Cobalt (expressed in ppm):
      Factor = Net Metal Price * Recovery Ore to Conc. * Recovery Conc. To Metal * Conversion ppm to % * Conversion % to lbs

   c) For Platinum, Palladium and Gold (expressed in ppb):
      Factor = Net Metal Price * Recovery Ore to Conc. * Recovery Conc. To Metal * Conversion ppb to ppm * Conversion ppm to troy oz

3) For all elements, the value per tonne is calculated in US$:
   Value/tons = grade * factor

4) Total NMV is the addition of the Value per tons for each element:
   NMV = Value/tonsCu + Value/tonsNi + Value/tonsCo + Value/tonsPt + Value/tonsPd + Value/tonsAu

Table 17.21 below lists the price, recoveries, refining, insurance and transportation charge used in the calculation.

Conversion factors used are:

- % to lbs per short ton multiply by 20.
- ppm to % multiply by 0.0001.
- ppb to ppm multiply by 0.001.
- ppm to troy ounces multiply by 0.02917 or (1/34.285).

Table 17.21 NMV Input Parameters

Metal in Model	Metal price Unit	Metal Price	Refining, Insurance and Transport	Recovery Ore – Concentrate	Recovery Concentrate - Metal	Metal Paid by Smelter
Copper (%)	US$/lb	$1.25	$0.00	0.9420	0.980	100%
Nickel (%)	US$/lb	$5.60	$1.40	0.7250	0.970	100%
Cobalt (ppm)	US$/lb	$15.25	$6.10	0.4200	0.970	100%
Platinum (ppb)	US$/troy oz	$800.00	$18.00	0.7690	0.945	100%
Palladium (ppb)	US$/troy oz	$210.00	$17.00	0.7960	0.945	100%
Gold (ppb)	US$/troy oz	$400.00	$9.50	0.7570	0.885	100%

17.2.12 MINERAL RESOURCE TABULATION

Table 17.22 shows resources below the overburden bottom surface to 0.00 elevation for Unit 20, 1, 3 (2+3), 5 (4+5), 6 and 7. The base case is using a cut-off grade of 0.2% copper.

Table 17.24 reports resources above an elevation of 0.00 feet using an NMV value of US$7.42 derived from the same metal prices and recoveries used previously in the Hunter, 2006 report.

Table 17.22 Cumulative Resource Model Results at Various Cu % Cut-offs

Cut-off	Volume(ft^3) (in millions)	Density (st/ft^3)	Tonnage (st) (in millions)	Cu (%)	Ni (%)	S (%)	Pt (ppb)	Pd (ppb)	Au (ppb)	Co (ppm)
Measured										
>0.5 Measured	145.3	0.093	13.5	0.578	0.135	1.02	116	466	59	86
>0.4 Measured	390.3	0.093	36.2	0.494	0.122	0.99	103	406	53	85
>0.3 Measured	788.1	0.093	73.2	0.420	0.109	0.92	92	355	47	82
>0.2 Measured	1,385.7	0.093	128.7	0.345	0.095	0.81	78	298	40	77
>0.1 Measured	2,307.9	0.093	214.2	0.266	0.078	0.68	62	231	32	71
Indicated										
>0.5 Indicated	207.5	0.093	19.2	0.578	0.128	0.99	132	492	66	79
>0.4 Indicated	588.2	0.093	54.5	0.491	0.115	0.94	115	428	59	77
>0.3 Indicated	1,366.2	0.093	126.6	0.408	0.102	0.87	98	358	50	74
>0.2 Indicated	2,940.6	0.093	272.2	0.320	0.087	0.77	80	282	41	72
>0.1 Indicated	6,447.4	0.092	596.1	0.224	0.067	0.64	54	184	28	66
Inferred										
>0.5 Inferred	150.4	0.093	14.0	0.605	0.137	1.06	156	610	81	66
>0.4 Inferred	393.9	0.093	36.6	0.509	0.91	0.91	140	529	70	62
>0.3 Inferred	968.6	0.093	90.0	0.413	0.82	0.82	110	410	53	58
>0.2 Inferred	1,850.9	0.093	171.6	0.332	0.72	0.72	88	322	43	55
>0.1 Inferred	3,507.1	0.092	324.4	0.244	0.59	0.59	63	224	32	52

Table 17.23 Resource Model Summary at 0.2% Cu Cut-off

Cut-off @ 0.2% Cu	Volume (ft^3) (in millions)	Density (st/ft^3)	Tonnage (st) (in millions)	Cu (%)	Ni (%)	S (%)	Pt (ppb)	Pd (ppb)	Au (ppb)	Co (ppm)
Measured	1,385.7	0.093	128.7	0.345	0.095	0.81	78	298	40	77
Indicated	2,940.6	0.093	272.2	0.320	0.087	0.77	80	282	41	72
Measured + Indicated	**4,326.3**	**0.093**	**400.9**	**0.328**	**0.089**	**0.78**	**79**	**287**	**41**	**73**
Inferred	1,850.5	0.093	171.6	0.332	0.088	0.72	88	322	43	55

Table 17.24 Resource Model Summary at US$7.42 NMV

Cut-off @ US$7.42 NMV	Volume (ft^3) (in millions)	Density (st/ft^3)	Tonnage (st) (in millions)	Cu (%)	Ni (%)	S (%)	Pt (ppb)	Pd (ppb)	Au (ppb)	Co (ppm)	NMV (US$)
Measured	2,014.9	0.093	187.0	0.287	0.084	0.72	68	256	35	73	14.59
Indicated	4,879.2	0.092	451.1	0.256	0.075	0.68	65	226	34	70	13.18
Measured + Indicated	**6,894.1**	**0.093**	**638.2**	**0.265**	**0.078**	**0.69**	**66**	**234**	**34**	**71**	**13.60**
Inferred	2,719.0	0.093	251.6	0.275	0.079	0.64	76	272	37	56	14.12

17.2.13 BLOCK MODEL VALIDATION

The NorthMet grade models were validated by two methods:

1. Visual comparison of colour-coded block model grades with composite grades on section plots.
2. Comparison of the global mean block grades for ordinary kriging, inverse distance, nearest neighbour models, composite grades and raw assay grades.

