

**TECHNICAL REPORT ON THE  
MCILVENNA BAY PROJECT,  
SASKATCHEWAN, CANADA**

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**PREPARED FOR  
FORAN MINING CORPORATION**

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**SCOTT WILSON ROSCOE POSTLE ASSOCIATES INC.**

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# **1 SUMMARY**

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) was retained by Bob Nylen, President and CEO of Foran Mining Corporation (Foran), to prepare an independent Technical Report on the McIlvenna Bay Project, near Hanson Lake in northeastern Saskatchewan. The purpose of this report is to provide an updated technical report and a mineral resource estimate for the property. This Technical Report conforms to National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101). Scott Wilson RPA visited the property on September 26, 2006 and spent September 27-29 in the Foran facilities in Saskatoon looking at data and drill core from a number of holes.

Foran is involved in the acquisition, exploration and development of mineral properties and is currently focused on the development of their gold and base metal properties located in northern Manitoba and Saskatchewan. This report deals with the McIlvenna Bay Project, a Zn-Cu volcanogenic massive sulphide deposit which is at the advanced exploration stage. The major asset of the property is a large body of Cu-Zn mineralization for which there is an historic resource estimate that is not compliant with NI 43-101.

In 1990, Scott Wilson RPA, then known as Roscoe Postle Associates Inc. (RPA), did a resource estimate on this property for Billiton Metals Canada Inc.

## **CONCLUSIONS**

A significant mineral resource has been estimated for the McIlvenna Bay property as summarized in Table 1-3. Indicated resources total 6,671,000 t at a grade of 0.87% Cu, 6.51% Zn, and 26.0 g/t Ag. Inferred resources total 6,000,000 t at a grade of 0.83% Cu, 5.89% Zn, and 24.8 g/t Ag. These numbers differ from the historic resource estimation by Foran in 2000. Due to the more erratic nature of the copper mineralization in the copper stringer zone, the use of an arbitrary cut-off grade for interpretation was not appropriate. The geological boundaries and entire intersection in each drill hole in this zone were used instead. As well, a minimum width of three metres was imposed on all

zones where the previous interpretation included the occasional narrow intersection for the sake of continuity.

The higher cut-off value used by Scott Wilson RPA eliminates much of the Copper Stringer zone from either category.

More fill in diamond drilling is required to upgrade the mineral resources and to trace their extension down plunge to the northwest.

Given the advanced stage of this project, it would be reasonable to carry out a preliminary assessment/scoping study after the completion of the next phase of drilling.

**RECOMMENDATIONS**

A nine hole, 9,600 m drilling program is recommended as outlined in the budget in Table 1-1. The pierce points of the proposed holes are shown on the Longitudinal Section, Figure 20-1. The purpose of the drilling is to tighten up drill hole spacings so that the mineral resources might be upgraded and to explore the down plunge extension of the McIlvenna Bay sulphide deposit (to the northwest). Upon completion of the proposed drilling, the current mineral resource estimate should be updated and a preliminary assessment/scoping study carried out.

Contingent on the results of the preliminary assessment, a Phase 2 drilling program should be considered to acquire mineralized material for metallurgical test work.

Scott Wilson RPA recommends that a rigorous program of QA/QC be instituted for the next phase of drilling.

**TABLE 1-1 RECOMMENDED PROGRAM AND BUDGET FOR THE  
PERIOD, NOV 1/06 TO FEB 28/07  
Foran Mining Corporation- McIlvenna Bay Project**

Item	Expenditure, C\$
Salaries/ Supervision	141,000
Field Office Rental/ Communications	30,000
Transportation	9,000
Diamond Drilling: Confirmation/infill drill program 9 DDH = 9,600 m @ C\$100/m	960,000
Camp Costs	45,000
Camp setup	25,000
ATV Rental – \$800/mo x 3 mo.	2,400
Borehole survey equipment – purchase	20,000
Assaying 600 samples x \$30/sample	18,000
Core Logging Software Purchase	20,000
Scoping Study	150,000
Contingency	142,000
<b>TOTAL Phase 1</b>	<b>1,562,000</b>

## TECHNICAL SUMMARY

### *PROPERTY DESCRIPTION, LOCATION, LAND TENURE*

The McIlvenna Bay deposit occurs within Foran's Hanson Lake property which comprises 26 claims totaling 12,950 ha. Located approximately one kilometre south of Hanson Lake, Saskatchewan, the property is also approximately 375 km northeast of Saskatoon and 65 km west-southwest of Flin Flon, Manitoba. The McIlvenna Bay deposit is located within NTS sheet 63L10 and the plan projection of the deposit is centered on UTM 640,600 E and 6,056,800 N (NAD 83, Zone 13). The corresponding geographic coordinates are 102°50' W and 54°38" N.

The claims are all in good standing and are held in the name of Foran Mining Corporation.

On January 25, 2005, Foran announced that it had entered into a definitive agreement with Cameco Corporation (Cameco) and Billiton Metals Canada Inc (BHP Billiton), collectively the Hanson Lake Joint Venture, which allowed Foran to acquire a 100% interest in the Hanson Lake property (McIlvenna Bay Cu-Zn deposit). Foran would acquire 100% of the Hanson Lake property by:

- i) paying C\$1,500,000 to the Hanson Lake Joint Venture
- ii) paying a further C\$2,000,000 to the Hanson Lake Joint Venture before May 31, 2006; and
- iii) providing the Hanson Lake Joint Venture with a 1% Net Smelter Return (NSR), with a buy-out provision in favour of Foran for the purchase of the whole NSR for Cdn.\$1,000,000 at any time.

In subsequent agreements with Copper Reef Mines Ltd., newly named Copper Reef Mining Corporation (Copper Reef), a private company organized under the laws of Manitoba, Foran organized the finances to fulfill the terms of the agreement with the Hanson Lake Joint Venture. As a result, Copper Reef has been assigned a 25% interest in the property, Foran retains a 75% interest and the two have entered into a joint venture for the purpose of developing the property.

The property, which is accessible by an all weather road, has no infrastructure other than a camp building and a core storage yard.

#### **HISTORY**

In 1987, Cameco flew a Mark VI helicopter INPUT survey over the area south of Hanson Lake, with flight lines oriented NE-SW. The survey delineated a 1,200 m long INPUT anomaly, striking east-south-east, 1 km south of McIlvenna Bay.

In January 1988, a ground magnetometer and HLEM survey defined the anomaly and six holes were subsequently drilled into what is now the McIlvenna Bay deposit. From 1989 to 1991, an additional 61 drill holes were completed. Fifty-six of the holes were drilled to test the deposit, of which only five failed to intersect economically significant mineralization. In 1991, Cameco suspended exploration activities at the Hanson Lake property and it remained idle until optioned in 1998 by Foran Mining Corporation.

As of May 31, 2000, Foran drilled 59 additional holes totaling 33,350 m into the property, with 57 holes directly testing the deposit. The first 44 holes were drilled with the objective of upgrading the quality of the resource to a depth of 580 m from the Inferred Resource Category to the Indicated Resource Category. The last 15 holes were drilled below the plunge line and down plunge of the deposit and extended the deposit an additional 300 m vertically below the plunge of the previous resource base.

The most recent estimate, with the largest drill database, was completed by R. Lemaitre of M'Ore Exploration Services in June 2000, after the completion of Foran's 44-hole infill drilling program. This block model resource estimate was based on a total of 63,344 m of diamond drilling from 124 holes, of which 33,350 m of drilling was completed by Foran between December 1998 and May 2000. Cut-off grades of 1.5% copper or 4.0% zinc were used. The area between L93+00E and L103+50E and above the 580 m vertical depth was deemed to have been drilled at sufficient intersection spacings to be classified as an Indicated Resource. The remainder of the mineralization delineated to a maximum depth of 1,230 m vertical is classified as Inferred Resources. Estimated resources are listed in Table 1-2.

**TABLE 1-2 JUNE 14, 2000 BLOCK MODEL RESOURCE ESTIMATE**  
**Foran Mining Corporation – McIlvenna Bay Project**

Headings	Tonnage (metric tonnes)	Au (g/t)	Ag (g/t)	Cu (%)	Zn (%)	Pb (%)
<b>Lens 2, Upper West, Lens 3</b> Indicated	6,907,364	0.51	24.17	0.89	6.59	0.45
<b>Lens 2, Upper West, Lens 3</b> Inferred	7,602,473	0.40	23.28	0.93	5.61	0.35
<b>Copper Stringer Zone</b> Indicated	4,363,067	0.67	12.15	1.82	0.32	0.03
<b>Copper Stringer Zone</b> Inferred	7,463,827	0.60	12.75	1.80	0.65	0.05
<b>Lens 4</b> Inferred	328,092	0.74	10.44	1.77	0.94	0.04

This resource estimate was independently audited by Watts, Griffis, and McOuat who overall, concurred with the block modelling results and concluded that the modelling procedures and categorization were completed according to industry standards.

Scott Wilson RPA has also closely reviewed the previous Foran resource estimate and agrees that, except for the Copper Stringer zone, the block modelling methodology, results and classification are acceptable and comply with industry standards.

**REGIONAL GEOLOGY**

The Hanson Lake property is located on the western edge of the Early Proterozoic Flin Flon Greenstone Belt (FFGB) which extends from north central Manitoba into northeastern Saskatchewan. The FFGB forms part of the Reindeer Zone, a subdivision of the Trans-Hudson Orogen, a continental-scale tectonic event which occurred approximately between 1.84 Ga and 1.80 Ga as a result of the collision between the Superior and Hearne Archean Cratons.

The FFGB is composed of structurally juxtaposed volcanic and sedimentary assemblages that were emplaced in a variety of tectonic environments. The major 1.92-1.88 Ga components include aerially significant juvenile arc and juvenile ocean-floor rocks, and minor ocean plateau/ocean island basalt. The juvenile arc assemblage comprises tholeiitic, calc-alkaline, and lesser shoshonitic and boninitic rocks similar in major and trace element geochemistry to modern intra-oceanic arcs. Ocean-floor basalt sequences are exclusively tholeiitic, and are geochemically similar to modern N- and E-type MORBs erupted in back-arc basins. Evolved arc assemblages and Archean crustal slices are present within the FFGB as minor components.

As currently viewed, the Flin Flon Greenstone Belt contains eight geographically-separate juvenile island arc volcanic assemblages (blocks), each of which is 20 km to 50 km across. From east to west, they are known as the Snow Lake, Four Mile Island, Sheridan, Flin Flon, Birch Lake, West Amisk, Hanson Lake, and Northern Lights Assemblages. These assemblages are separated by major structural features and/or areas of differing tectonostratigraphic origin. It is unclear whether the eight juvenile arc sequences represent different island arcs, or segments of a larger continuous arc. Within the belt, each tectonostratigraphic block has been broken into several sub-blocks, usually bounded by local to regional fault systems. Correlation of stratigraphy between sub-blocks is difficult to impossible to determine.

The exposed portion of the FFGB is approximately 250 km in an EW direction by 75 km NS. To the north, it is in tectonic contact with gneissic metasedimentary, metavolcanic and plutonic rocks of the Kisseynew Domain. To the south, it is overlain by flat lying to southerly dipping Ordovician platformal cover rocks.

### **LOCAL GEOLOGY**

The Hanson Lake Block, the host terrain of the McIlvenna Bay Deposit, is bound to the east by the Sturgeon-Weir Shear Zone and to the west by the Tabbernor Fault Zone. The block extends an unknown distance to the south beneath a nearly flat-lying cover of Ordovician sandstones of the Winnipeg Formation, and dolomites of the Red River Formation.

In the Hanson Lake area, north of the Paleozoic margin, the exposed Proterozoic rocks of the Hanson Lake Block are dominated by juvenile island arc, felsic to intermediate metavolcanic rocks, with subordinate amounts of mafic volcanics, minor intermediate volcanics, and greywackes. Oxide facies iron formations are not commonly exposed but their presence has been confirmed by diamond drilling. The sequence has been intruded by various felsic intrusions, some of which are believed to be subvolcanic intrusions. Abundant diorite and gabbro plugs and dykes cut the sequence as well as minor ultramafic intrusions. The supracrustal rocks generally dip moderately to steeply east to north-east. South of Hanson Lake, the Proterozoic sequence is poorly understood because of the unconformably overlying Paleozoic sedimentary rocks. The McIlvenna Bay Deposit projects to sub-surface under the sedimentary cover.

At least two distinct folding events, both having northerly trending fold axes, have influenced the stratigraphy in the Hanson Lake Area. Peak regional metamorphism probably reached upper amphibolite facies. At the McIlvenna Bay Deposit, the host rocks exhibit a greenschist metamorphic facies which is probably a retrograde event after a previous amphibolite grade since relict cordierite, anthophyllite, garnet and andalusite are commonly observed in the VMS alteration package. U-Pb age dating of a quartz-feldspar porphyry (a possible subvolcanic intrusion) which intruded the supracrustal sequence yielded a date of  $1888 \pm 12$  Ma.

**PROPERTY GEOLOGY**

Lacking any outcrop in the area of the deposit, the property geology has been interpreted from the drill core record with help from geophysical surveys.

The stratigraphy of the deposit area, divided into six formations, has been defined over a two kilometre strike length by a total of 124 drill holes. The lowest formation intersected by drilling both structurally and stratigraphically is the **McIlvenna Bay Formation**. This is comprised of a minimum 200 m thickness of variably altered felsic volcanics, volcanoclastics and/or volcanic-derived sediments of rhyolitic composition. The massive and semi-massive sulphide deposits are part of this formation. The McIlvenna Bay Formation is overlain to the north by the **Cap Tuffite Formation**, a sequence of intercalated felsic volcanic and cherty metasediments which have been intruded by sills and dykes of the Davies Gabbro (described below). The unit ranges from 35 m to 55 m thick, is finely banded to finely laminated and ranges from white to cream to grey-green in colour. An east to west zonation is observed in the Cap Tuffite from cherty-dominated in the east to rhyolitic-dominated in the west. Stratigraphically overlying the Cap Tuffite is the **Koziol Iron Formation**, a long continuous exhalative horizon traceable in drill core and by geophysics over several kilometres and as such, an excellent stratigraphic marker horizon. The unit is a true oxide-facies iron formation that ranges from 0.1 m to 25 m true thickness and is composed of 1 cm to 5 cm thick bands of fine-grained chert, interbedded with 1 mm to 50 mm massive magnetite bands and 1 cm to 1 m thick massive grunerite±garnet±magnetite ±chlorite bands. Overlying the Koziol Formation is the **Rusk Formation**, a thick package of massive and calcite-altered mafic volcanic rocks that are approximately 100 m thick. The mafic rocks are likely massive flows, although the thickness of individual flow units cannot be determined from drill core. Topping the Rusk Formation is another exhalative horizon, the **HW-A Formation** which ranges from 1 cm to 5 m thick and shows a transition from west to east from oxide-facies iron formation to massive sphalerite-pyrite. Overlying the iron formation portion is a 1 m to 10 m thick massive mafic volcanic unit. Overlying the 10 cm to 75 cm thick sphalerite-pyrite layer is a 5 m to 15 m thick massive, grey, felsic volcanic unit. Overlying the HW-A Formation is a 400 m thick **Upper Sequence**, a bimodal package of volcanic units that have been difficult to correlate from hole to hole. Approximately 45%

of the unit is composed of aphanitic, grey, felsic volcanic, and 50% fine-grained mafic volcanic rocks. Some of the mafic units may be gabbroic intrusions. Approximately 5% of the unit is composed of greywackes and at least two additional oxide-facies iron formation horizons. The **Davies Gabbro**, a plug up to 100 m thick east of the deposit, extends westward toward the centre of the sulphide body where it narrows into a series of thin dykes. The gabbro appears to be a series of sills that have intruded along the bedding planes of the Cap Tuffite Formation. The gabbro plug plunges along an axis parallel to the sulphide body and appears to exert some sort of control over the limits of mineralization along the bottom plunge line of the deposit.

### **STRUCTURE**

Stratigraphy in the deposit area strikes between 275° and 295° and dips to the north at 65°-70°, although in selected areas it dips vertically. The deposit has the same orientation as the stratigraphy and also plunges at approximately 45° to the northwest. Rocks in the host stratigraphy are massive to strongly foliated, the intensity of which depends on the competency of each individual unit and the degree of alteration.

Two phases of folding of the host stratigraphy have been observed in the drill core and are believed to correspond to the regional F2 and F3 folding events.

Evidence of faulting has been documented in drill core but it is difficult to determine the orientation, scale, or continuity of most faults between drill holes with the present level of information.

### **DEPOSIT TYPE AND MINERALIZATION**

The target deposit on the McIlvenna Bay property is a volcanogenic massive sulphide (VMS) deposit, a synvolcanic accumulation of sulphide minerals that occur in geological environments characterized by submarine volcanic rocks.

The McIlvenna Bay deposit consists of structurally modified, strataform, volcanogenic, polymetallic massive sulphide mineralization and associated stringer zone mineralization. The sulphides contain copper and zinc, with low lead and silver and gold

values. The deposit has undergone strong deformation and upper greenschist to amphibolite facies metamorphism. The sulphide lenses are now attenuated down the plunge to the northwest.

The McIlvenna Bay deposit is comprised of five different zones and includes three distinct styles of mineralization. The five zones identified are the Lens 2, the Upper West, Lens 3, Lens 4, and the Copper Stringer Zone. The three different styles of mineralization are massive sulphides, semi-massive sulphides, and copper stringers. Each style is mineralogically and texturally distinct.

The **Lens 2 Massive Sulphide** is by far the largest and most significant massive sulphide zone in the McIlvenna Bay deposit. It has a strike length of 400 m to 550 m, ranges in true thickness from 0.40 m to 16.75 m and has an average thickness of 5.55 m. The zone plunges approximately 45° to the north and strikes at 295° with an average dip of 68°. The zone has been defined from the top of the Proterozoic sequence at a vertical depth of 35 m down to a depth of 1,230 m and remains open down plunge.

The **Upper West Zone** is a relatively copper-gold-enriched semi-massive sulphide unit found as a long strip that lies parallel to and along the top of the plunge line of the Lens 2 Massive Sulphide. It has a strike length of 150 m to 300 m and has been delineated between the vertical depths of 35 m and 1,230 m. It varies from 2.80 m to 10.60 m true thickness and averages 4.81 m true thickness. The zone remains open down plunge below the 1,230 m level. This zone also appears to be one continuous sheet and is relatively more copper and gold-rich compared to the Lens 2 Massive Sulphide.

The **Lens 3 Massive Sulphide** is a discontinuous and generally very thin massive and semi-massive sulphide horizon that is located 10 m to 30 m above the Lens 2 and Upper West horizon. The zone has a strike length of 100 m to 350 m and plunges parallel to the underlying mineralized zones. The true thickness of the zone ranges from 0.18 m to 6.65 m and averages 2.39 m.

The **Lens 4** mineralized zone is located approximately 40 m to 50 m below the Upper West Zone of the Lens 2 horizon, roughly between coordinates 9300E and 9500E. The zone was intersected in four holes, HA-26, MB-99-107, MB-99-108, and MB-99-118. In hole 107, a large semi-massive interval was intersected, with mineralogy, texture and grades similar to that of the Upper West Zone. The zone is underlain by a thick copper stringer zone.

The **Copper Stringer Zone** underlies and is in contact with the Upper West Zone and the western half of the Lens 2 Massive Sulphide. The zone is wedge-shaped with the blunt edge running parallel to the plunge of, and underlying the Upper West Zone. The wedge terminates near the central axis of the Lens 2 Massive Sulphide. The zone is thickest underlying the Upper West Zone, where it is considered to be the proximal hydrothermal feeder zone for the hydrothermal system which deposited the massive sulphides. Stringer mineralization in this area is hosted in chlorite-altered rock. To the east, immediately underlying the Lens 2 Massive Sulphides, the stringer mineralization is hosted in fine fracture networks in silicified and sericitized rock. The zone, which contains multiple narrow stringers, has been delineated between the vertical depths of 35 m and 1,230 m. The best portion of this zone has a strike length of 300 m to 600 m and ranges from 0.57 m to 48.30 m true thickness, averaging 8.08 m. The stringer zone remains open to the west and down plunge below the 930 m level.

The most interesting feature of the deposit is the fact that the Upper West Zone remains open down plunge, and likely, both it and the plumbing system underlying it will continue at depth. This possibility should be tested by additional drilling.

#### ***DRILLING***

Cameco and Foran employed similar drilling procedures on the McIlvenna Bay Project. The top of the holes from surface down through the Paleozoic cover sequence was drilled with HQ rods. The drill string was reduced to NQ for drilling below the Proterozoic regolith. This same procedure was employed by Cameco during their drilling program. All but a handful of the Cameco holes, and all of the Foran holes still have

their HQ rod string in the hole allowing one to locate the holes on surface and to re-enter them if necessary.

Down hole surveying of Cameco holes HA-60 through HA-65 was completed using acid tests only. Holes HA-01 through HA-17, and HA-66 and HA-67 were completed using Tropari and acid test measurements. All other Cameco holes were surveyed using the Techdel International Light-Log system.

Down hole surveying on all of the Foran holes was done using a combination of Tropari measurements and acid tests. Due to the presence of magnetic rocks in the stratigraphy, especially the iron formations, Tropari azimuths were sometimes inaccurate and were occasionally ignored in order to get reasonably accurate hole locations. Tropari measurements were taken at approximately 75 m intervals, acid tests were taken every 50 m. The use of Tropari measurements was considered acceptable for the shorter holes as the influence of the one or two iron formation horizons intersected in such holes could be eliminated by careful analysis of the Tropari data and logging of the core. However, the Tropari instrument was totally inadequate as a surveying tool for the deep, step out holes 67, 111, 120A, 122, 122W1, 124, and 125. Foran concluded that the locations of the intersections of these holes have an estimated error of  $\pm 50$  m in the east-west direction and  $\pm 25$  m in the vertical direction. A resurvey of many, or all, of the holes with a non-magnetic down hole instrument may be warranted in the future.

#### ***SAMPLING METHOD, SAMPLE PREPARATION, ANALYSES, SECURITY AND DATA VERIFICATION***

For all Foran drill holes, assay samples were generally taken on 1.0 m intervals and all sample boundaries respected the geological contacts. Samples smaller than 1.0 m long were taken when necessary to respect such conditions. Samples as large as 1.5 m long were taken in weakly mineralized copper stringer zone estimated to contain less than 1% copper.

All samples were cut in half by diamond saw and one half of the core was submitted for assay analysis. Metal tags with the sample numbers inscribed were stapled into the

box marking the sample boundaries. Boundary limits were also marked on the core box itself to limit any sampling errors. The unsampled half of the core was kept intact in the core box and stored.

Assays taken during the Cameco program were also taken on 1.0 m intervals. However, sample boundaries did not respect the Cameco-logged geological contacts in several holes.

Statistics on percentage core recovery are not available for either the Foran or Cameco drilling campaigns. From Scott Wilson RPA's examination of core stored in the field and in the Saskatoon storage facility, we would estimate that there was perhaps 95% to 98% core recovery, at least in the mineralized sections. Hence the sawed/sampled material sent for assay should be an accurate reflection of one half of the core and should be free of any bias because of the competent nature of the core produced.

The true thickness of any mineralized intercept can only be estimated on those sections where the density of drilling is sufficient to determine the boundaries of the mineralized zone(s).

For the Cameco work, little information is available for security measures employed, quality control or quality assurance procedures, and who actually prepared the samples. The samples of sawn core were sent mostly to TSL Assayers in Saskatoon for preparation and analyses. The split halves were assayed by standard Atomic Absorption techniques for zinc, copper, silver, and lead and by fire assay/atomic absorption finish for gold.

The bulk of the assaying and all sample preparation from the Foran drilling programs were also done at TSL Assayers. One in ten samples was check assayed at the Saskatchewan Research Council. The QA/QC procedures used by Foran were not as rigorous as one might expect in a current program. Nonetheless, Scott Wilson RPA believes that the work was done in accordance with the best practices of the time and that the results should be reliable.

Scott Wilson RPA selected ten samples of quarter split drill core for duplicate analyses. With the exception of the copper value for one sample, there was reasonably good correlation between the duplicate assays and the original Foran assays.

A comparison of analyses as quoted on original assay certificates to the numbers listed in drill logs for specific assay intervals did not locate any serious errors in transcription.

#### **MINERAL RESOURCE ESTIMATE**

Scott Wilson RPA prepared a mineral resource estimate of the McIlvenna Bay deposit using digital drill hole data provided by Foran. Scott Wilson RPA interpreted a set of cross sections, and also used long sections and plans to construct 3D wireframes of the mineralized zones. Variogram parameters were determined separately for each mineralized zone. A block model was interpolated using the kriging and inverse distance methods and a mineral resource for copper, zinc, and silver was estimated (Table 1-3).

**TABLE 1-3 MCILVENNA BAY MINERAL RESOURCES**  
**Foran Mining Corporation - McIlvenna Bay Project**

NSR Cut-off	Category	Zone	Tonnes (000)	Cu %	Zn %	Ag (g/t)	NSR (\$)
\$50	Indicated	Lens 2 Massive	4,763	0.27	7.26	23.0	75.33
		Upper West	1,336	2.64	4.77	41.5	79.25
		Cu Stringer	109	3.42	1.62	24.6	57.48
		Lens 3	410	1.32	4.92	12.5	64.83
		Lens 4	53	1.43	5.58	10.4	72.71
		<b>Total</b>	<b>6,671</b>	<b>0.87</b>	<b>6.51</b>	<b>26.0</b>	<b>75.16</b>
	Inferred	Lens 2 Massive	3,700	0.35	6.63	26.9	70.0
		Upper West	2,200	1.67	4.63	21.1	66.2
		Cu Stringer	0				
		Lens 3	100	0.39	6.47	29.3	69.0
Lens 4		0					
	<b>Total</b>	<b>6,000</b>	<b>0.83</b>	<b>5.89</b>	<b>24.8</b>	<b>68.6</b>	

Using long term metal prices, the in-situ Cu and Zn percent values in each block of the block model were converted to US\$ amounts. These cash values for Cu and Zn were then converted to a NSR (Net Smelter Return) using ratios of in-situ values to NSR

values for each metal. The ratios were calculated using the parameters listed, with the Zn ratio equal to 0.45 and the copper ratio equalling 0.55. Silver and gold do not contribute any significant value to the NSR and were not included in the calculations.

Scott Wilson RPA classified the mineral resources at McIlvenna Bay in the block model into indicated and inferred categories based on drill hole spacing and apparent geological and grade continuity of the mineralized zones. Indicated mineral resources are located between L93+00E and L104+00E above the 2,750 m elevation. Drill hole spacing in this area varies from 40 m to 80 m, on 50 m sections. Inferred mineral resources exist below and to the west of the indicated resources along the plunge of the deposit. Drilling in this area is much more irregularly spaced both on and between sections.

There are no mineral reserves estimated at McIlvenna Bay at this time.

## **2 INTRODUCTION AND TERMS OF REFERENCE**

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) was retained by Bob Nylen, President and CEO of Foran Mining Corporation (Foran), to prepare an independent Technical Report on the McIlvenna Bay Project, near Hanson Lake in northeastern Saskatchewan. The purpose of this report is to provide an updated technical report and a resource estimate for the property. This Technical Report conforms to National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101). Scott Wilson RPA visited the property on September 26, 2006 and spent September 27-29 in the Foran facilities in Saskatoon looking at data and drill core from a number of holes.

Foran is involved in the acquisition, exploration, and development of mineral properties and is currently focused on the development of their gold and base metal properties located in northern Manitoba and Saskatchewan. This report deals with the McIlvenna Bay Project, a Zn-Cu volcanogenic massive sulphide deposit, which is at the advanced exploration stage. The major asset of the property is a large body of Cu-Zn mineralization for which there is a historic resource estimate that is not compliant with NI 43-101.

In 1990, Scott Wilson RPA, then known as Roscoe Postle Associates Inc. (RPA), did a resource estimate on this property for Billiton Metals Canada Inc.

### **SOURCES OF INFORMATION**

A site visit was carried out by R. Barry Cook, Associate Geologist with Scott Wilson RPA, on September 26, 2006. Mr. Cook was driven from Saskatoon to the property where the core storage yard and the camp building were inspected. The core is all stored outside, is well labeled and in remarkably good condition. Pictures were taken of the site. September 27-29 were spent in the Foran office and storage facility in Saskatoon, looking at data and drill core from a number of holes.

Discussions were held with personnel from Foran, namely, Brad Summach, Director, and Bob Nysten, President and CEO. The scope and nature of this report and future work on the property were discussed with Bob Nysten.

R. Barry Cook is responsible for all Items of this report except for Item 17. William E. Roscoe wrote Item 17 and collaborated on all the other Items.

The documentation reviewed, and other sources of information, are listed at the end of this report in Item 21 References.

**LIST OF ABBREVIATIONS**

Units of measurement used in this report conform to the SI (metric) system. All currency in this report is US dollars (US\$) unless otherwise noted.

μ	micron	kPa	kilopascal
°C	degree Celsius	kVA	kilovolt-amperes
°F	degree Fahrenheit	kW	kilowatt
μg	microgram	kWh	kilowatt-hour
A	ampere	L	litre
a	annum	L/s	litres per second
bbl	barrels	m	metre
Btu	British thermal units	M	mega (million)
C\$	Canadian dollars	m <sup>2</sup>	square metre
cal	calorie	m <sup>3</sup>	cubic metre
cfm	cubic metres per minute	min	minute
cm	centimeter	MASL	metres above sea level
cm <sup>2</sup>	square centimeter	mm	millimetre
d	day	mph	miles per hour
dia.	diameter	MVA	megavolt-amperes
dmt	dry metric tonne	MW	megawatt
dwt	dead-weight ton	MWh	megawatt-hour
ft	foot	m <sup>3</sup> /h	cubic metres per hour
ft/s	foot per second	opt, oz/st	ounce per short ton
ft <sup>2</sup>	square foot	oz	Troy ounce (31.1035g)
ft <sup>3</sup>	cubic foot	oz/dmt	ounce per dry metric tonne
g	gram	ppm	part per million
G	giga (billion)	psia	pound per square inch absolute
Gal	Imperial gallon	psig	pound per square inch gauge
g/L	gram per litre	RL	relative elevation
g/t	gram per tonne	s	second
gpm	Imperial gallons per minute	st	short ton
gr/ft <sup>3</sup>	grain per cubic foot	stpa	short ton per year
gr/m <sup>3</sup>	grain per cubic metre	stpd	short ton per day
hr	hour	t	metric tonne
ha	hectare	tpa	metric tonne per year
hp	horsepower	tpd	metric tonne per day
in	inch	US\$	United States dollar
in <sup>2</sup>	square inch	USg	United States gallon
J	joule	USgpm	US gallon per minute
k	kilo (thousand)	V	volt
kcal	kilocalorie	W	watt
kg	kilogram	wmt	wet metric tonne
km	kilometre	yd <sup>3</sup>	cubic yard
km/h	kilometres per hour	yr	year
km <sup>2</sup>	square kilometre		

### **3 RELIANCE ON OTHER EXPERTS**

This report has been prepared by Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) for Foran Mining Corporation (Foran). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to Scott Wilson RPA at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by Foran and other third party sources.

For the purpose of this report, Scott Wilson RPA has relied on ownership information provided by Foran. Scott Wilson RPA has not researched property title or mineral rights for the McIlvenna Bay project and expresses no legal opinion as to the ownership status of the property.

## **4 PROPERTY DESCRIPTION AND LOCATION**

The McIlvenna Bay deposit occurs within Foran's Hanson Lake property located approximately one kilometre south of Hanson Lake, Saskatchewan. The property is also approximately 375 km northeast of Saskatoon and 65 km west-southwest of Flin Flon, Manitoba. The McIlvenna Bay deposit is located within NTS sheet 63L10 and the plan projection of the deposit is centered on UTM coordinates 640,600 E and 6,056,800 N (NAD 83, Zone 13). The corresponding geographic coordinates are 102°50' W and 54°38" N. The McIlvenna Bay sulphide deposit is located well within the property boundaries.

### **LAND TENURE**

The Foran Hanson Lake property is comprised of 26 claims totaling 12,950 ha (Figure 4-2). A tabulation of the relevant claim information is listed in Table 4-1. The claims are listed in the name of Foran Mining Corporation and are kept in good standing at the discretion of Foran.