17.2.14 VISUAL COMPARISONS

The visual comparisons of block model grades with composite grades show a reasonable correlation between the values. No significant discrepancies were apparent from the sections reviewed.

17.2.15 GLOBAL COMPARISONS

The grade statistics for the raw assay grade, composite grade, ordinary kriging, nearest neighbour and inverse distance models, are tabulated below in Table 17.25. Figures 17.13 and 17.14 graph the differences. Grade statistics for composite mean grade compared to raw assay grade indicated a normal reduction in values for all elements. The block model mean grade when compared against the composites also indicated a normal reduction in values for all elements.

Table 17.25 Global Grade Comparison at 0.00 Cut-off

Source	Cu (%)	Ni (%)	S (%)	Pt (ppb)	Pd (ppb)	Au (ppb)	Co (ppm)
Assay	0.108	0.045	0.26	35	102	17	59
Composite	0.073	0.029	0.24	30	67	11	38
Block NN with MII*	0.058	0.023	0.18	15	50	8	29
Block ID with MII	0.059	0.023	0.18	15	50	8	29
Block OK with MII	0.059	0.023	0.18	15	50	8	29
Block OK with MIIF*	0.051	0.020	0.15	14	43	7	27

** MII – Measured, Indicated and Inferred*

MIIF – Measured, Indicated, Inferred and Filled

Percent changes in metal content shown in Table 17.26 between the nearest neighbour, inverse distance and ordinary kriging model are in very close agreement among all three methods with less than 2.0% difference in all elements except for cobalt showing 2.2% difference between the inverse distance model and the nearest neighbour model.

Figure 17.13 Global Grade Comparison for Unit 1-7, Cu%, Ni% and S%

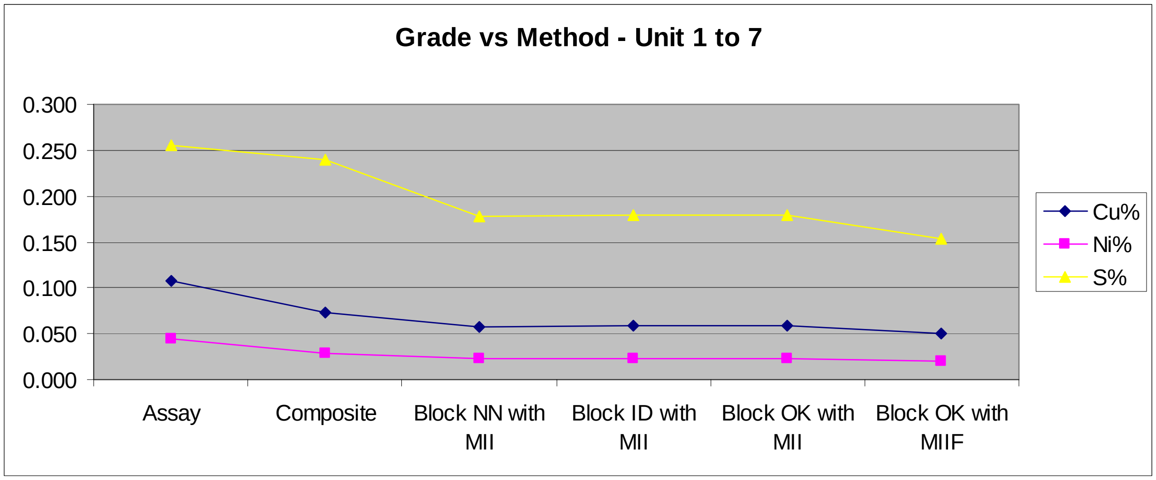


Figure 17.14 Global Grade Comparison for Unit 1-7, Pt (ppb), Pd (ppb), Au (ppb) and Co (ppm)

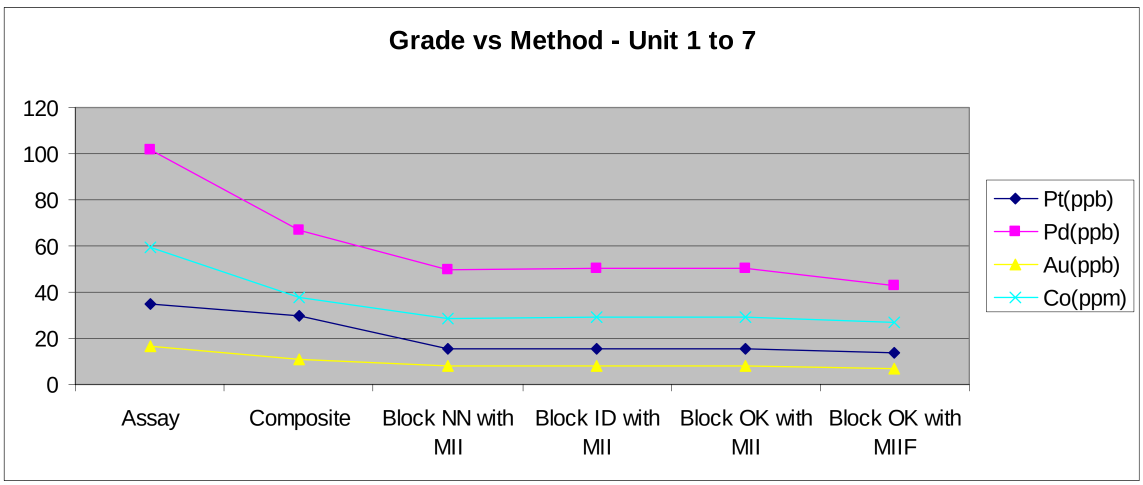


Table 17.26 Global Comparison at 0.00 Cu% Cut-off (Percent Difference in Metal Content)