**TABLE 4-1 CLAIM STATUS - HANSON LAKE PROPERTY**  
**Foran Mining Corporation– McIlvenna Bay Project**

<b>Disposition Number Claims</b>	<b>Work Requirement</b>	<b>Excess Credits</b>	<b>Hectares</b>	<b>Anniversary Date</b>
S-100671	2,500.00	47,500.00	100.00	Oct 19, 2006
CBS 9314	14,875.00	246,384.89	595.00	Dec 01, 2006
CBS 9315	29,250.00	411,694.32	1,170.00	Dec 01, 2006
CBS 9317	16,750.00	207,163.10	670.00	Dec 01, 2006
CBS 9318	12,500.00	154,599.32	500.00	Dec 01, 2006
S-101727	132,900.00	1,470,609.06	5,316.00	Jan 08, 2007
CBS 3693	2,875.00	54,625.00	115.00	Feb 22, 2007
CBS 8460	6,250.00	118,750.00	250.00	Mar 14, 2007
S- 98827	400.00	7,160.99	16.00	Apr 07, 2007
S- 98828	400.00	7,160.99	16.00	Apr 07, 2007
CBS 4909	44,325.00	645,536.30	1,773.00	Apr 14, 2007
S-100669	15,200.00	273,600.00	608.00	Apr 24, 2007
S- 95733	400.00	6,744.99	16.00	May 01, 2007
S- 95734	400.00	6,744.99	16.00	May 01, 2007
S- 95735	400.00	6,744.99	16.00	May 01, 2007
S- 95736	400.00	6,744.99	16.00	May 01, 2007
S- 95737	400.00	6,744.99	16.00	May 01, 2007
S- 95740	400.00	4,829.99	16.00	May 01, 2007
S- 95741	400.00	4,829.99	16.00	May 01, 2007
S- 95742	400.00	4,829.99	16.00	May 01, 2007
S- 95743	400.00	4,829.99	16.00	May 01, 2007
S- 95744	400.00	4,829.99	16.00	May 01, 2007
S- 95745	400.00	4,829.99	16.00	May 01, 2007
S- 97903	400.00	7,200.00	16.00	Jun 12, 2007
CBS 3692	8,750.00	157,500.00	350.00	Jun 20, 2007
CBS 6130	31,975.00	607,525.00	1,279.00	Dec 01, 2007
<b>Claims: 26</b>	<b>323,750.00</b>	<b>4,479,713.86</b>	<b>12,950.00</b>	

On January 25, 2005, Foran announced that it had entered into a definitive agreement with Cameco and Billiton Metals Canada Inc. (BHP Billiton), collectively the Hanson Lake Joint Venture, which allowed Foran to acquire a 100% interest in the Hanson Lake property (including the McIlvenna Bay Cu-Zn deposit). Foran would acquire 100% of the Hanson Lake property by:

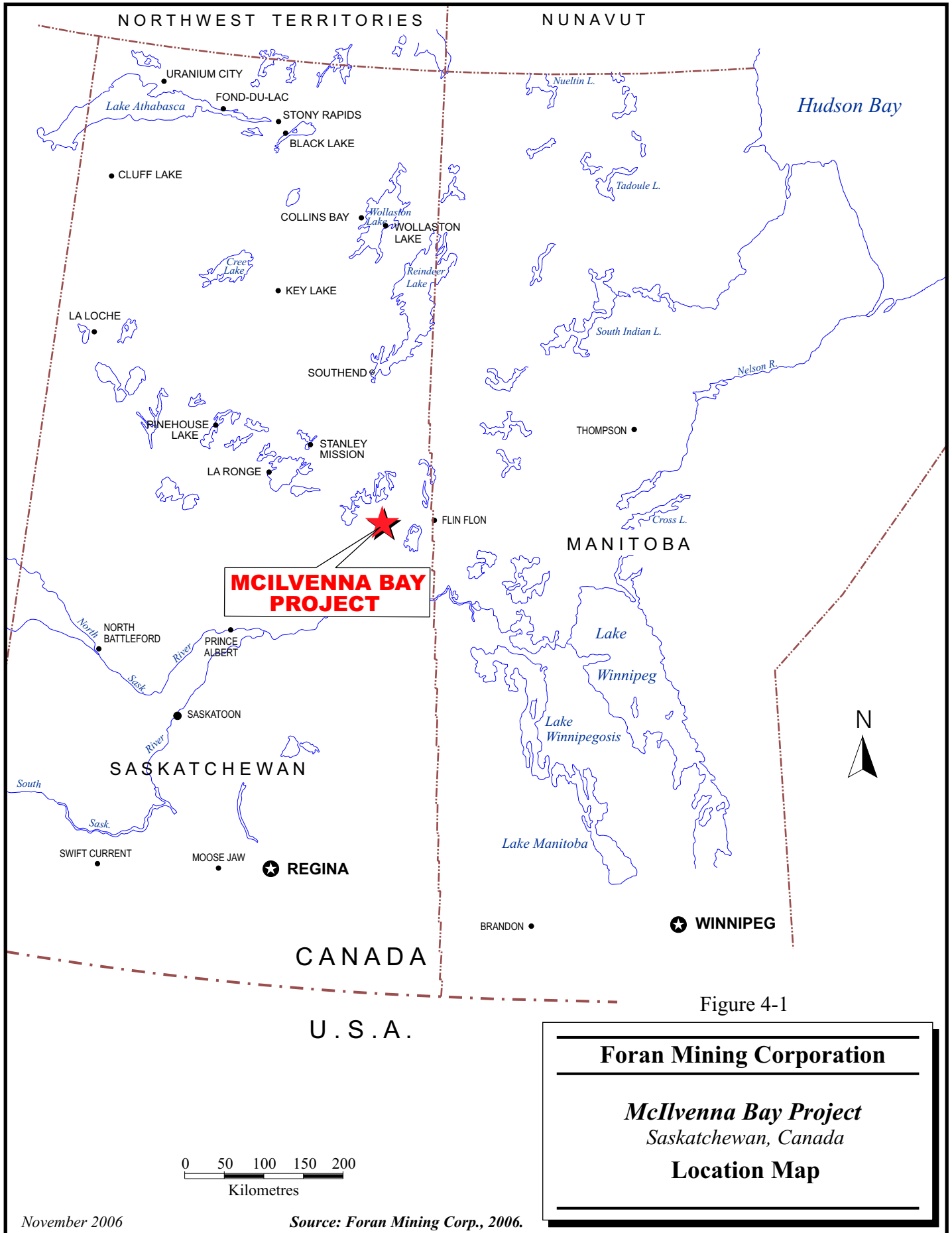
- i) paying C\$1,500,000 to the Hanson Lake Joint Venture;
- ii) paying a further C\$2,000,000 to the Hanson Lake Joint Venture before May 31, 2006; and

iii) providing the Hanson Lake Joint Venture with a 1% Net Smelter Return (NSR), with a buy-out provision in favour of Foran for the purchase of the whole NSR for C\$1,000,000 at any time.

Foran agreed to assign its interest in the Property Option Agreement between Foran, Cameco, and BHP Billiton to Copper Reef Mines Ltd., newly named Copper Reef Mining Corporation (Copper Reef), a private company organized under the laws of Manitoba. Copper Reef had funded the initial \$1.5 million payment and agreed to issue to Foran 5,500,000 common shares of Copper Reef. Subject to regulatory approval, Foran also agreed to subscribe for 2,500,000 units of Copper Reef at a price of \$0.20 per unit, which gave Foran a 48.41% equity interest in Copper Reef. Copper Reef is a private company organized under the laws of the Province of Manitoba.

In a subsequent event, Foran and Copper Reef were in dispute regarding the assignment agreement concerning the Property Option Agreement for the McIlvenna Bay deposit. This matter was resolved on May 24, 2006 and, under the settlement agreement, Foran made the final payment of \$2,000,000 for the McIlvenna Bay Project, prior to May 31, 2006. Foran's \$1,500,000 payment to the Hanson Lake Joint Venture on behalf of Copper Reef (Foran contributed \$500,000 to Copper Reef for that payment on January 25, 2005) stays in the project. Foran gave Copper Reef a 25% interest in the claims, retained 75% for itself, and entered into a joint venture agreement with Copper Reef in which Foran is the operator. Foran will retain approximately 25% of shares of Copper Reef, and is able to maintain that percentage through participation in future Copper Reef fund raising. The original 1% NSR in favour of the original Hanson Lake Joint Venture remains the responsibility of the current Foran-Copper Reef joint venture.

In order to carry out a diamond drilling program through the coming winter, Foran has applied for and received a *Temporary Work Camp Permit*, a *Surface Exploration Permit*, and an *Aquatic Habitat Protection Permit*.



**MCILVENNA BAY  
PROJECT**

Figure 4-1

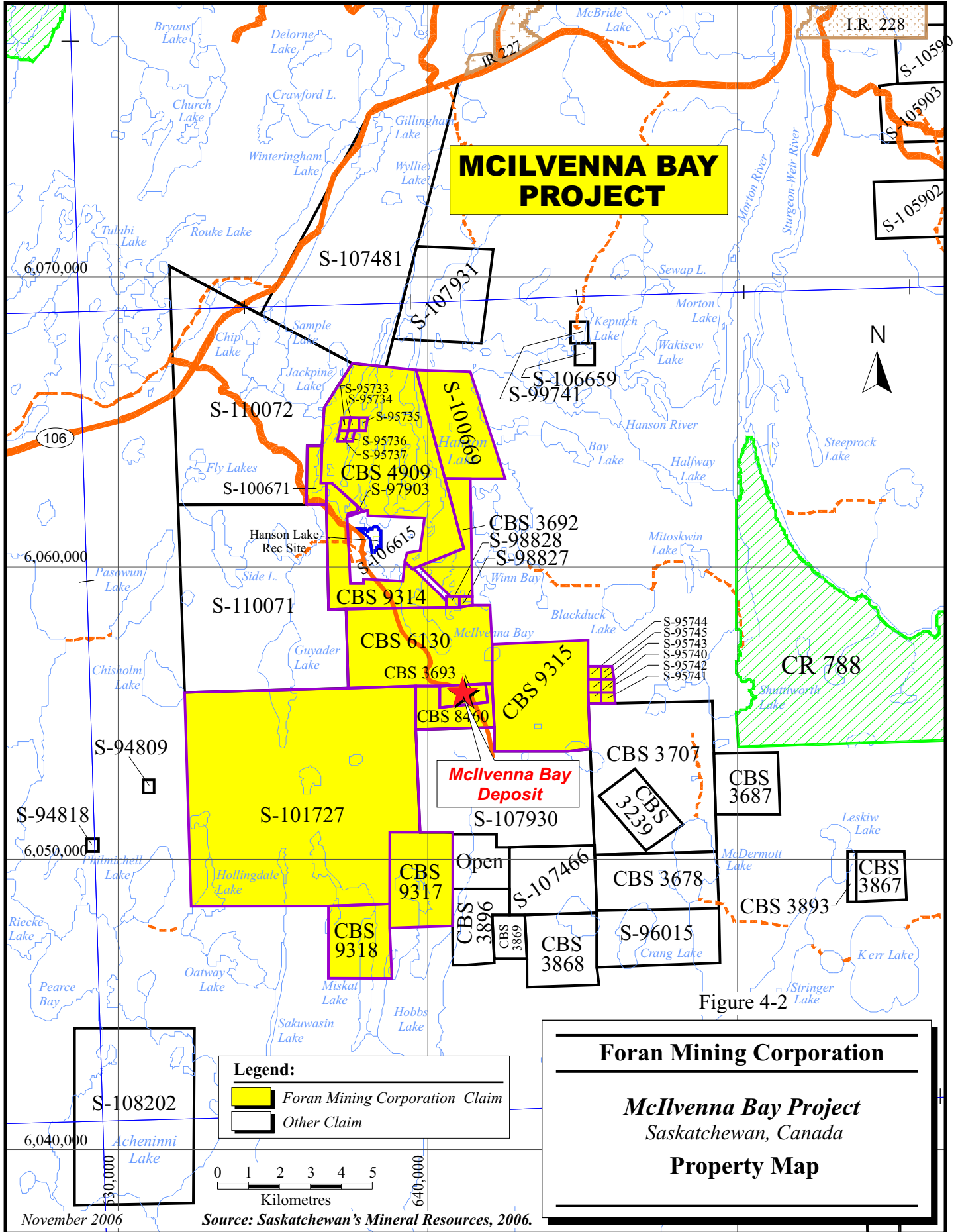
**Foran Mining Corporation**

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*McIlvenna Bay Project*  
Saskatchewan, Canada

**Location Map**

SCOTT WILSON RPA



## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **ACCESSIBILITY**

The McIlvenna Bay Project is located one kilometre south of Hanson Lake, Saskatchewan, and approximately 95 km by road west of Flin Flon, Manitoba (Figure 4-1). The deposit is located five kilometres southeast of the Western Nuclear (or Hanson Lake) Mine, a former producer located on the western shore of Hanson Lake. The McIlvenna site is accessible via an 18 km long all weather gravel road which connects to Saskatchewan Provincial Highway #106.

The mining town of Flin Flon, population 6,000, is the largest commercial/residential centre in the area. Flin Flon is a railhead on the Hudson Bay railway. Electrical power would be available from Saskatchewan Power Corporation at Creighton, Saskatchewan.

### **CLIMATE**

The climate in the Hanson Lake area is continental, with cold winters and moderate to warm summers. The area is classified as having a subhumid high boreal ecoclimate. The mean temperatures for January and July are -21°C and 18°C, respectively. Temperature ranges from -40°C in the winter to 30°C in the summer can be expected. Annual precipitation averages about 350 mm of rain and 1,450 mm of snow. There are on average 119 frost-free days per year. Lake ice thaws in April and returns in November.

### **LOCAL RESOURCES**

The Flin Flon-Creighton area has a mining history dating back to the 1920s. Road and rail access is good. General labour, experienced mining professionals and a variety of contractors are available in the area. Local communities are supportive of mining.

**INFRASTRUCTURE**

The only infrastructure on the property is an Atco-type office unit and a core storage yard.

Water for a mining/milling operation could be drawn from one of the local lakes. Tailings impoundment areas would have to be constructed locally where there is the advantage of the natural alkaline buffering capacity of bedrock dolomite.

**PHYSIOGRAPHY**

The property is located within the Boreal Shield Ecozone and is covered with shield-type boreal forest. Topography is flat lying with occasional sharp dolomite cliffs and ridges up to 20 m high. Soil thickness on the limestone ridges is minimal, with occasional rock exposure, and the vegetation is dominated by larger conifer and poplar trees. Below the cliffs are poorly drained muskeg swamps with scattered tamarack and black spruce. Throughout the surrounding area, there are numerous lakes and ponds of various sizes.

McIlvenna Bay of Hanson Lake is at an elevation of approximately 318 m. The base station on the survey grid over the deposit is at an elevation of 325.13 m.

## 6 HISTORY

In 1957, the Parrex Mining Syndicate tested an electromagnetic (EM) conductor delineated under a small bay on the western side of Hanson Lake and intersected impressive Zn-Pb massive sulphide mineralization which led to the development of the Hanson Lake (Western Nuclear) Mine. The mine operated between 1967 and 1969 and produced 162, 200 tons of ore averaging 9.99% Zn, 5.83% Pb, 0.51% Cu, and 4.0 oz/t Ag prior to being shut down. An undisclosed tonnage of unmined resource exists below the workings of the mine.

In 1976, the Saskatchewan Mineral Development Corporation (SMDC), the provincial government exploration vehicle that eventually became Cameco Corporation, acquired a large exploration lease centered on Hanson Lake. The permit area covered much of the exposed portion of the Hanson Lake Block (see Item 7 Geological Setting) and extended several kilometres south of the present Hanson Lake Property. In 1977, SMDC flew an Aerodat helicopter-borne EM survey across much of the permit area with lines oriented east-west.

From 1978 to 1988, Cameco tested selected Aerodat EM anomalies with ground follow-up exploration programs consisting of grid establishment, geological mapping (in the exposed portions of the belt), and ground geophysical surveys which included Horizontal Loop EM (HLEM), Time-Domain EM (TEM), and Surface Pulse EM surveys. Diamond drilling led to the discovery of three new showings, the Miskat Zone (Cu), the Grid B occurrence (Zn), and the Zinc Zone (Zn).

In 1985, the Granges-Troymin joint venture discovered the Balsam Zone, a VMS deposit located under the Paleozoic cover, approximately 8 km southeast of Hanson Lake. This prompted Cameco to re-evaluate their existing airborne EM data between the new discovery and Hanson Lake and resulted in a decision to conduct a Mark VI helicopter INPUT survey over the area south of Hanson Lake, with flight lines oriented

NE-SW. The survey delineated a 1,200 m long INPUT anomaly, striking east-southeast, one kilometre south of McIlvenna Bay.

In January, 1988, a ground magnetometer and HLEM survey defined the anomaly and six holes were subsequently drilled into what is now the McIlvenna Bay deposit. From 1989 to 1991, an additional 61 drill holes were completed. Fifty-six of the holes were drilled to test the deposit, of which only five failed to intersect economically significant mineralization. In 1991, Cameco suspended exploration activities at the Hanson Lake property after a corporate decision was made not to explore for base metals. The property remained idle until optioned in 1998 by Foran.

As of May 31, 2000, Foran drilled 59 additional holes totaling 33,350 m into the property, with 57 holes directly testing the deposit. The first 44 holes were drilled with the objective of upgrading the quality of the resource to a depth of 580 m from the inferred resource category to the indicated resource category. This was completed by August 31, 1999, and a subsequent mineral resource estimate was prepared by M'Ore Exploration Services. The last 15 holes were drilled below the plunge line and down plunge of the deposit and extended the deposit an additional 300 m vertically below the plunge of the previous resource base.

Mineral resource evaluations of the McIlvenna Bay deposit have been completed on seven separate occasions through the history of the project. Cameco completed three separate internal mineral resource estimates between 1989 and 1993 and another estimate in 1990, which was prepared by their Engineering and Project Division as part of a feasibility study. J.H. Reedman & Associates of Winnipeg completed an independent evaluation on behalf of Cameco in September 1993. Upon signing of the option to purchase agreement, M.D. Rusk of Geosight Consulting Canada completed an estimate on behalf of Foran in May 1998, prior to the commencement of Foran's drill program.