	Cu	Ni	S	Pt	Pd	Au	Co
Method	% Diff	% Diff	% Diff	% Diff	% Diff	% Diff	% Diff
NN - Base case	0%	0%	0%	0%	0%	0%	0%
ID - NN	1.6%	0.8%	0.9%	1.3%	0.8%	1.0%	2.2%
OK - ID	0.0%	0.2%	0.1%	-0.5%	0.1%	0.3%	0.2%

The sulphur model may have been locally under estimated in the Wardrop June 2007 model due to the inclusion of un-sampled intervals in the assay table treated at zero grades. The impact within the Definitive Feasibility Study for a 20 year pit outline is minimal with only four skeletonized USS holes and some minor intervals scattered throughout. Table 17.27 shows the hole numbers and section lines for the skeletonized holes where no samples were available within the 20 year pit shell.

Table 17.27 Sulphur Values not Samples Within the 20 Year Pit Shell

Hole Number	Section	Comment
26096	45600ME	Sampled in Unit 1 - no sample above
26127	46600ME	Sampled in Unit 1 - no sample above
26103	37300ME	Partially sampled in Unit 1 - no sample above
26078	37400ME	Partially sampled throughout

17.2.16 *BLOCK MODEL COMPARISON WITH THE PREVIOUS RESOURCE ESTIMATE*

The June 2007 resource estimate was compared with the figure listed on page 78, Table 19-1 of the Hunter, 2006 report.

Volumes and tonnages were compiled for the June 2007 resource estimate from the overburden surface down to the 500 ft elevation. A NMV cut-off of US$7.42 was selected using the same metal price and recoveries used in the previous estimate.

Results shown in Table 17.27 indicated an increase of 53.3 million short tons in the Measured category and 96.0 million short ton in the Indicated category for a total of 149.4 million short tons or 35.4% increased in the Measured plus Indicated category. The Inferred Resource dropped by 42 million short tons or 34.79%.

Grades in the Measured and Indicated categories dropped slightly for all grade elements. Copper dropped by 5.64%, nickel by 4.61%, platinum by 2.45%, palladium by 6.55%, gold by 2.82% and cobalt by 0.39% as shown in Figure 17.14.

The contained metal value shown in Table 17.28 increased significantly for all elements upwards of 25% in the Measured and Indicated categories. Copper increased by 27.7%, nickel by 29.4%, platinum by 31.4%, palladium by 26.5%, gold by 33.0% and cobalt by 32.1% as shown in Figure 17.15

Table 17.29 shows the Wardrop June 2007 resource figures from the overburden surface down to the 0.00 elevation along with the Wardrop June 2007 resource and Hunter 2006 report both of which extended only down to the 500 ft elevation. Interestingly, the Wardrop resource model in the area below the 500 ft elevation does not contain any Measured blocks.

Tonnage between the 500 foot elevation and the 0 foot elevation at a US$7.42 NMV cut-off amounted to 66.7 million short tons or 10% of the total Measured plus Indicated Resource grading at 0.307% copper, 0.083% nickel, 82 ppb platinum, 297 ppb palladium, 43 ppb gold and 61 ppm cobalt. In the Inferred category, the tonnage contained between 500 feet and 0.00 feet amounted to 172.9 million short tons or 69% of the total Inferred Resource above the US$7.42 NMV cut-off grading at 0.296% copper, 0.084% nickel, 77 ppb platinum, 285 ppb palladium, 37 ppb gold and 55 ppm cobalt.