The most recent estimate, with the largest drill database, was completed by R. Lemaitre of M'Ore Exploration Services in June 14, 2000, after the completion of Foran's 44-hole infill drilling program. This block model resource estimate was based on

a total of 63,344 m of diamond drilling from 124 holes, of which 33,350 m of drilling was completed by Foran between December 1998 and May 2000. Cut-off grades of 1.5% copper or 4.0% zinc were used. The area between L93+00E and L103+50E and above the 580 m vertical depth was deemed to have been drilled at sufficient intersection spacings to be classified as an indicated resource. The remainder of the mineralization delineated to a maximum depth of 1,230 m vertical is classified as inferred resources. Estimated resources are listed in Table 6-1.

**TABLE 6-1 JUNE 14, 2000 BLOCK MODEL RESOURCE ESTIMATE**  
**Foran Mining Corporation – McIlvenna Bay Project**

Headings	Tonnage (metric tonnes)	Au (g/t)	Ag (g/t)	Cu (%)	Zn (%)	Pb (%)
<b>Lens 2, Upper West, Lens 3</b>						
Indicated	6,907,364	0.51	24.17	0.89	6.59	0.45
<b>Lens 2, Upper West, Lens 3</b>						
Inferred	7,602,473	0.40	23.28	0.93	5.61	0.35
<b>Copper Stringer Zone</b>						
Indicated	4,363,067	0.67	12.15	1.82	0.32	0.03
<b>Copper Stringer Zone</b>						
Inferred	7,463,827	0.60	12.75	1.80	0.65	0.05
<b>Lens 4</b>						
Inferred	328,092	0.74	10.44	1.77	0.94	0.04

This resource estimate was independently audited by Watts, Griffis, and McOuat who, overall, concurred with the block modelling results and concluded that the modelling procedures and categorization were completed according to industry standards (Kociumbas, 2000).

Scott Wilson RPA has also closely reviewed the previous Foran resource estimate and agrees that, except for the Copper Stringer zone, the block modelling methodology, results and classification are acceptable and comply with industry standards.

## 7 GEOLOGICAL SETTING

### REGIONAL GEOLOGY

The Hanson Lake property is located on the western edge of the Early Proterozoic Flin Flon Greenstone Belt (FFGB) which extends from north central Manitoba into northeastern Saskatchewan. The FFGB forms part of the Reindeer Zone, a subdivision of the Trans-Hudson Orogen, a continental-scale tectonic event which occurred approximately between 1.84Ga and 1.80 Ga (Syme et al., 1999) as a result of the collision between the Superior and Hearne Archean Cratons.

The FFGB is composed of structurally juxtaposed volcanic and sedimentary assemblages that were emplaced in a variety of tectonic environments. The major 1.92-1.88 Ga components include arially significant juvenile arc and juvenile ocean-floor rocks, and minor ocean plateau/ocean island basalt. The juvenile arc assemblage comprises tholeiitic, calc-alkaline, and lesser shoshonitic and boninitic rocks similar in major and trace element geochemistry to modern intra-oceanic arcs. Ocean-floor basalt sequences are exclusively tholeiitic, and are geochemically similar to modern N- and E-type MORBs erupted in back-arc basins. Evolved arc assemblages and Archean crustal slices are present within the FFGB as minor components.

Collectively, these tectonostratigraphic assemblages were juxtaposed in an accretionary complex at ca. 1.88-1.87 Ga, presumably as a result of arc-arc collisions. The collage was basement to 1.87-1.83 Ga, post-accretion arc magmatism, expressed as voluminous calc-alkaline plutons and rarely preserved calc-alkaline to alkaline volcanic rocks. Unroofing of the accretionary collage and deposition of continental alluvial-fluvial sedimentary rocks (Missi Group) and marine turbidites (Burntwood Group) occurred ca. 1.85-1.84 Ga, coeval with the waning stages of post-accretion arc magmatism. The sedimentary suites were imbricated with volcanic assemblages in the eastern FFGB during 1.85-1.82 Ga juxtaposition of the supracrustal rocks along pre-peak metamorphic structures.

As currently viewed, the FFGB contains eight geographically separate juvenile island arc volcanic assemblages (blocks), each being 20 km to 50 km across. From east to west, they are known as the Snow Lake, Four Mile Island, Sheridan, Flin Flon, Birch Lake, West Amisk, Hanson Lake, and Northern Lights Assemblages (Zwanzig et al, 1997 and Maxeiner et al., 1999). These assemblages are separated by major structural features and/or areas of differing tectonostratigraphic origin. It is unclear whether the eight juvenile arc sequences represent different island arcs, or segments of a larger continuous arc (Syme et al., 1999). Within the belt, each tectonostratigraphic block has been broken into several sub-blocks, usually bounded by local to regional fault systems. Correlation of stratigraphy between sub-blocks is difficult to impossible to determine.

The exposed portion of the FFGB is approximately 250 km in an EW direction by 75 km NS. Although it has an apparent easterly trend, this is an artefact of the belt's tectonic contact with gneissic metasedimentary, metavolcanic, and plutonic rocks to the north (Kisseynew Domain) and the east-trending trace of Phanerozoic platformal cover rocks to the south. In reality, the FFGB extends hundreds of kilometres to the south-southwest beneath a thin cover of essentially flat-lying, Phanerozoic sedimentary rocks.

By Early Ordovician time the area of northern Saskatchewan and Manitoba had been effectively peneplaned and a regolith was developed on exposed rocks. Inundation by the Ordovician ocean initiated the deposition of the Phanerozoic cover sequence which, in the McIlvenna Bay area, is now represented by the basal Winnipeg Formation sandstone overlain by the Red River Formation dolomite.

In the general Flin Flon area, the predominant direction for the Late Wisconsinan ice-flow indicators is south-southwest indicating that the ice was flowing from a Keewatin dispersal centre. The resulting tills are thin and generally reflect local bedrock lithologies (McMartin et al, 1999).

SCOTT WILSON RPA

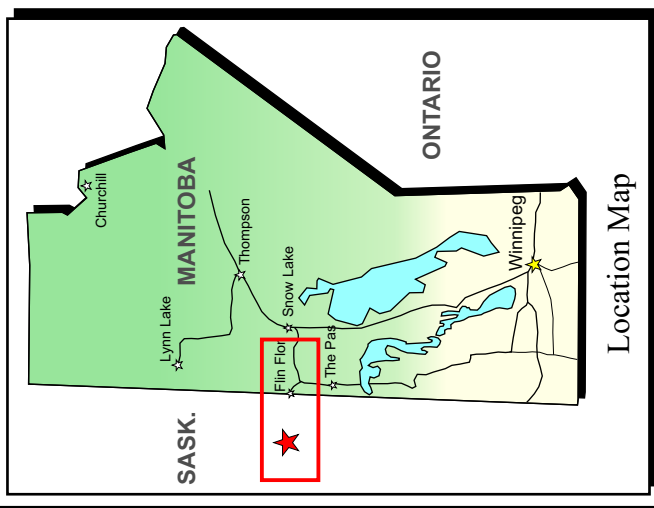
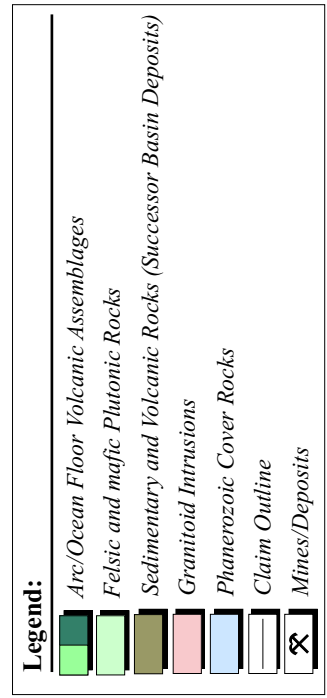
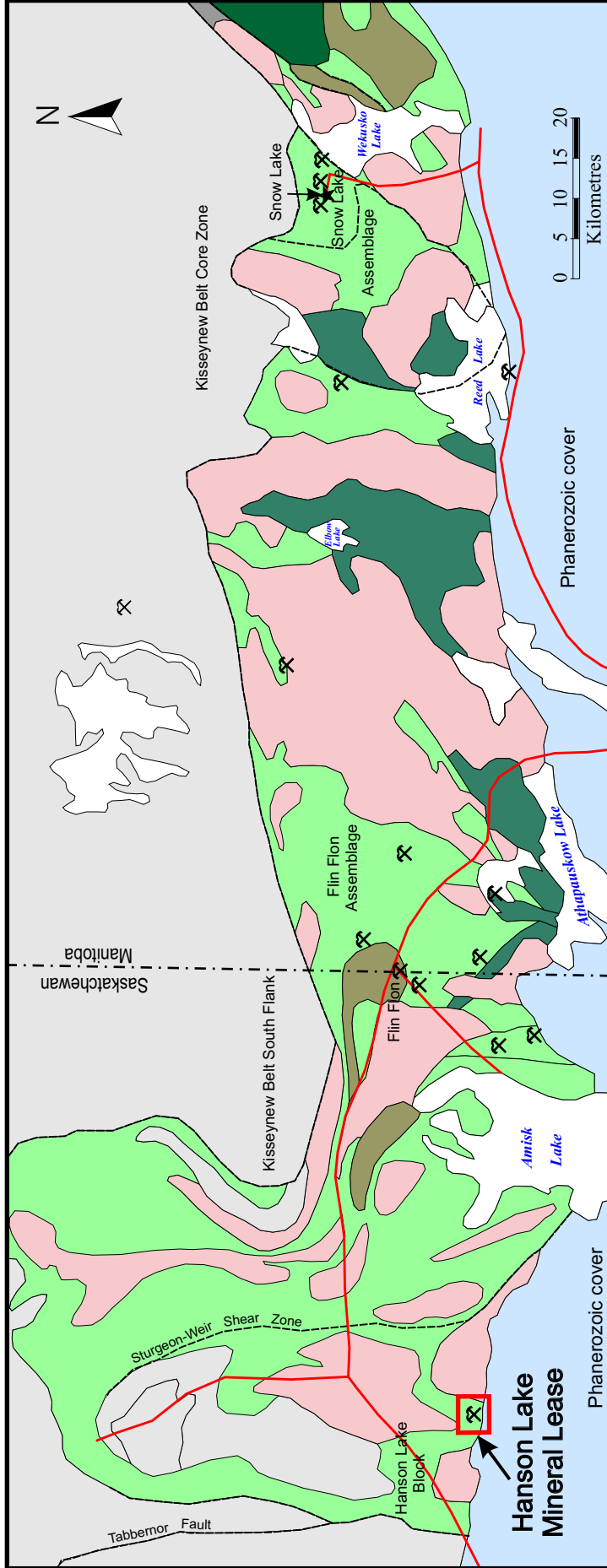


Figure 7-1

**Foran Mining Corporation**  
**McIlvenna Bay Project**  
Saskatchewan, Canada  
**Regional Geology**

Source: Foran Mining Corp., 2006.

## LOCAL GEOLOGY

The Hanson Lake Block, the host terrain of the McIlvenna Bay deposit, is bound to the east by the Sturgeon-Weir Shear Zone and to the west by the Tabbernor Fault Zone. The block extends an unknown distance to the south beneath a nearly flat lying cover of Ordovician sandstones of the Winnipeg Formation, and dolomites of the Red River Formation. To the north, the block is bound by the Kisseynew Domain, a gneissic metasedimentary belt and the Attitti Complex. The east end of the block hosts the Hanson Lake Pluton, a large compositionally variable granodiorite to pyroxenite intrusion.

In the Hanson Lake area, north of the Paleozoic margin, the exposed Proterozoic rocks of the Hanson Lake Block are dominated by juvenile island arc, felsic to intermediate metavolcanic rocks, with subordinate amounts of mafic volcanics, minor intermediate volcanics, and greywackes. Oxide facies iron formations are not commonly exposed but their presence has been confirmed by diamond drilling. Long continuous magnetic trends suggest that the distribution of iron formations is very wide spread in the area south of Hanson Lake. The sequence has been intruded by various felsic intrusions, some of which are believed to be subvolcanic intrusions. Abundant diorite and gabbro plugs and dykes cut the sequence, as well as minor ultramafic intrusions (Koziol et al., 1991). The supracrustal rocks generally dip moderately to steeply east to northeast. South of Hanson Lake, the Proterozoic sequence is poorly understood because of the unconformably overlying Paleozoic sedimentary rocks. The McIlvenna Bay deposit projects to subsurface under the sedimentary cover (Lemaitre, 2000).

At least two distinct folding events, both having northerly trending fold axes, have influenced the stratigraphy in the Hanson Lake Area. Peak regional metamorphism in the areas west and north of Hanson Lake reached upper amphibolite facies as observed by the partial melting of the granodiorite-tonalite assemblage in the Jackpine and Tulabi Lake areas. At the McIlvenna Bay deposit, the Proterozoic sequence exhibits a greenschist metamorphic facies as the deposit alteration assemblages are dominated by sericite and

chlorite. The greenschist facies is probably a retrograde event after a previous amphibolite grade since relict cordierite, anthophyllite, garnet and andalusite are commonly observed in the VMS alteration package (Lemaitre, 2000). U-Pb ages of supracrustal rocks in the block constrain the metamorphic event between 1808 and 1804 Ma (Maxeiner et al., 1999). U-Pb age dating of a quartz-feldspar porphyry (a possible subvolcanic intrusion) which intruded the supracrustal sequence yielded a date of  $1888 \pm 12$  Ma.

## **PROPERTY GEOLOGY**

Lacking any outcrop in the area of the deposit, the property geology has been interpreted from the drill core record with help from geophysical surveys. The discussion below is extracted from Lemaitre (2000).

The stratigraphy of the deposit area, divided into six formations (Figure 7-2), has been defined over a two kilometre strike length by a total of 124 drill holes. The lowest formation intersected by drilling both structurally and stratigraphically is the **McIlvenna Bay Formation** (Figure 7-3), the host of the McIlvenna Bay deposit. The McIlvenna Bay Formation is overlain to the north by the **Cap Tuffite Formation**. The McIlvenna Bay Formation and the Cap Tuffite Formation may be genetically related but have been separated as they are temporally distinct, as demonstrated by the positioning of the McIlvenna Bay massive sulphide deposit between these two units, an obvious exhalative horizon (and hence a period of clastic and volcano-sedimentary quiescence). Overlying the Cap Tuffite Formation is the **Koziol Iron Formation**, a long and distinctive marker formation traceable for several kilometres along strike by mapping and geophysics. Topping the Koziol Iron Formation is the **Rusk Formation**, a thick package of mafic volcanics. The Rusk Formation in turn is overlain by the thin **HW-A Formation**, an exhalative massive sulphide horizon which grades laterally into iron formation. Capping the HW-A Formation is a thick unsorted bimodal package of mafic and felsic volcanics and mafic intrusions and minor iron formations tentatively called the **Upper Sequence** which may be thickened due to folding and faulting. The stratigraphic package has been

cut by several different intrusions, the largest of which is the **Davies Gabbro**, a sill-like plug found within the Cap Tuffite Formation. The basement geology is unconformably overlain by the relatively flat lying to shallowly south-dipping Ordovician dolomites and sandstones of the Red River and Winnipeg Formations which have an average total thickness between 20 m and 30 m.

The **McIlvenna Bay Formation**, the host formation of the sulphide deposit, is known only to the extent it has been drilled below the footwall of the deposit. The formation is at least 200 m thick (true thickness) and is comprised of massive and semi-massive sulphides, variably altered felsic volcanics, volcanoclastics and/or volcanic-derived sediments of rhyolitic composition.

Overlying the mineralized horizons of the McIlvenna Bay Formation is the **Cap Tuffite Formation**, a sequence of intercalated felsic volcanic and cherty metasediments which have been intruded by sills and dykes of the Davies Gabbro (described below). The unit ranges from 35 m to 55 m thick, is finely banded to finely laminated, and ranges from white to cream to grey-green in colour. Sections of the formation range from very finely laminated, bleached chert to 1 cm to 10 cm thick banded, fine-grained, aphanitic rhyolitic tuff. Discrete contacts between the units are nebulous. Instead, wide transitions are observed from one end member to the other. It is believed that the formation represents a sequence of redeposited, water-lain, distal volcanoclastics and chert. An east to west zonation is observed in the Cap Tuffite from cherty-dominated in the east to rhyolitic-dominated in the west.

Stratigraphically overlying the Cap Tuffite is the **Koziol Iron Formation**, a long, continuous exhalative horizon traceable in drill core and by geophysics over several kilometres and, as such, an excellent stratigraphic marker horizon. The unit is a true oxide-facies iron formation that ranges from 0.1 m to 25 m true thickness and is composed of 1 cm to 5 cm thick bands of fine-grained chert, interbedded with 1 mm to 50 mm massive magnetite bands and 1 cm to 1 m thick massive grunerite±garnet±magnetite

±chlorite bands. Occasional pyrite and/or pyrrhotite are observed in selected bands. Near the base of the iron formation is a one metre thick bed of graphitic chert.