Figure 17.15 Resource above 500 feet Comparison – Grade

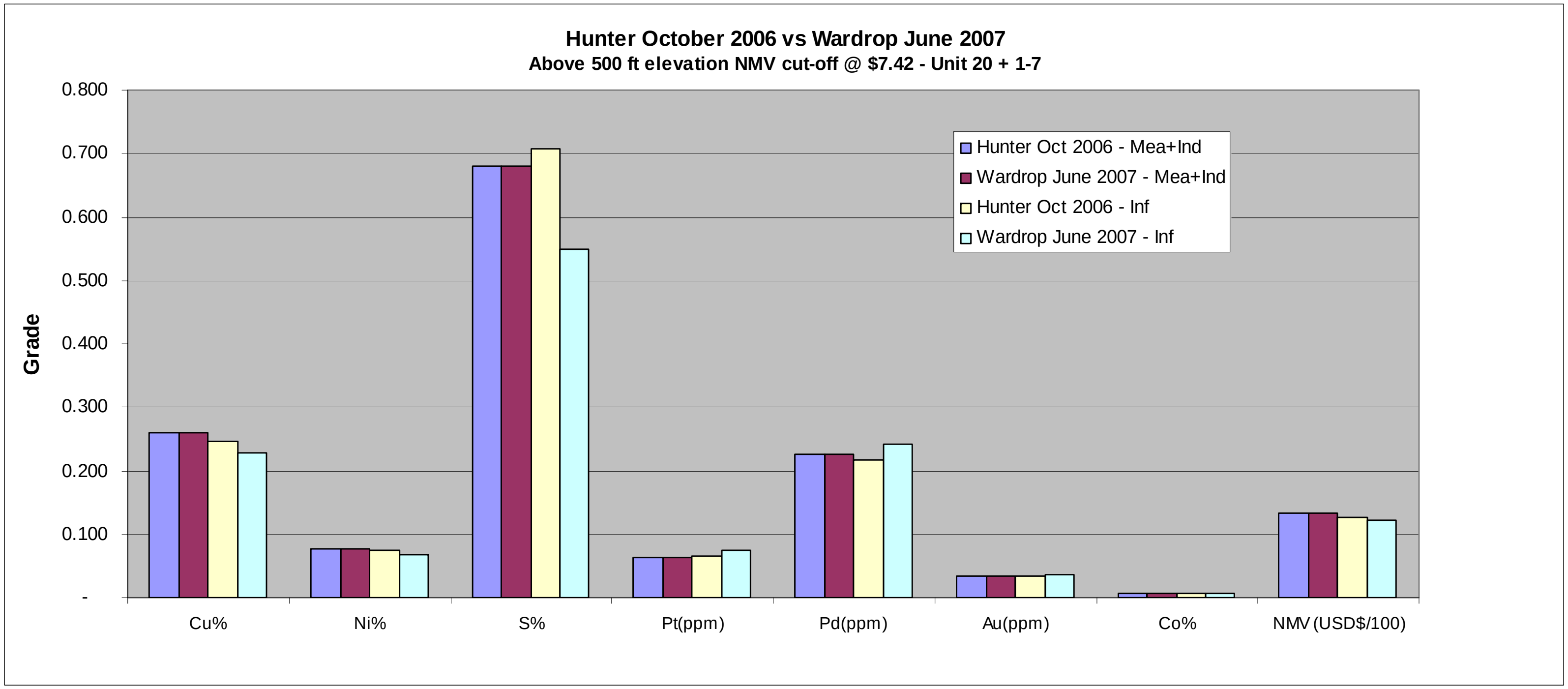


Figure 17.16 Resource Above 500 feet Comparison – Product

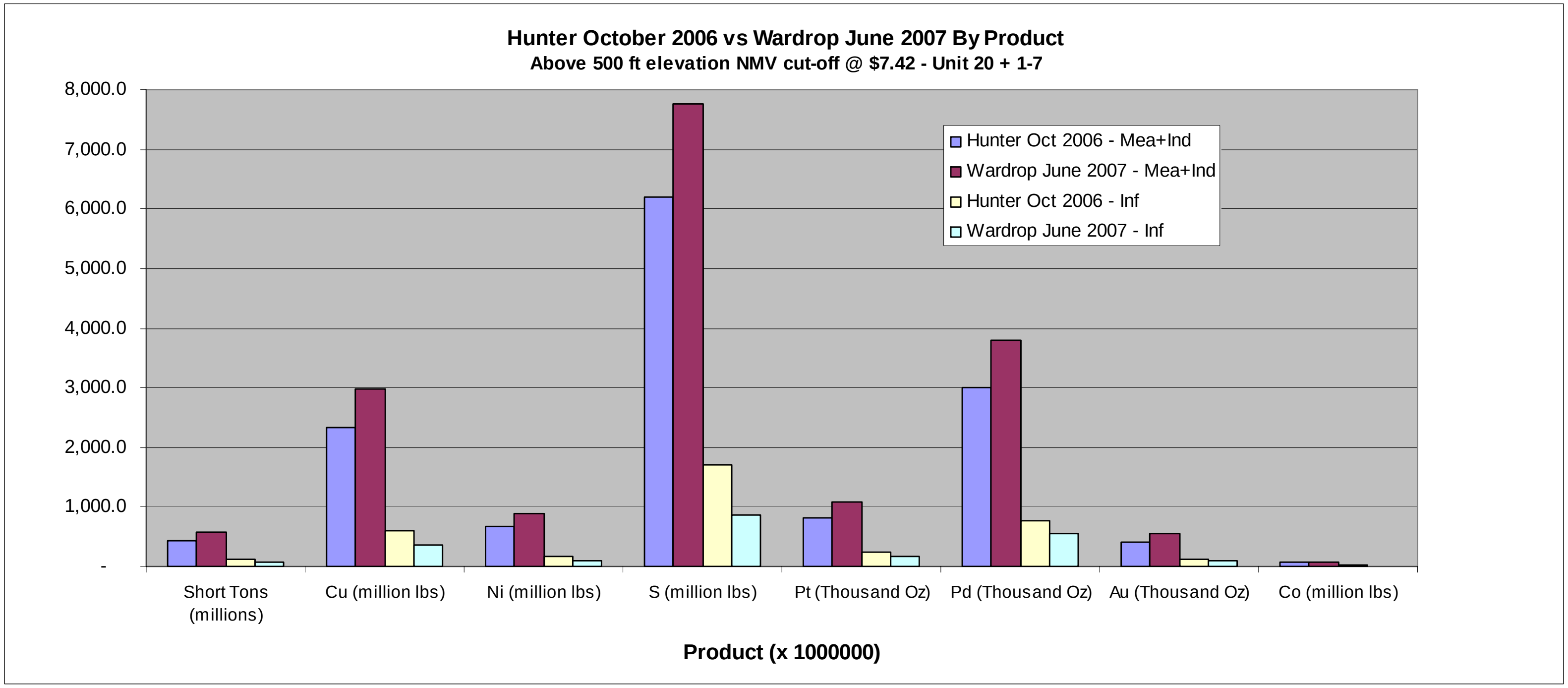


Table 17.28 Resource above 500 feet Comparison – Grade at US$7.42 NMV Cut-off

Source	Tonnage (st in millions)	Cu (%)	Ni (%)	S (%)	Pt(ppb)	Pd (ppb)	Au (ppb)	Co (ppm)	NMV (US$/st)
Hunter Oct 2006 – Measured	133.7	0.298	0.087	0.786	67	269	35	77	15.11
GEMS Wardrop – Measured	187.0	0.287	0.084	0.72	68	256	35	73	14.59
	53.3	**-3.8%**	**-3.6%**	**-8.8%**	**1.7%**	**-5.0%**	**0.6%**	**-4.6%**	**-3.4%**
Hunter Oct 2006 - Indicated	288.4	0.266	0.078	0.711	66	231	33	72	13.54
GEMS Wardrop - Indicated	384.4	0.248	0.074	0.66	63	213	32	71	12.80
	96.0	**-6.9%**	**-5.0%**	**-6.9%**	**-5.2%**	**-7.7%**	**-3.1%**	**-1.4%**	**-5.4%**
Hunter Oct 2006 - Measured + Indicated	422.1	0.276	0.081	0.735	66	243	34	72	14.04
GEMS Wardrop - Measured + Indicated	571.5	0.260	0.077	0.680	64	227	33	72	13.39
Difference Wardrop	**149.4**	**-0.0156**	**-0.0037**	**-0.0554**	**-1.6150**	**-15.9271**	**-0.9590**	**-0.2814**	**-0.6518**
% Difference Wardrop	**35.38%**	**-5.64%**	**-4.61%**	**-7.54%**	**-2.45%**	**-6.55%**	**-2.82%**	**-0.39%**	**-4.64%**
Hunter Oct 2006 – Inferred	120.6	0.247	0.074	0.707	65	217	33	70	12.72
GEMS Wardrop – Inferred	78.6	0.229	0.067	0.55	75	242	37	58	12.26
Difference Wardrop	**-42.0**	**-0.018**	**-0.007**	**-0.159**	**10.134**	**24.793**	**4.269**	**-11.650**	**-0.460**
% Difference Wardrop	**-34.79%**	**-7.21%**	**-8.82%**	**-22.42%**	**15.59%**	**11.43%**	**12.94%**	**-16.64%**	**-3.62%**

Table 17.29 Resource above 500 feet Comparison – Product at US$7.42 NMV Cut-off

Source	Tonnage (in millions st)	Cu (in millions lbs)	Ni (in millions lbs)	S (in millions lbs)	Pt (in thousands oz)	Pd (in thousands oz)	Au (in thousand s oz)	Co (in millions lbs)
Hunter Oct 2006 – Measured	133.7	797	233	2102	261	1049	137	21
GEMS Wardrop - Measured	187.0	1072	314	2680	372	1394	192	27
	39.9%	**34.5%**	**34.8%**	**27.5%**	**42.3%**	**32.9%**	**40.7%**	**33.5%**
Hunter Oct 2006 – Indicated	288.4	1534	450	4101	555	1943	278	42
GEMS Wardrop – Indicated	384.4	1905	570	5087	702	2391	359	55