Overlying the Koziol Formation is the **Rusk Formation**, a thick package of massive and calcite-altered mafic volcanic rocks that are approximately 100 m thick. The mafic rocks are likely massive flows, although the thickness of individual flow units cannot be determined from drill core. No distinct flow tops or pillow structures have been observed. However, patchy 1 mm to 2 mm diameter white to pink rounded feldspar amygdules have been noted locally.

Topping the Rusk Formation is another exhalative horizon, the **HW-A Formation** which ranges from 1 cm to 5 m thick and shows a transition from west to east from oxide-facies iron formation to massive sphalerite. From the centre of the McIlvenna deposit and to the west, the HW-A Formation is an oxide-facies iron formation identical to that of the Koziol Formation. Overlying the iron formation is a 1 m to 10 m thick massive mafic volcanic unit. From the centre of the deposit and to the east, the unit is comprised of either a thin pyrite band or massive sphalerite-pyrite from 10 cm to 75 cm thick. Overlying this portion of the unit is a thin 5 m to 15 m thick massive, grey, felsic volcanic unit.

Overlying the HW-A Formation is a 400 m thick **Upper Sequence**, a bimodal package of volcanic units that have been difficult to correlate from hole to hole. Approximately 45% of the unit is composed of aphanitic, grey, felsic volcanic, and 50% fine-grained mafic volcanic rocks. Some of the mafic units may be gabbroic intrusions. Approximately 5% of the unit is composed of greywackes and at least two additional oxide-facies iron formation horizons. Individual members of the formation are difficult to trace between drill holes as the existing drill holes that are collared far enough to the north to intersect the Upper Sequence are sparse and generally widely spaced. The Upper Sequence is not yet defined to the extent that it could be broken down into formational units. The down plunge drilling program has discovered that the Upper Sequence may be

the core of a regional synclinal structure and that the bimodal sequence may be structurally repeated by both folding and faulting (Lemaitre, 2000).

The Davies Gabbro, a plug up to 100 m thick east of the deposit extends westward toward the centre of the sulphide body where it narrows into a series of thin dykes. The gabbro appears to be a series of sills that have intruded along the bedding planes of the Cap Tuffite Formation. The gabbro plug plunges along an axis parallel to the sulphide body and appears to exert some sort of control over the limits of mineralization along the bottom plunge line of the deposit. The unit ranges from fine-grained to very coarse grained; the grain size appears to be directly related to the unit thickness. Chilled margins have been observed on the thicker dykes. It appears that the gabbro intruded along the bedding planes of the wet, cherty banded sediments of the Cap Tuffite.

## **STRUCTURE**

Stratigraphy in the deposit area strikes between 275° and 295° and dips to the north at 65°-70°, although in selected areas it dips vertically. The deposit has the same orientation as the stratigraphy and also plunges at approximately 45° to the northwest. Rocks in the host stratigraphy are massive to strongly foliated, the intensity of which depends on the competency of each individual unit and the degree of alteration.

Two phases of folding of the host stratigraphy have been observed in the drill core and are believed to correspond to the regional F2 and F3 folding events. The first phase (regional F2) was responsible for the development of the dominant observed structural fabric, a foliation oriented at approximately 280°/65° (parallel to stratigraphy). The foliation is well developed in the least competent stratigraphic units, particularly the footwall altered rocks. Isoclinal folding of the iron formation, observed in several drill holes, has a plunge that is estimated to be approximately 45° to the west or west-northwest, which is roughly parallel to the plunge of the deposit. A strong crenulation (regional F3 event) of the foliation is developed in portions of the footwall alteration zone. The plunge of the crenulation is much flatter, usually less than 25°, and trends either northwest or northeast. This trend and plunge of the crenulation appears to be

parallel to the fold axis of gentle to open folds observed in banded felsic volcano-sedimentary units both above and below the deposit and may be responsible for the broad warping of the stratigraphy observed in the magnetic maps between the Hanson Lake and the south end of McIlvenna Bay (Lemaitre, 2000).

Evidence of faulting has been documented in drill core. However, it is difficult to determine the orientation, scale, or continuity of most faults between drill holes with the present level of information. The deep drilling program outlined a large fault structure that strikes east-northeast and dips steeply to the north. This fault appears to truncate the northern limb of the regional F<sub>2</sub> synclinal structure discussed above. The fault is well to the north of the deposit and likely would not impact on the mineralized horizon above the 1,800 m vertical depth (Lemaitre, 2000).

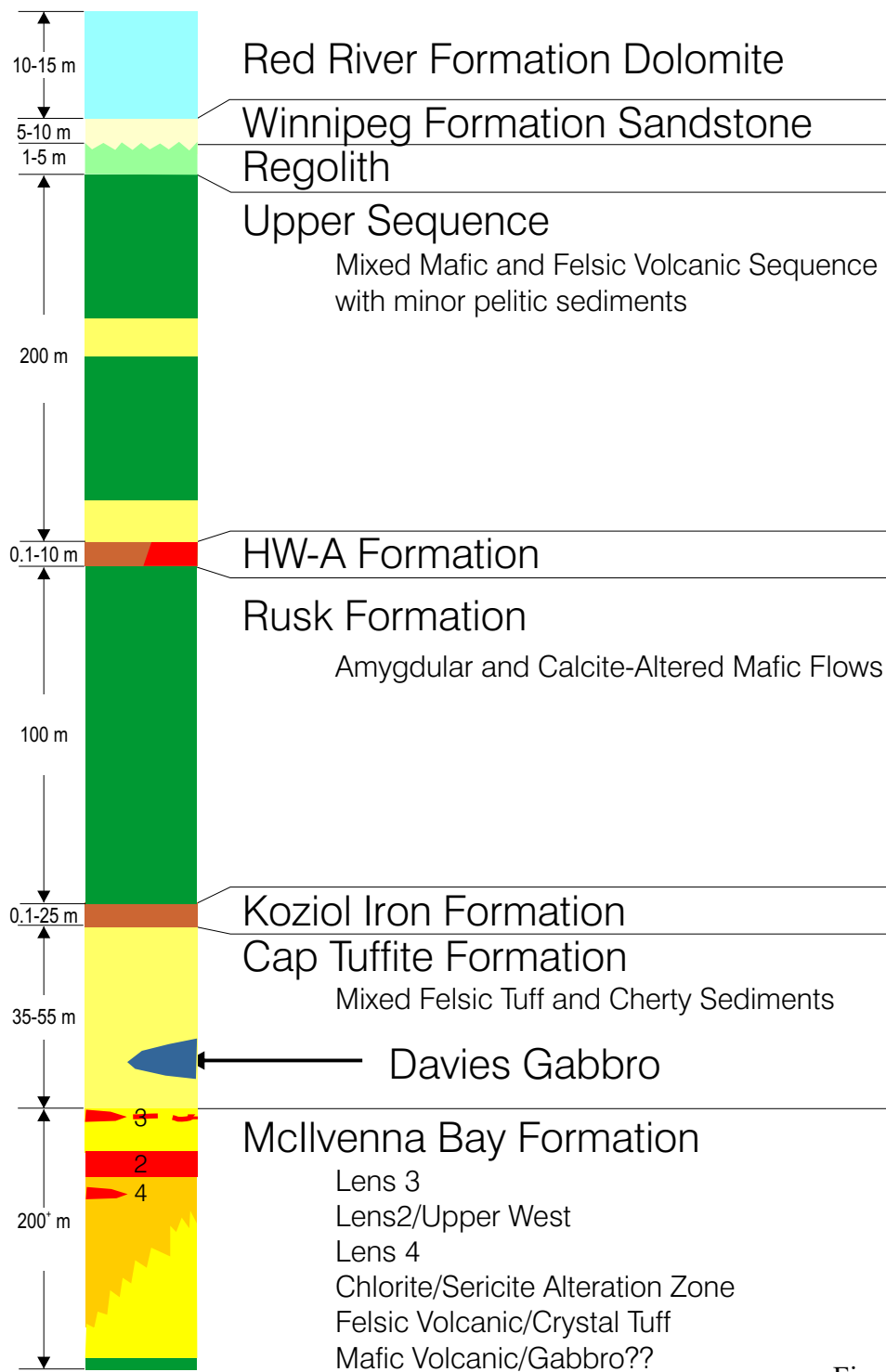


Figure 7-2

**Foran Mining Corporation**

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*McIlvenna Bay Project*  
*Saskatchewan, Canada*

**Stratigraphic Column**  
**McIlvenna Bay Deposit Area**

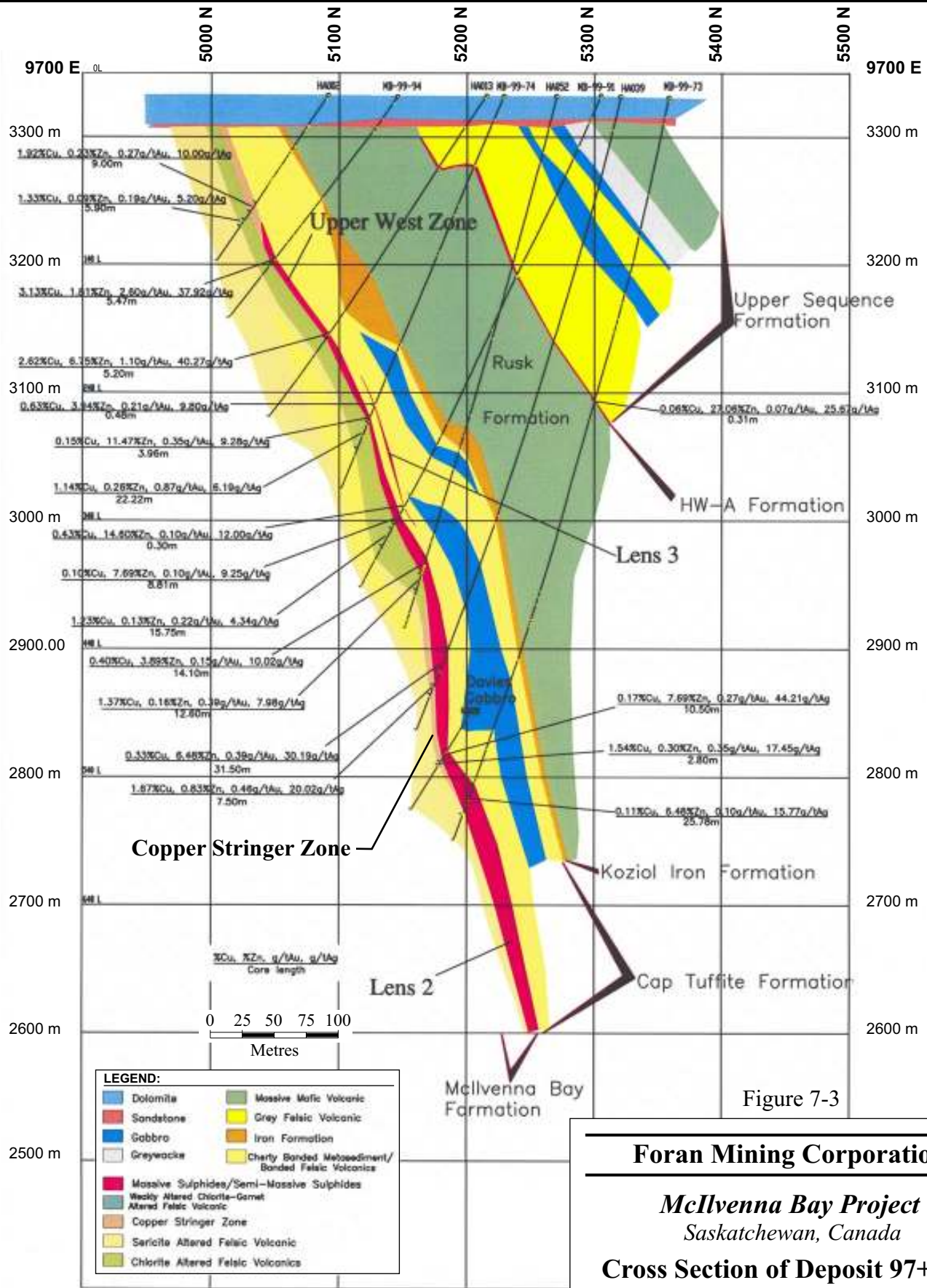


Figure 7-3

**Foran Mining Corporation**

*McIlvenna Bay Project  
Saskatchewan, Canada*

**Cross Section of Deposit 97+00 E  
(Looking West)**

## 8 DEPOSIT TYPES

The target deposit on the McIlvenna Bay property is a volcanogenic massive sulphide (VMS) deposit, a synvolcanic accumulation of sulphide minerals that occur in geological environments characterized by submarine volcanic rocks. In Canada, these deposits are commonly found in Precambrian through Mesozoic volcano-sedimentary greenstone belts in an extensional arc environment such as a rift or caldera. The associated volcanic rocks are commonly relatively primitive (tholeiitic to transitional), bimodal and submarine in origin (Galley et al., 2005). The spatial relationship of VMS deposits to synvolcanic faults, rhyolite domes or paleotopographic depressions, caldera rims or subvolcanic intrusions suggests that the deposits were closely related to particular and coincident hydrologic, topographic, and geothermal features on the ocean floor (Lydon, 1990).

VMS deposits are exhalative deposits, formed through the focused discharge of hot, metal-rich hydrothermal fluids. These deposits commonly occur in clusters which form a VMS camp. In many cases, it can be demonstrated that the sub-seafloor fluid convection system was apparently driven by large, 15 km to 25 km long, mafic to composite, high level subvolcanic intrusions. The distribution of synvolcanic faults relative to the underlying intrusion determines the size and areal morphology of the camp alteration system and ultimately the size and distribution of the VMS deposit cluster. These fault systems, which act as conduits for volcanic feeder systems and hydrothermal fluids, may remain active through several cycles of volcanic and hydrothermal activity. This can result in several periods of VMS formation at different stratigraphic levels (Galley et al., 2005).

The idealized, undeformed and unmetamorphosed Archean VMS deposit, as exemplified by the Matagami deposits, typically consists of a concordant lens of massive sulphides, composed of 60% or more sulphide minerals (pyrite-pyrrhotite-sphalerite-chalcopyrite with associated magnetite), that is stratigraphically underlain by a discordant stockwork or stringer zone of vein-type sulphide mineralization (pyrite-pyrrhotite-

chalcopyrite and magnetite) contained in a pipe of hydrothermally altered rock (Sangster and Scott, 1976). The upper contact of the massive sulphide lens with hanging wall rocks is usually extremely sharp, while the lower contact is gradational into the stringer zone. A single deposit or mine may consist of several individual massive sulphide lenses and their underlying stockwork zones. It is thought that the stockwork zone represents the near-surface channel ways of a submarine hydrothermal system and the massive sulphide lens represents the accumulation of sulphides precipitated from the hydrothermal solutions, on the sea floor, above and around the discharge vent (Lydon, 1990). VMS deposits are commonly divided into Cu-Zn, Zn-Cu, and Zn-Pb-Cu groups according to their contained ratios of these three metals (Galley et al., 2005).

Most Canadian VMS deposits are characterized by discordant stockwork vein systems or pipes that, unless transposed by structure, commonly underlie the massive sulphide lenses, but may also be present in the immediate hanging wall strata. These pipes, comprised of inner chloritized cores surrounded by an outer zone of sericitization, occur at the centre of more extensive, discordant alteration zones. The alteration zones and pipe systems often host stringer chalcopyrite-pyrite/pyrrhotite±Au and may extend vertically below a deposit for several hundred metres or may continue above the deposit for tens to hundreds of metres as a discordant alteration zone (Ansil and Noranda deposits). In some cases, the proximal alteration zone and attendant stockwork/pipe vein mineralization connects a series of stacked massive sulphide lenses (Amulet, Noranda, LaRonde, and Bousquet deposits), representing synchronous and/or sequential phases of ore formation during successive breaks in volcanic activity (Galley et al., 2005).

The McIlvenna Bay deposit consists of structurally modified, strataform, volcanogenic, polymetallic massive sulphide mineralization and associated stringer zone mineralization. The sulphides contain copper and zinc, with low lead and silver and gold values.

The McIlvenna Bay sulphide deposit (Figure 7-3) has undergone strong deformation and upper greenschist to amphibolite facies metamorphism. The massive sulphide lenses

are now attenuated down the plunge to the northwest. Typical aspect ratios of length down-plunge to width exceed 10:1. The extent of remobilization of sulphides within the deposit is uncertain.

## 9 MINERALIZATION

The McIlvenna Bay deposit is comprised of five different zones and includes three distinct styles of mineralization. The five different zones identified are the Lens 2, the Upper West, Lens 3, Lens 4 and the Copper Stringer Zones. The three different styles of mineralization are massive sulphides, semi-massive sulphides, and copper stringers. Each style is mineralogically and texturally distinct.