	33.3%	**24.1%**	**26.6%**	**24.0%**	**26.3%**	**23.0%**	**29.2%**	**31.4%**
Hunter Oct 2006 - Measured + Indicated	422.1	2331	683	6203	817	2992	414	62
GEMS Wardrop - Measured + Indicated	571.5	2977	883	7767	1073	3785	551	82
Diff Wardrop	**149.4**	**645.5**	**200.5**	**1,564.4**	**256.7**	**792.8**	**136.7**	**19.9**
% Diff Wardrop	**35.4%**	**27.7%**	**29.4%**	**25.2%**	**31.4%**	**26.5%**	**33.0%**	**32.1%**
Hunter Oct 2006 – Inferred	120.6	596	178	1705	229	763	116	17
GEMS Wardrop - Inferred	78.6	360	106	863	172	555	86	9
Diff Wardrop	**-42.0**	**-235.3**	**-72.4**	**-842.6**	**-56.3**	**-208.7**	**-30.6**	**-7.7**
% Diff Wardrop	**-34.8%**	**-39.5%**	**-40.5%**	**-49.4%**	**-24.6%**	**-27.3%**	**-26.4%**	**-45.6%**

Table 17.30 Resource Comparison Including Wardrop June 2007 Surface to 0 foot Elevation (US$7.42 NMV Cut-off)

Source	Tonnage (st in millions)	Cu (%)	Ni (%)	S (%)	Pt (ppb)	Pd (ppb)	Au (ppb)	Co (ppm)	NMV (US$)
Hunter Oct 2006 – Measured (Surf to 500 ft elev)	133.7	0.298	0.087	0.786	67	269	35	77	15.11
GEMS Wardrop – Measured (Surf to 500 ft elev)	187.0	0.287	0.084	0.72	68	256	35	73	14.59
GEMS Wardrop – Measured (Surf to 0 ft elev)	187.0	0.287	0.084	0.72	68	256	35	73	14.59
Hunter Oct 2006 – Indicated (Surf to 500 ft elev)	288.4	0.266	0.078	0.711	66	231	33	72	13.54
GEMS Wardrop – Indicated (Surf to 500 ft elev)	384.4	0.248	0.074	0.66	63	213	32	71	12.80
GEMS Wardrop – Indicated (Surf to 0 ft elev)	451.1	0.256	0.075	0.68	65	226	34	70	13.18
Hunter Oct 2006 - Measured + Indicated (Surf to 500 ft elev)	422.1	0.276	0.081	0.735	66	243	34	72	14.04
GEMS Wardrop - Measured + Indicated (Surf to 500 ft elev)	571.5	0.260	0.077	0.680	64	227	33	72	13.39
GEMS Wardrop - Measured + Indicated (Surf to 0 ft elev)	638.2	0.265	0.078	0.692	66	234	34	71	13.60
Hunter Oct 2006 – Inferred (Surf to 500 ft elev)	120.6	0.247	0.074	0.707	65	217	33	70	12.72
GEMS Wardrop – Inferred (Surf to 500 ft elev)	78.6	0.229	0.067	0.55	75	242	37	58	12.26
GEMS Wardrop - Inferred (Surf to 0 ft elev)	251.6	0.275	0.079	0.64	76	272	37	56	14.12

18.0 OTHER RELEVANT DATA AND INFORMATION

Portions of the following section have been extracted from the Hellman and Schofield (2005) report and it covers the historical dataset prior to 2005.

18.1 USS Assays (1960s & 1970s)

USS assays are derived from old records which are incomplete in terms of QA/QC details. There are, however, less than ~200 USS assays remaining in the database that have not been replaced by more recent assays.

Gatehouse (2000a) summarizes the USS sampling and assaying:

> *USX 'bx' diameter drilling and 10' intervals (late60s-70s) was sampled using anvil splitting and prepared and analysed by the central USX laboratory. Sample rejects were kept as –6# and –20# material produced by gyratory and rolls crushers respectively. The precise techniques are not available but given the era, the style of analyses done at that time, and nature of the company it is highly probable that total Cu and Ni assays were produced using AAS. No Au or PGMs were analysed. No quality control has been found for this work.*

There are 1,790 ACME aqua regia re-assays of samples previously assayed by USS. Averages for USS and ACME, respectively are: copper 0.39% and 0.39%; nickel 0.14% and 0.09%. Two-hundred and seventeen check assays by Chemex are available. Averages for USS and Acme, respectively, are: copper 0.25% and 0.25%; nickel 0.11% and 0.08%. Thus USS copper assays match, on average, both those by ACME and Chemex. Nickel appears high in the USS assays which may partly be a result of a more total digestion used. Acme's acid digestion was weaker than that used by Chemex.

18.1.1 Status of Nickel Assays

Gatehouse (2000b) summarizes the status of the Ni assays:

> *Against Genalysis ICP (4B), Chemex partial aqua regia assays are strongly biased as should be expected. On average, the Chemex preferred assays used for the resource calculation are biased low by 5-6% against Genalysis totals. The clear conditional bias in this data is also as expected and consistent with Lakefield metallurgical reports of a proportion of the nickel resident in silicates. Bias changes from about 20% at 500-600 ppm to no recognizable bias at greater than about 0.3% Ni. This pattern is consistent with higher proportions of Ni being resident in sulfide at higher grades. Lakefield metallurgical reports suggest that*

Ni in silicates is variable between 200 and 700ppm. This is also consistent with Co results.

In summary, the NorthMet Ni resource is based on partial digest results. At worst the average bias would be 5% lower than total results. This does not necessarily alter the economics of the project as it may eventuate that Lakefield head assays on which recoveries have been predicated may prove themselves similarly biased.

18.1.2 Status of Copper Assays

Gatehouse (2000b) summarizes the status of the copper assays:

On average, preferred Chemex aqua regia assays are biased low by about 2% against Lakefield XRF results (2A) , by 5% against Genalysis total acid digest ICP (2B) and by 1-2% against Chemex total digest ICP(2C). Such results are consistent with the low partitioning of Cu into silicates and represent a limit of a tolerable assay outcome. Biases of much greater than 5% are not acceptable and require improved assay.

Given the notionally total nature of Genalysis and Lakefield assays it is probable the Chemex aqua regia used in the resource data is low biased from an accurate result by less than 5% on average. This bias is conservative and would have no negative impact on resource figures.

18.1.3 Status of Cobalt Assays

Gatehouse (2000b) summarizes the status of the cobalt assays:

The Chemex aqua regia digestions are significantly low biased, on average about 20%, against Genalysis total assays. The bias is conditional and significantly increases with lower grade. Though the number of samples is smaller, the same effect can be seen between Chemex aqua regia and Chemex total digest ICP.

Cobalt forms a very small portion of the value of the resource and, for economic purposes and factoring through metallurgical recoveries, its resource value is likely to be currently underestimated by around 20%. A small upside exists on the value of the resource by virtue of underestimated resource cobalt being related to total cobalt used in metallurgical calculations.

18.1.4 Status of the Palladium Assays

Gatehouse (2000b) summarizes the status of the palladium assays:

On average, Chemex is biased about 2% high against both Genalysis and Lakefield. Bias is not conditional against Lakefield. Chemex bias is conditional against Genalysis' NiS assay and increases with grade. It is not considered significant given the nugget imprecision between assay types due to sub-

sampling and signified by the large dispersion in the …scatter points. However, this situation should be monitored with ongoing quality control in the event that it might become significant with changing mineralized domain.

18.1.5 Status of the Platinum Assays

Gatehouse (2000b) summarizes the status of the platinum assays:

On average, Chemex is biased low against both Genalysis NiS assays(6B) and Lakefield lead oxide fire assays(6A). Further a conditional bias against Genalysis is similar to that of palladium and similar ongoing monitoring is recommended.

18.1.6 Status of the Gold Assays

Gatehouse (2000b) summarizes the status of the gold assays:

As with Platinum, gold by virtue of its low abundance is subject to significant sub-sampling nugget effects. Though biases are apparent, the low contribution of Au to economic value means they are not significant at this time. However, quality control monitoring should be continued.

Against Becquerel NAA (7C), a very good reference technique for gold analyses, Chemex gold is biased low by 20%. The low levels (50ppb) and severe nugget effects render this insignificant. On average, Chemex is biased low against both Genalysis NiS assays and Lakefield lead oxide fire assays. Further a conditional bias against Genalysis is similar to that of palladium.