The **Lens 2 Massive Sulphide** (Figure 7-3) is by far the largest and most significant massive sulphide zone in the McIlvenna Bay deposit. It has a strike length of 400 m to 550 m, ranges in true thickness from 0.40 m to 16.75 m and has an average thickness of 5.55 m. The zone plunges approximately 45° to the north and strikes at 295° with an average dip of 68°. The zone has been defined from the top of the Proterozoic sequence at a vertical depth of 35 m down to a depth of 1,230 m and remains open down plunge. The zone appears to be continuous both along strike and down dip. The assemblage pyrite-sphalerite suggests that this zone could have been deposited off the flank of a hydrothermal vent.

The **Upper West Zone** is a relatively copper-gold-enriched semi-massive sulphide unit found as a long strip that lies parallel to and along the top of the plunge line of the Lens 2 Massive Sulphide. It is believed to be on the same stratigraphic horizon as, and laterally continuous with, the Lens 2 Massive Sulphide, with a 25 m to 50 m wide transition zone between the two. The Upper West Zone has a strike length of 150 m to 300 m and has been delineated between the vertical depths of 35 m and 1,230 m. It varies from 2.80 m to 10.60 m true thickness and averages 4.81 m true thickness. The zone remains open down plunge below the 1,230 m level. This zone also appears to be one continuous sheet and is relatively more copper and gold-rich compared to the Lens 2 Massive Sulphide.

The **Lens 3 Massive Sulphide** is a discontinuous and generally very thin massive and semi-massive sulphide horizon that is located 10 m to 30 m above the Lens 2 and Upper

West horizon. The zone has a strike length of 100 m to 350 m and plunges parallel to the underlying mineralized zones. The true thickness of the zone ranges from 0.18 m to 6.65 m and averages 2.39 m. The zone is dominated by massive sulphides although semi-massive sulphides and typical copper stringer mineralization have been observed in certain holes. The zone is occasionally underlain by weak copper stringer mineralization. The majority of the zone is comprised of sub-economic grade massive sulphides over widths of less than 3.0 m. Pods within the zone obtain threshold economic grades that exceed the minimum mining width, the largest of which has a strike length of 250 m and a dip extent of 50 m.

The Foran infill drilling program discovered the **Lens 4** mineralized zone located approximately 40 m to 50 m below the Upper West Zone of the Lens 2 horizon, roughly between coordinates 9300E and 9500E. The zone was intersected in four holes, HA-26, MB-99-107, MB-99-108, and MB-99-118. In hole 107, a large semi-massive interval was intersected with mineralogy, texture, and grades similar to that of the Upper West Zone. The zone was underlain by a thick copper stringer zone. Copper stringer style mineralization was also intersected in HA-26, MB-99-108, and MB-99-118. Extension of existing holes below and east of hole 107 failed to intersect the Lens 4 Mineralized Zone. The extent of the mineralization associated with this zone is not fully understood but it remains open down plunge to the northwest.

The **Copper Stringer Zone** underlies and is in contact with the Upper West Zone and the western half of the Lens 2 Massive Sulphide. The zone is wedge-shaped with the blunt edge running parallel to the plunge of, and underlying the Upper West Zone. The wedge terminates near the central axis of the Lens 2 Massive Sulphide. The zone is thickest underlying the Upper West Zone, where it is considered to be the proximal hydrothermal feeder zone for the hydrothermal system which deposited the massive sulphides. Stringer mineralization in this area is hosted in chlorite-altered rock. To the east, immediately underlying the Lens 2 Massive Sulphides, the stringer mineralization is hosted in fine fracture networks in silicified and sericitized rock. The zone has been delineated between the vertical depths of 35 m and 1,230 m. The best mineralized

portion (>1.5% Cu) lies within a much larger envelope of sub-economic grade copper stringer mineralization. The portion exceeding minimum grade requirements is fairly continuous, with minor gaps or holes. This portion has a strike length of 300 m to 600 m and ranges from 0.57 m to 48.30 m true thickness, averaging 8.08 m. The stringer zone remains open to the west and down plunge below the 930 m level.

Massive sulphides are typical of Lens 2 and Lens 3 horizons. This style of mineralization is composed of 70% to 80% medium-sized and subrounded pyrite grains resembling 'buckshot'. Sphalerite is hosted as fine-grained and sometimes feathery minerals located in the interstices of the pyrite grains ranging from 5% to 25% of the total unit. The sphalerite is generally dark to medium-brown in colour. Faint banding of the massive sulphides is occasionally apparent. Up to 10% fine-grained grey quartz, and occasionally fine calcite, are also observed in the interstices. Subangular to subrounded inclusions or fragments of massive black chlorite ranging from 2 mm to 50 mm in diameter comprise 10% of the unit. Patchy but common rounded chert fragments ranging from 1 cm to 3 cm in diameter can constitute up to 20% of the unit locally. Such chert, when present, is often surrounded by 1 cm to 3 cm thick zones of enhanced, pale brown sphalerite.

The semi-massive sulphides are typical of the Upper West Zone and Lens 4, and selected parts of Lens 3. The semi-massive sulphides range from 20% to 60% sulphides which are found as veinlets, veins, and pods within strongly chlorite-altered rock. The sulphide portion tends to be either sphalerite or chalcopyrite-dominant, with less than 20% fine-grained pyrite. Sphalerite-dominant portions are generally comprised of reddish or pale brown to blonde sphalerite indicative of zinc-rich and iron-poor sphalerite. Individual veins or pods have been documented to contain up to 56% zinc. Less common are the chalcopyrite-dominant intervals which are composed of 80% chalcopyrite over narrow widths. Veining and replacement textures are common in the semi-massive sulphides.

The copper stringer mineralization is generally confined to the area below the Upper West and Lens 2, but has been observed as part of the Lens 4 Zone and sometimes is found underlying the Lens 3 Zone. The nature of the stringer zone mineralization varies according to the host altered rock. Chlorite alteration-hosted copper stringer mineralization is comprised of chalcopyrite and pyrrhotite, with occasional pyrite, and is found in veinlets and pods cutting the chlorite alteration. Sericite-quartz altered copper stringer zones tend to be comprised exclusively of chalcopyrite which lines fine, hairline fractures within the strongly silicified host, and as 5 cm to 10 cm long semi-massive pods containing angular to rounded host rock fragments. These pods and fractures appear to be late brittle features and suggest that the chalcopyrite was remobilized into fractured rock possibly during deformational events. This latter style of copper stringer mineralization typically lies as a subordinate unit beneath the Lens 2 Massive Sulphides.

The sulphide mineralogy and the size of the alteration package suggest the presence of a proximal vent environment along the entire top plunge line of the McIlvenna Bay deposit which is represented by the Upper West Zone. The location of the Lens 3 and Lens 4 zones respectively overlying and underlying the Upper West Zone is not a coincidence and may represent additional smaller hydrothermal pulses at different stratigraphic timelines.

An interesting feature of the deposit is the fact that the Upper West Zone remains open down plunge and, likely, both the zone and the plumbing system underlying it will continue at depth. This possibility should be tested by additional drilling.

## **10 EXPLORATION**

As described in Item 6 History, the last exploration on the property was done in 2000. A program that could be carried out by Foran as the next phase of work is described in Item 20 Recommendations

## 11 DRILLING

Cameco and Foran employed similar drilling procedures on the McIlvenna Bay Project. The top of the holes from surface down through the Paleozoic cover sequence was drilled with HQ rods. The drill string was reduced to NQ for drilling below the Proterozoic regolith. This same procedure was employed by Cameco during their drilling program. All but a handful of the Cameco holes, and all of the Foran holes still have their HQ rod string in the hole allowing one to locate the holes on surface and to re-enter them if necessary.

Down hole surveying of Cameco holes HA-60 through HA-65 was completed using acid tests only. Holes HA-01 through HA-17, and HA-66 and HA-67 were completed using Tropari and acid test measurements. All other Cameco holes were surveyed using the Techdel International Light-Log system.

Down hole surveying on all of the Foran holes was done using a combination of Tropari measurements and acid tests. Due to the presence of magnetic rocks in the stratigraphy, especially the iron formations, Tropari azimuths were sometimes inaccurate and were occasionally ignored in order to get reasonably accurate hole locations. Tropari measurements were taken at approximately 75 m intervals, and acid tests were taken every 50 m. The use of Tropari measurements was considered acceptable for the shorter holes as the influence of the one or two iron formation horizons intersected in such holes could be eliminated by careful analysis of the tropari data, logging of the core, and magnetic susceptibility measurements of the core from area around the survey location. However, the Tropari instrument was totally inadequate as a surveying tool for the deep, step out holes 67, 111, 120A, 122, 122W1, 124, and 125. Stratigraphy in this area appears to be isoclinally folded with the nose area in the vicinity of the collars of 122, 124, and 125.

Foran concluded that the locations of the intersections of holes 67, 111, 120A, 122, 122W1, 124, and 125 have an estimated error of  $\pm 50$  m in the east-west direction and  $\pm 25$  m in the vertical direction (Lemaitre, 2000). Thus the location of each hole will have a

direct impact on a resource estimate. A resurvey of many, or all, of the holes with a non-magnetic down hole instrument may be warranted in the future.

## 12 SAMPLING METHOD AND APPROACH

For all Foran drill holes, assay samples were generally taken on 1.0 m intervals and all sample boundaries respected the geological contacts. Samples smaller than 1.0 m long were taken when necessary to respect such conditions. Samples as large as 1.5 m long were taken in weakly mineralized copper stringer zone estimated to contain less than 1% copper.

All samples were cut by diamond saw and one half of the core was submitted for assay analysis. Metal tags with the sample numbers inscribed were stapled into the box marking the sample boundaries. Boundary limits were also marked on the core box itself to limit any sampling errors. The unsampled half of the core was kept intact in the core box and stored.

Samples for whole rock geochemistry and ICAP analysis were taken from every major unit in every Foran drill hole and relogged Cameco hole. A short (<30 cm long) sample of the entire core was removed from the box and sent for analysis. A wooden marker with the sample number written on it was placed in the box where the sample was taken to mark the sample location.

Assays taken during the Cameco program were also taken on 1.0 m intervals. However, sample boundaries did not respect the Cameco-logged geological contacts in several holes and thus individual samples often crossed the hanging wall-mineralized zone contacts or the massive/semi-massive sulphide-stringer zone contacts. This discrepancy could not be resolved during the relogging program because all but two of the massive and semi-massive sulphide intersections of these holes were removed by Cameco from the racks and used as feed for two metallurgical tests.

Statistics on percentage core recovery are not available for either the Foran or Cameco drilling campaigns. From Scott Wilson RPA's examination of core stored in the field and in the Saskatoon storage facility we would estimate that there was perhaps 95%

to 98% core recovery, at least in the mineralized sections. Hence the sawed/sampled material sent for assay should be an accurate reflection of one half of the core and should be free of any bias because of the competent nature of the core produced.

The true thickness of any mineralized intercept can only be estimated on those sections where the density of drilling is sufficient to determine the boundaries of the mineralized zone(s).

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

This section describes, to the best of our knowledge, the historical procedures employed initially by Cameco and later by Foran.

### **CAMECO (1988-1991)**

Little information is available for security measures employed, quality control or quality assurance procedures and who actually prepared the samples. The samples of sawn core were initially sent to TSL Assayers in Saskatoon (TSL). Each sample was crushed to a minimum of 60% passing -10 mesh and was split, with the rejects being stored at TSL's lab. A split portion, approximately 250 grams, was pulverized to 90% passing -150 mesh. The split halves were assayed by standard Atomic Absorption techniques for zinc, copper, silver, and lead and by fire assay/atomic absorption finish for gold. When the initial assay samples exceeded 1% zinc, 1% copper, or 1 g/t gold, the sample was re-analyzed. Samples from HA-01 to HA-06 were assayed at TSL. The remainder of the samples from HA-07 through HA-67 were assayed at Eco-Tech Laboratories in Creighton, Saskatchewan (Eco-Tech). A total of 152 check assays were performed at TSL, Bondar-Clegg (Ottawa), and Terramin Laboratories (Calgary). Cameco was pleased with the Eco-Tech results and believed that TSL returned somewhat lower values for zinc and, to a lesser extent, copper during check assays (MRDI, 1998).

### **FORAN MINING CORPORATION (1998-2000)**

The bulk of the assaying from the Foran drilling programs was done at TSL. Once sawn, individual samples were packaged in individual plastic sample bags, which were sealed with packing tape, boxed, and taken directly by a Foran representative from the field to Creighton, Saskatchewan. The boxes were shipped via bus to Saskatoon where a representative from TSL collected the boxes and brought them to the lab.

At TSL, each sample was crushed to a minimum of 60% passing –10 mesh and then split, with the rejects being stored at TSL. A split portion, approximately 250 grams, was pulverized to 90% passing –150 mesh. All samples were analyzed for copper, zinc, lead, gold, and silver, while samples from holes MB-99-78 through 125 were also analyzed for iron and sulphur. All samples were also analyzed by a 31-element ICAP scan that was completed at the TSL laboratory in Vancouver, British Columbia. Copper, lead, zinc and silver analyses were done by Atomic Absorption Spectrophotometry, while the gold was determined by standard Fire Assay procedures.

One in ten samples assayed by TSL was shipped to the Saskatchewan Research Council's Geoanalytical Services Laboratory in Saskatoon (SRC) for check assaying. In the case of a discrepancy between the original and check assay results, the sample was rechecked by XRAL Laboratories in Toronto to determine the most accurate result. In their signed assay reports, TSL included the analytical results of all internal repeat samples (duplicates) and TSL in-house or Certified Reference Material standard samples inserted into the assaying sequence. Foran's experience was that for most elements, TSL assayed very slightly lower (<10% difference) than the corresponding assay done at the SRC. Generally, zinc, lead and silver assays were less than 10% lower at TSL than at SRC, copper assays were less than 5% lower, and gold results were comparable (Lemaitre, 2000).

During the time periods noted, it is not known what the certifications were for the various laboratories mentioned. The analytical procedures employed by TSL are listed in Appendix 1.

The QA/QC procedures used by Foran were not as rigorous as one might expect in a current program. Nonetheless, Scott Wilson RPA believes that the work was done in accordance with the best practices of the time and that the results should be reliable.

## **SPECIFIC GRAVITY DETERMINATIONS**

From hole MB-99-87 to MB-99-125, Foran had specific gravity determinations of each sample done by TSL using the weight in water – weight in air method on the intact core sample. Holes MB-99-78 to MB-99-86 did not have any specific gravity determinations but did have iron and sulphur analytical data. Holes prior to MB-99-78 do not have any specific gravity determinations or any sulphur analytical data.

## 14 DATA VERIFICATION

On September 28, 2006, R. Barry Cook selected and marked out ten samples of sawn core for duplicate analysis. The specified intervals were quarter split by a technician under supervision by Mr. Cook, who then bagged, tagged, and sealed the samples in plastic bags. The bags of samples were packed in a box and shipped by courier to the Scott Wilson RPA offices in Toronto. From there they were forwarded by courier to the SGS laboratory in Don Mills, Ontario. Table 14-1 indicates the relevant sample information and assay results.

Considering the nature of sulphide material sampled, the duplicate analyses correspond reasonably well to the original Foran analyses. The only glaring discrepancy is highlighted in the table indicating the Scott Wilson RPA value of 2.49% for the Foran sample number 0805 compared to the original value of 0.39%. Scott Wilson RPA has no explanation for this difference except for possible inhomogeneity in the core sample.

Scott Wilson RPA also compared analyses as quoted on original assay certificates to the numbers listed in drill logs for specific assay intervals. The assays for Cu, Zn, Pb, Au and Ag for 162 samples from six different drill holes were checked without locating any serious errors in transcription. The few discrepancies noted were in fact only differences in the second decimal place.

**TABLE 14-1 ASSAYS OF SAMPLES COLLECTED FROM DRILL HOLES**  
Foran Mining Corporation – McIlvenna Bay Project

Drill Hole	From (m)	To (m)	Scott Wilson RPA Sampling							Original Foran Results				
			Sample Number	Sample Description	Cu (%)	Zn (%)	Au ppb	Ag g/t	Sample Number	Cu %	Zn %	Ag g/t	Au g/t	
MB-99-101	266.69	267.62	71251	Quarter split core	2.49	8.61	896	16.8	0805	0.39	7.70	16	0.41	
MB-99-101	286.00	287.00	71252	Quarter split core	0.6	0.03	132	2.9	0824	0.61	0.03	2.8	0.17	
MB-99-98	245.68	247.47	71253	Quarter split core	5.6	1.03	542	81.4	0741	5.19	0.89	73	0.55	
MB-99-98	250.84	251.46	71254	Quarter split core	5.33	0.61	549	34.7	0747	4.55	0.65	29	0.72	
MB-99-97	114.20	115.38	71255	Quarter split core	0.3	0.11	69	2.6	0715	0.27	0.05	2	0.03	
MB-99-97	151.28	152.00	71256	Quarter split core	1.84	5.08	1,020	82.6	0723	1.45	5.12	74	0.74	
MB-99-86	167.00	168.13	71257	Quarter split core	0.2	10.2	83	4.3	0066	0.2	11	4	0.14	
MB-99-86	150.53	151.92	71258	Quarter split core	0.26	4.82	105	4	0059	0.23	4.09	3.2	0.1	
MB-99-78	753.00	754.00	71259	Quarter split core	0.26	2.01	81	3.4	0227	0.27	1.74	3.0	0.07	
MB-99-78	746.31	747.06	71260	Quarter split core	2.43	0.42	1,580	17.8	0220	2.66	0.82	19	1.38	

## **15 ADJACENT PROPERTIES**

There are no properties to report on in this section.