Extraction of Au into NiS during fire assay is inefficient. The low bias of Genalysis against Chemex (7B) is expected and not relevant.

The low bias of Lakefield against Chemex is largely a function of assay imprecision at very low grades and is not significant…

18.1.7 Summary – Copper, Nickel, Cobalt

Gatehouse (2000b) summarizes the status of the copper, nickel and cobalt assays:

Chemex aqua regia assays, on which the Cu Ni Co resources are based, are biased low by a small amount. The total economic impact will be less than 5%, which is acceptable for resource assays. Never the less, it is highly probable that there remains an inherent bias.

Initial results for a limited number (54) of samples from the recent metallurgical drilling program support Gatehouse's prediction. Cobalt and nickel assays from 4-acid digestions being 14% and 5%, respectively, higher than assays based on aqua regia. Copper values are similar.

A number of batches assayed in 2000 had included PolyMet standards (N1-3). Some of these have nickel assays that report approximately 10 to 20% above the recommended value though significantly more batches understate nickel. Copper values were largely accurate.

18.1.8 SUMMARY – PLATINUM GROUP ELEMENTS AND GOLD

Gatehouse (2000b) summarizes the status of the platinum group element and gold assays:

> *Though some evidence for conditional biases exist between lead oxide and NiS fire assay for PGEs the low level is acceptable for lead oxide fire assay to be used for ongoing resource assessment. Though of lesser economic significance, the strong negative bias of gold in NiS analyses and its greater cost and expertise required for good assays, strongly mitigates against the NiS technique. However, NiS fire assay for PGEs should be used for quality control monitoring as an ongoing precaution against the potential for significant bias in different mineralized domains at NorthMet.*

It is well recognized that nickel-sulphide (NiS) assays underestimate gold. The only good reason to select NiS assaying is for the determination of rhodium, rhenium, etc (Bloom, pers comm).

19.0 INTERPRETATION AND CONCLUSIONS

Wardrop estimated a mineral resource for the NorthMet deposit using data supplied by PolyMet. This data incorporates the 2006-2007 drilling results that were available as of May 25th, 2007. The model incorporated an extension of the block model matrix down to the 0.00 foot elevation (giving a total vertical depth of about 1,600 feet), a new, reduced block size based upon a selective mining unit determination, a new interpolation plan that honoured the geological features and statistical characteristics of the deposit and a new classification model.

The pre-2007 dataset used by Wardrop was extensively verified by previous authors and Wardrop spot checked selected holes from the USS era and the PolyMet 1999, 2000 and 2005 drill campaign against the paper copies of the laboratory certificates. The 2007 drilling was verified by Wardrop using the electronic version of the laboratory certificate.

Wardrop's Senior Geologist visited the site, reviewed some of the historical drill core and interviewed PolyMet staff. Wardrop believes that the information supplied for the resource estimate and used in this report is accurate.

Model was interpolated using Ordinary Kriging with Inverse Distance Squared and Nearest Neighbour interpolation methods used for validation. No significant discrepancies exist between these methods.

Wardrop estimate the NorthMet resources (above a US$7.42 NMV cut-off) to contain 638.2 million short tons (578.8 million tonnes) in the Measured and Indicated categories grading at 0.265% copper, 0.078% nickel, 66 parts per billion (ppb) platinum, 234 ppb palladium, 34 ppb gold and 71 parts per million (ppm) cobalt. The Inferred category (above a US$7.42 NMV cut-off) totals 251.6 million short tons (228.2 million tonnes) grading at 0.275% copper, 0.079% nickel, 76 ppb platinum, 272 ppb palladium, 37 ppb gold and 56 ppm cobalt.

The NMV formula used and described in Section 17.2.11 of this report includes gross metal price multiplied by the processing recovery minus refining, insurance and transportation charges and is the same formula used in the Hunter 2006 report.

Above the 0.2% copper cut-off the NorthMet deposit contains 400.9 million short tons (363.6 million tonnes) in the Measured and Indicated categories grading at 0.328% copper, 0.089% nickel, 79 ppb platinum, 287 ppb palladium, 41 ppb gold and 73 ppm cobalt. The Inferred category totals 171.6 million short tons (155.6 million tonnes) grading at 0.332% copper, 0.088% nickel, 88 ppb platinum, 322 ppb palladium, 43 ppb gold and 55 ppm cobalt.

Comparing the Wardrop model with the previously published estimate on page 78 of the Hunter 2006 report, results show an increase of 53.3 million short tons (48.3 million tonnes) in the Measured category and 96.0 million short tons (87.1 million tonnes) in the Indicated category for a total of 149.4 million short tons (135.5 million tonnes) or 35.4% increase in the Measured plus Indicated category. The Inferred Resource tonnage dropped by 42 million short tons (38.1 million tonnes) or 34.8%. The comparison includes resources above a US$7.42 Net Metal Value (NMV) cut-off from surface down to the 500 ft elevation level.

Compared with the DFS estimate, grades in the Measured and Indicated categories drop slightly for all grade elements. Copper (Cu) decreases by 5.64%, nickel (Ni) by 4.61%, platinum (Pt) by 2.45%, palladium (Pd) by 6.55%, gold (Au) by 2.82% and cobalt (Co) by 0.39%. However, the contained metal value increases significantly for all elements upwards of 25% in the Measured and Indicated categories. Copper increased by 27.75%, nickel by 29.14%, platinum by 31.4%, palladium by 26.51%, gold by 33.0% and cobalt by 32.1%.

The work carried out during 2007 has met the primary objectives relating to the in-fill drilling. It is expected that the remaining data from the 2007 summer campaign will enhance the existing data set with a higher confidence in the size and spatial distribution of the grade in the Magenta Zone as well as extending the margins of the zone to the south and west.

20.0 RECOMMENDATIONS

Wardrop recommends the following:

- Carry out a conditional simulation study prior to detailed pre-production planning to quantify the impact of grade uncertainty. The study can evaluate confidence limits for grade and tons (pounds) of metal in annual production, determine the impact of grade and ore-type uncertainty on selected mine plan performances and implement a simulation-based resource classification methodology.
- An on-going program of resource definition diamond drilling should continue with the objective of increasing resource and reserve tonnages. This program will have two basic components with different objectives and can be carried out in annual campaigns between now and about production year 5;
  - A shallow drilling component targeted at Units 5, 6 and 7 with the aim of identifying near surface pockets of mineralization that would result in increases in Reserve; and,
  - A deeper drilling component targeting Unit 1 at depth (below 0 feet elevation) where there is a high probability of increasing resource tonnage.

  This drilling will also provide information for planning of any future production expansion.
- Carry out a geostatistical study of the elements that may have a measurable effect on stockpile drainage water quality for waste characterization and environmental purposes prior to the next resource update in order to establish an appropriate interpolation plan for these elements. Essentially, this will be a desk top study using the existing database which will also re-assess the sulphur model used for the current resource estimate.
- Continue to review and reassess core drilled by USS with particular reference to skeletonised holes within or near the current 20 year pit shell.
- Use the annual pits plans to Year 5 developed by Wardrop (June, 2007) to identify future target areas for drilling. Potentially improving confidence in grade, resource size and categorization (Inferred) within these pits will have the most economic benefit to the NorthMet deposit.
- Prior to detailed, pre-production planning a limited program of close spaced drilling is required. This program will have two objectives;
  - To determine the optimum drill hole spacing required for reliable ore grade and waste quality prediction as an essential production planning and scheduling tool; and,
  - To acquire sufficient data to confidently plan the initial phase of mine production.

- Carry out a study to determine the optimum size of sample required for confident grade estimation during production. The purpose of this work would be to provide a basis for the design of a grade control drilling procedure that would be applied to ore and waste definition; the latter being essential for environmental management.
- Revise the geologic model to better incorporate known structural geology features and assess if these structural domains have any relation to mineralization.
- Revisit previous outcrop mapping done in the area and assess for relation to mineralization and structural indicators.

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22.0 CERTIFICATES OF QUALIFIED PERSONS

22.1 CERTIFICATE FOR PIERRE DESAUTELS, P.GEO.

I, Pierre Desautels, P.Geo., of Toronto, Ontario, do hereby certify that as an author of this report titled "Technical Report on the NorthMet Deposit, Minnesota, USA", dated September 21st, 2007, I hereby make the following statements:

- I am a Senior Geologist with Wardrop Engineering Inc. with a business address at 604-330 Bay Street, Toronto, Ontario, M5H 2S8.
- I am a graduate of the University of Ottawa, (B.Sc. Honours, 1978).
- I am a member in good standing of Association of Professional Geoscientists of Ontario (License #1362).
- I have practiced my profession continuously since graduation.
- 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 purpose of NI 43-101.
- My relevant experience with respect to this report includes 26 years experience in the mining sector covering database, mine geology, grade control and resource modeling. I was involved in numerous projects around the world in both base metals and precious metals deposits
- I am responsible for the preparation of all of section 1, parts of sections 2 and 3, and 14, and all of sections 17, 18, 19, 20 of this technical report titled "Technical Report on the NorthMet Deposit, Minnesota, USA ", dated September 21st, 2007. In addition, I visited the Property during the period March 21st – 23rd, 2007 and August 27th – 29th, 2007.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- As of the date of this Certificate, to my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
- I am independent of the Issuer as defined by Section 1.4 of the Instrument.
- I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Signed and dated this 21st day of September, 2006 at Toronto, Ontario.

"Original Document, Revision 02 signed
and sealed by Pierre Desautels, P.Geo."

Signature

22.2 CERTIFICATE FOR RICHARD PATELKE, P.GEO.

I, Richard Patelke, of Duluth, Minnesota, USA**,** do hereby certify that as an author of this report titled “Technical Report on the NorthMet Deposit, Minnesota, USA”, dated September 21st, 2007, I hereby make the following statements:

- I am NorthMet Project Geologist with PolyMet Mining Inc. with a business address at P.O. Box 475, Hoyt Lakes Minnesota, 55803, USA.
- I am a graduate of University of Minnesota, (MSc.,1996).
- I am a Registered Professional Geologist in good standing in the State of Minnesota (License # 30080).
- I have practiced my profession continuously since graduation.
- 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 purpose of NI 43-101.
- My relevant experience with respect to this report includes: I have worked on the Duluth Complex, this deposit, and others in the region as a student, university research scientist, and as a private individual, since 1990.
- I am responsible for the preparation of parts of sections 2 and 3, all of sections 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, parts of section 14, and all of section 16 of this technical report titled “Technical Report on the NorthMet Deposit, Minnesota, USA “, dated September 21st, 2007. I have worked regularly on the site from June of 2004 to the current time.
- I have prior involvement with the Property that is the subject of the Technical Report as noted above.
- As of the date of this Certificate, to my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
- I am not independent of the Issuer as defined by Section 1.4 of the Instrument.
- I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Signed and dated this 21st day of September**,** 2006 at Hoyt Lakes, Minnesota.

“Original Document, Revision 02 signed and sealed by Richard Patelke, P.Geo.”

Signature