## **16 MINERAL PROCESSING AND METALLURGICAL TESTING**

Cameco conducted a feasibility study on the McIlvenna Bay sulphide deposit in 1990. As part of the process, they sent 339 kg of sulphide mineralization to Cominco Engineering Services Ltd. (CESL) at Trail, British Columbia, for metallurgical testing. The mineralization was the remaining half of the split core from their sulphide intersections. As such, the material tested should have been representative of the McIlvenna Bay deposit as it was known at the time. The sulphides were described as being from the A, B, and C Zones, which, in the current Foran terminology, Scott Wilson RPA interpret as being the Lens 2, Upper West, and Copper Stringer zones, respectively.

A summary of the CESL metallurgical test work is quoted below. A more complete description is found in Appendix 2.

### **SUMMARY**

The Hanson Lake 'A' zone sample contains approximately 12% sphalerite in 65% pyrite with a mesh of liberation of about 50 microns (270 mesh). There is also present up to 1% chalcopyrite, which must be separated in order to produce a readily saleable zinc concentrate.

A zinc concentrate grading approximately 54% Zn at a recovery of around 90% can be produced from the 'A' zone by careful, slow flotation. Three stages of zinc cleaning are required. The zinc concentrate is favourably low in magnesia, silica and minor element impurities, with the exception of mercury at 200 ppm.

One flotation test was run using Hanson Lake water. There was no significant difference between this test and a similar test run using normal Trail water.

The copper impurity cleans up readily to produce a saleable grade copper concentrate carrying significant gold and silver values.

The tailings may be treated by single stage cycloning to produce a sand product potentially suitable for mine backfilling. The weight recovery to the sand product is approximately 75%.

The tailings product remained stable over a four week testing period. It maintains a pH of 7.3 to 7.4 with favourably low copper, zinc and iron in solution.

Preliminary testing of material from the high-copper 'C' section of the deposit shows that a high grade copper concentrate may be produced at good recovery.

Preliminary testing of material from the mixed copper-zinc 'B' zone of the deposit shows significant cross-contamination between copper and zinc. It is concluded that a significant metallurgical testing program will be required to develop an optimum metallurgy for this material.

# 17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

## SUMMARY

Scott Wilson RPA has prepared a mineral resource estimate of the McIlvenna Bay deposit using digital drill hole data provided by Foran. Scott Wilson RPA interpreted a set of cross sections, and also used long sections and plans to construct 3D wireframes of the mineralized zones. Variogram parameters were determined separately for each mineralized zone. A block model was interpolated using the kriging and inverse distance methods and a mineral resource for copper, zinc, and silver was estimated (Table 17-1).

Using long term metal prices, the in-situ Cu and Zn percent values in each block of the block model were converted to US\$ amounts. These cash values for Cu and Zn were then converted to a NSR (Net Smelter Return) using ratios of in-situ values to NSR values for each metal. The ratios were calculated using the parameters listed, with the Zn ratio equal to 0.45 and the copper ratio equalling 0.55. Silver and gold do not contribute any significant value to the NSR and were not included in the calculations.

Scott Wilson RPA classified the mineral resources at McIlvenna Bay in the block model into indicated and inferred categories based on drill hole spacing and apparent geological and grade continuity of the mineralized zones. Indicated mineral resources are located between L93+00E and L104+00E above the 2,750 m elevation. Drill hole spacing in this area varies from 40 m to 80 m, on 50 m sections. Inferred mineral resources exist below and to the west of the indicated resources along the plunge of the deposit. Drilling in this area is much more irregularly spaced both on and between sections.

There are no mineral reserves estimated at McIlvenna Bay at this time.

**TABLE 17-1 MCILVENNA BAY MINERAL RESOURCES**  
Foran Mining Corporation - Mclivenna Bay Project

NSR Cut-off	Category	Zone	Tonnes (000)	Cu %	Zn %	Ag (g/t)	NSR (\$)
\$50	Indicated	Lens 2 Massive	4,763	0.27	7.26	23.0	75.33
		Upper West	1,336	2.64	4.77	41.5	79.25
		Cu Stringer	109	3.42	1.62	24.6	57.48
		Lens 3	410	1.32	4.92	12.5	64.83
		Lens 4	53	1.43	5.58	10.4	72.71
		<b>Total</b>	<b>6,671</b>	<b>0.87</b>	<b>6.51</b>	<b>26.0</b>	<b>75.16</b>
	Inferred	Lens 2 Massive	3,700	0.35	6.63	26.9	70.0
		Upper West	2,200	1.67	4.63	21.1	66.2
		Cu Stringer	0				
		Lens 3	100	0.39	6.47	29.3	69.0
		Lens 4	0				
		<b>Total</b>	<b>6,000</b>	<b>0.83</b>	<b>5.89</b>	<b>24.8</b>	<b>68.6</b>

## RESOURCE DATABASE AND VALIDATION

Scott Wilson RPA received header, survey, assay, lithology and composite data from Foran in an older Gemcom (Gemcom GDE v4.x) database. The database comprised 126 collar records and 1,658 survey records with 62,698 m of drilling for an average drill hole length of 498 m. The latest drill hole included in the database is MB 00-124. The Gemcom database comprises 3,261 assay records totalling of 3,569 m of assays for an average interval length of 1.09 m. Drilling by Foran accounts for 1,580 assay records, while Cameco drilling accounts for 1,681 assay records.

The Scott Wilson RPA Gemcom database comprises 4,105 records of geology entries with descriptions for distance from, distance to, and rock type.

A variety of validation queries and routines were run in Gemcom to help identify data entry errors. The original Gemcom database was found to be in good shape and no significant problems were noted. Scott Wilson RPA also verified a number of data records with original assay certificates and drill logs. No significant discrepancies were identified.

## **CUT-OFF GRADE**

Scott Wilson RPA reviewed the cut-off grades and interpretation done by M'Ore Exploration Services for Foran in 1999 and 2000. Cut-off grades of 1.5% Cu and/or 4.0% Zn were used to define the main mineralized zones. Scott Wilson RPA found this methodology produced good results in terms of outlining potentially economic material, especially in the massive and semi-massive zones. However, due to the more erratic nature of the copper mineralization in the copper stringer zone, the use of an arbitrary cut-off grade for interpretation was not appropriate. The geological boundaries and entire intersection in each drill hole in this zone were used instead. As well, a minimum width of three metres was imposed on all zones where the previous interpretation included the occasional narrow intersection for the sake of continuity.

## **GEOLOGICAL INTERPRETATION AND 3D SOLIDS**

Diamond drill hole traces with Cu, Zn, Au, and Ag grades and lithology, were plotted on grid north-south cross sections, and east-west longitudinal drill sections. The cross sections were spaced 50 m apart. The geological and grade continuity was checked using the plotted longitudinal drill sections plus plan views on screen. The down hole distances for each drill hole intersection of the mineralized envelopes were used to provide a guideline to create 3D rings, tie lines, and ultimately 3D solids for each of the mineralized envelopes.

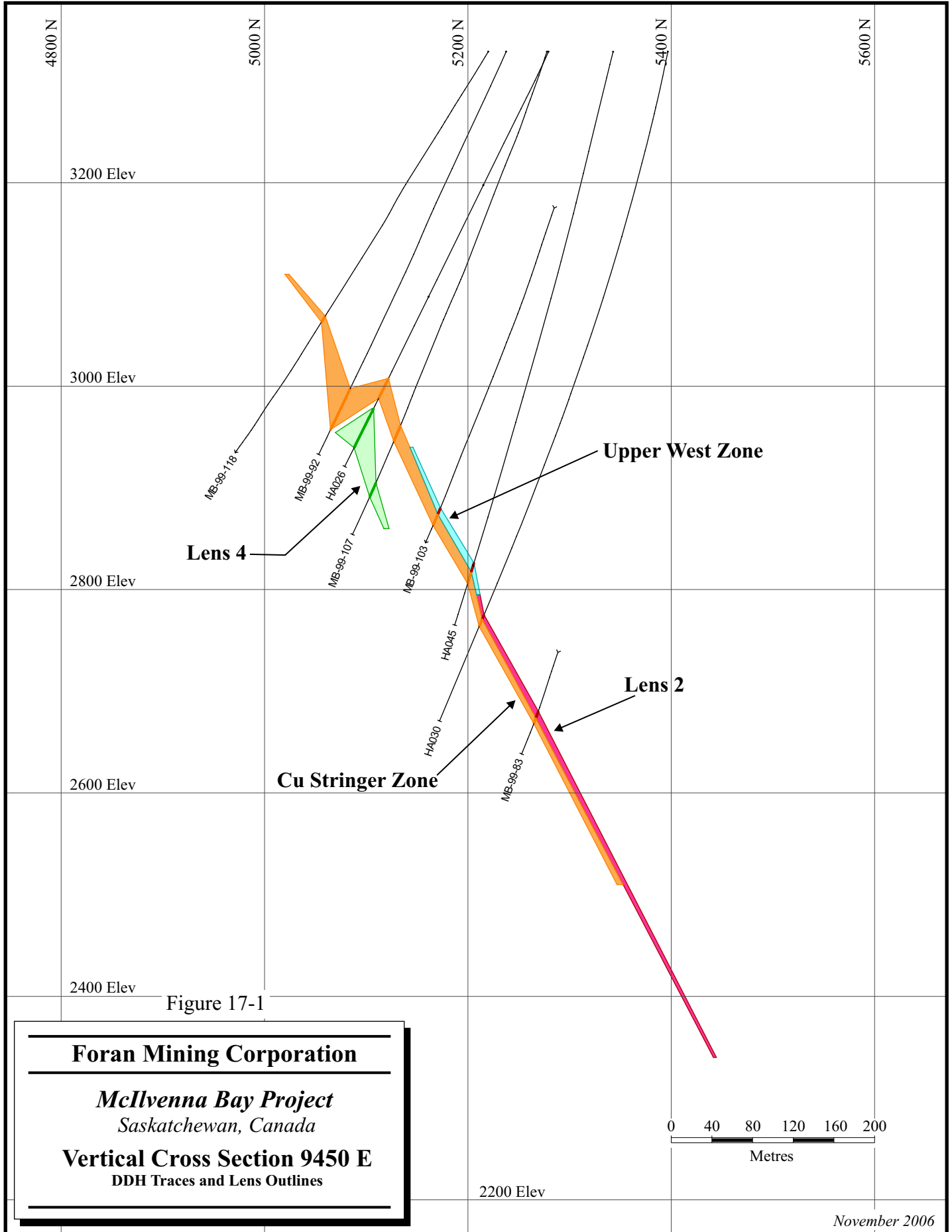
Figures 17-1 to 17-3 provide examples of the outlines of interpreted wireframes in cross section and long section. Figure 17-4 outlines the areas which have been classified as Indicated and Inferred.

## **ASSAY STATISTICS**

Scott Wilson RPA tagged those assays to be included in the resource estimation. A total of 3,261 assays were identified within the area to be estimated. Basic statistics for uncut Cu and Zn on a zone by zone basis are given in Table 17-2.

**TABLE 17-2 SUMMARY OF RESOURCE ASSAY RECORDS BY ZONE**  
**Foran Mining Corporation - McIlvenna Bay Project**

	Cu (%)	Zn (%)
<b>Lens 2 Massive Sulphides (n=471)</b>		
Mean	0.24	7.16
Standard Deviation	0.31	4.38
Coef. of Variation	1.31	0.61
Maximum	1.90	56.0
<b>Upper West (n=168)</b>		
Mean	2.40	4.44
Standard Deviation	2.25	5.41
Coef. of Variation	0.94	1.22
Maximum	19.6	25.2
<b>Cu Stringer Zone (n=734)</b>		
Mean	1.56	0.14
Standard Deviation	1.28	0.62
Coef. of Variation	0.82	1.95
Maximum	10.25	9.65



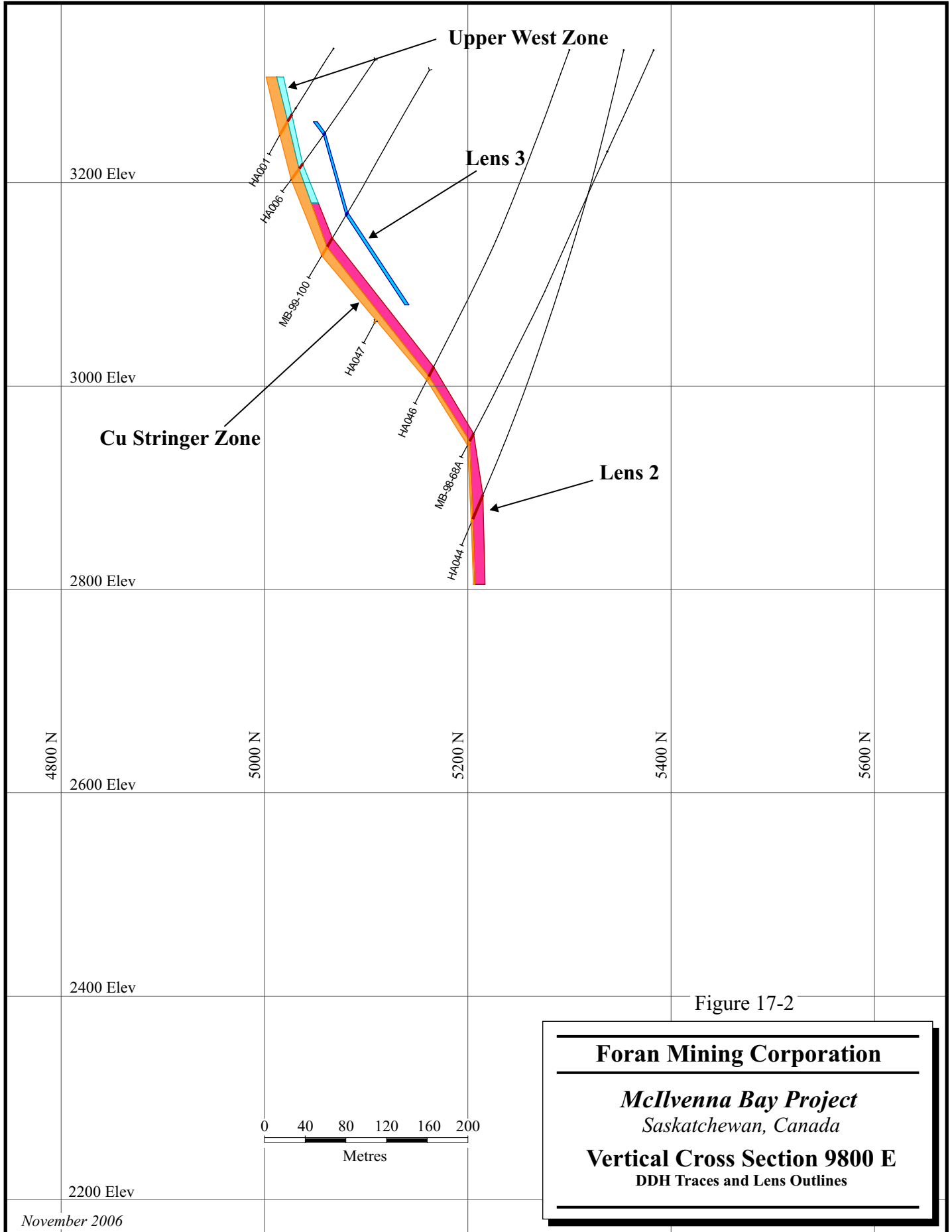
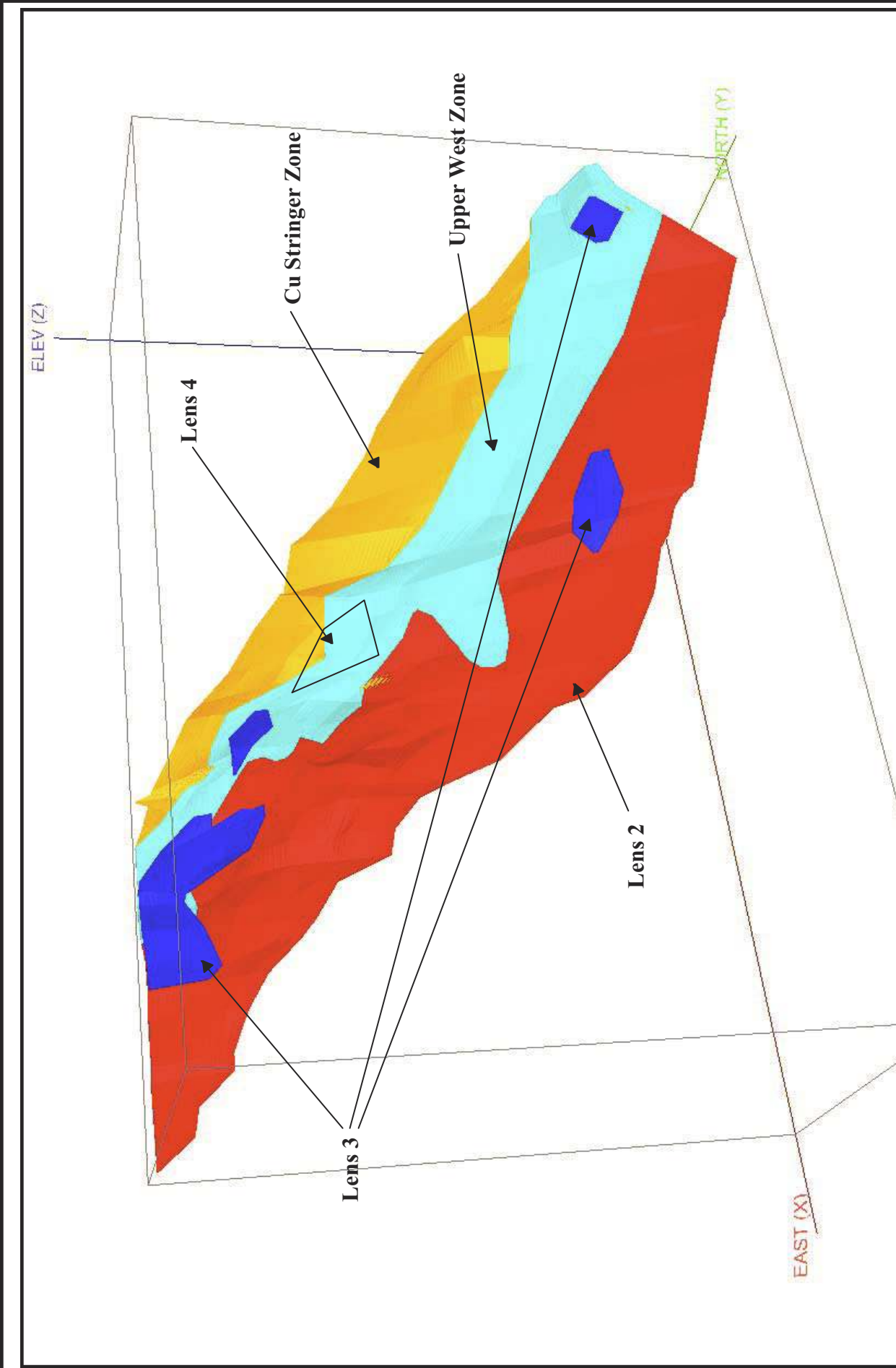


Figure 17-2

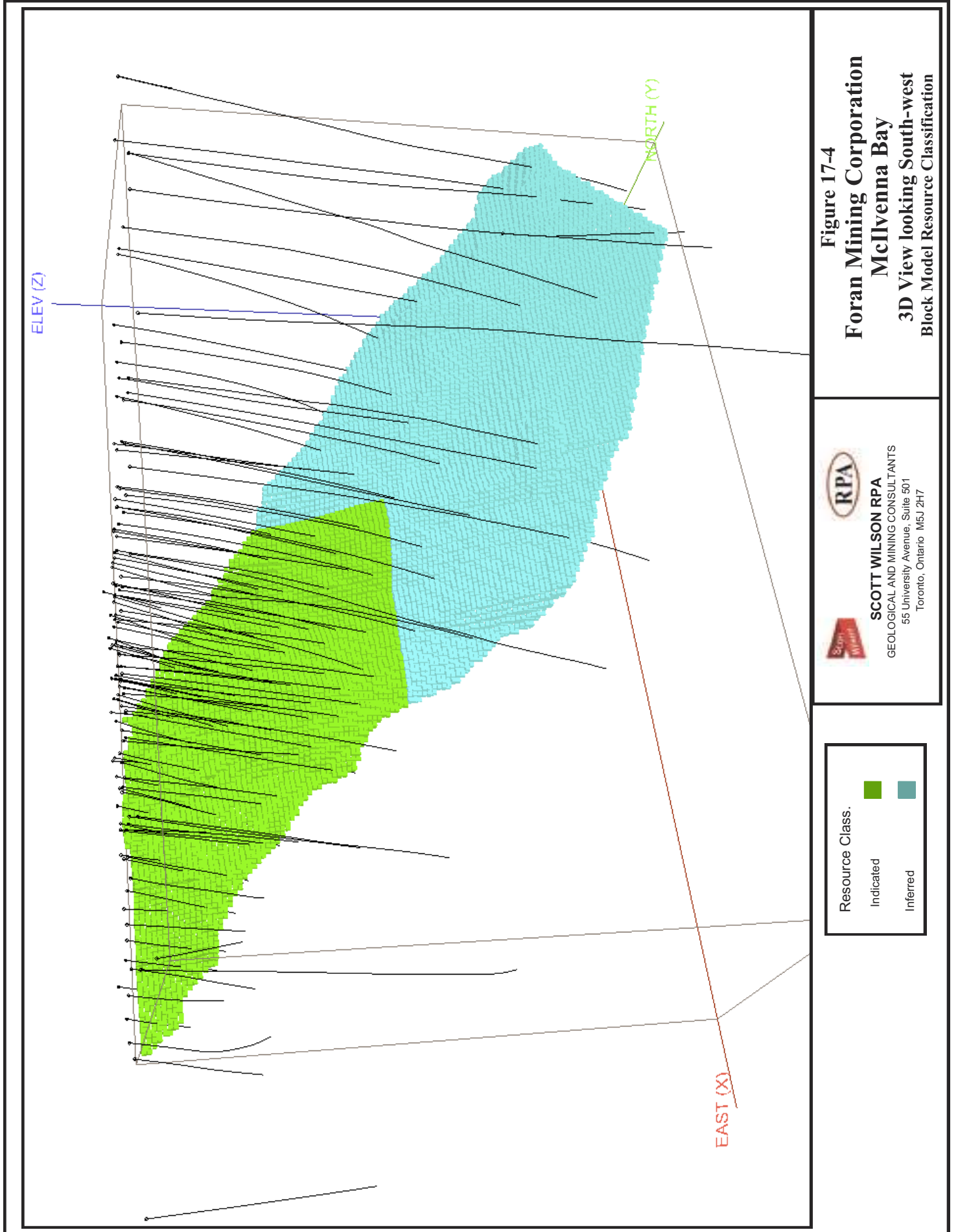
**Foran Mining Corporation**  
*McIlvenna Bay Project*  
Saskatchewan, Canada  
**Vertical Cross Section 9800 E**  
DDH Traces and Lens Outlines

November 2006



**Figure 17-3**  
**Foran Mining Corporation**  
**McIlvenna Bay**  
**3D View looking South-west**  
**Lens Wireframes**

  
**SCOTT WILSON RPA**  
GEOLOGICAL AND MINING CONSULTANTS  
55 University Avenue, Suite 501  
Toronto, Ontario M5J 2H7



**Figure 17-4**  
**Foran Mining Corporation**  
**McIlvenna Bay**  
**3D View looking South-west**  
**Block Model Resource Classification**



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Toronto, Ontario M5J 2H7

Resource Class.

Indicated	
Inferred	

## **CUTTING HIGH GRADE VALUES**

Erratic high grade assays can have a large and disproportionate effect in the estimation of the average grade of a deposit. Graphs were prepared to show the distribution of uncut metal values for each mineralized zone. Scott Wilson RPA's interpretation of these graphs suggested minor cutting was necessary. Cu assays were cut to 10.0% Cu (four assays in total) and Zn assays were cut to 25% Zn (four assays in total).

## **COMPOSITING**

Scott Wilson RPA composited drill hole assays to 1.0 m down hole within each mineralized zone and for all assays outside the zones. Composites less than 0.25 m long were excluded from the composite database. Table 17-3 summarizes statistics of the cut Cu and Zn composite assays for each zone.

**TABLE 17-3 STATISTICS OF DRILL HOLE COMPOSITES BY ZONE**  
Foran Mining Corporation - McIlvenna Bay Project

	Cu (%)	Zn (%)
<b>Massive Sulphides (n=471)</b>		
Mean	0.25	7.13
Standard Deviation	0.31	3.23
Coef. of Variation	1.25	0.45
Maximum	1.90	20.4
<b>Semi-Massive Sulphides (n=168)</b>		
Mean	2.24	4.18
Standard Deviation	1.65	4.93
Coef. of Variation	0.74	1.17
Maximum	9.46	22.2
<b>Cu Stringer Zone (n=734)</b>		
Mean	1.52	0.31
Standard Deviation	1.14	0.59
Coef. of Variation	0.75	1.89
Maximum	8.21	9.65

## DENSITY

Scott Wilson RPA received density data for the drill hole intersections within each selected wireframe. A total of 3,261 records were used, with density ranging from 1.3 to 4.6 for an unweighted average density of 2.97. Density was interpolated throughout the block model using the inverse distance squared method.

## VARIOGRAPHY, KRIGING PARAMETERS AND BLOCK MODEL

Scott Wilson RPA developed variograms for Cu, Zn, and Ag composites for each mineralized zone. Down hole variograms modeled well while directional variograms were less obvious on a single variogram basis (Figures 17-5 to 17-7). However, after examination of numerous variograms at various lag distances and directions, some

consistencies were identified that reflected the geology of the deposit and the kriging parameters outlined in Table 17-4 were chosen. Single and double structure spherical models were used with nugget effect derived from the down hole variograms. Search parameters were chosen so that all blocks within the mineralized envelopes had grades interpolated.

Zones 3 and 4 were interpolated using inverse distance squared methodology with the same search parameters as the other zones.

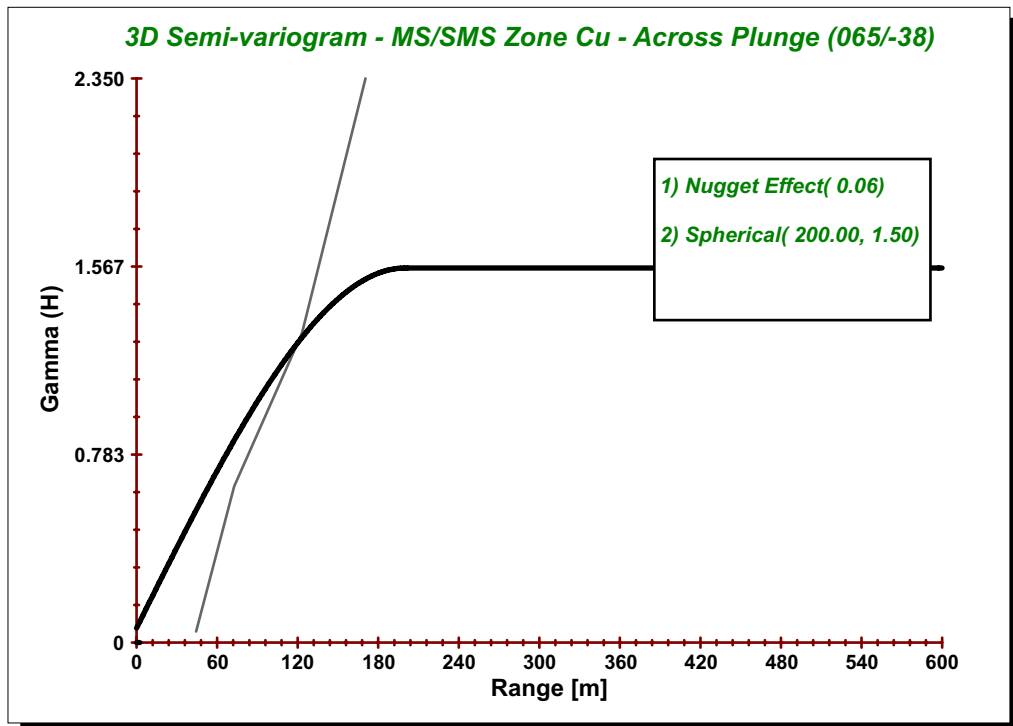
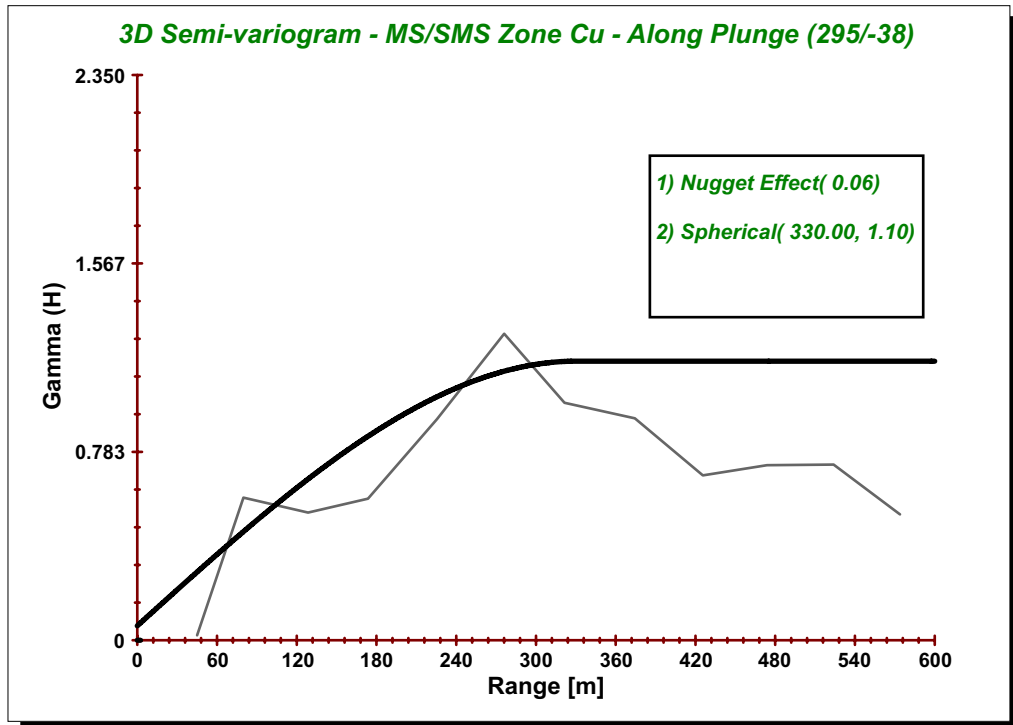


Figure 17-5

**Foran Mining Corporation**

*McIlvenna Bay Project*  
*Saskatchewan, Canada*

**3D Semi-variogram**  
**Ms/sms Zone Cu**

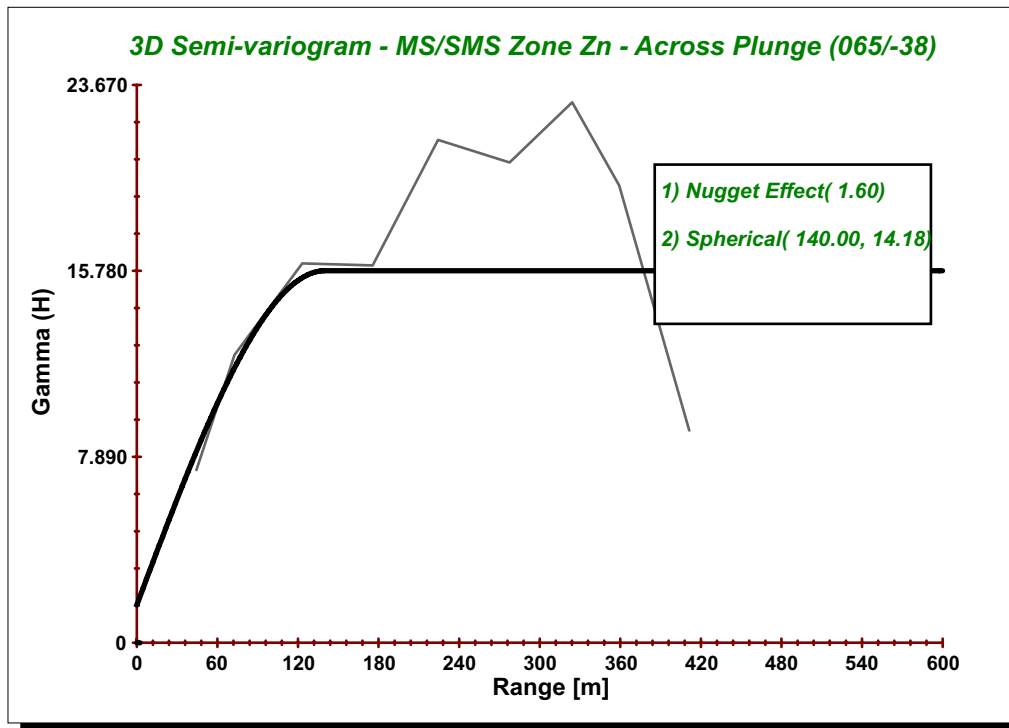
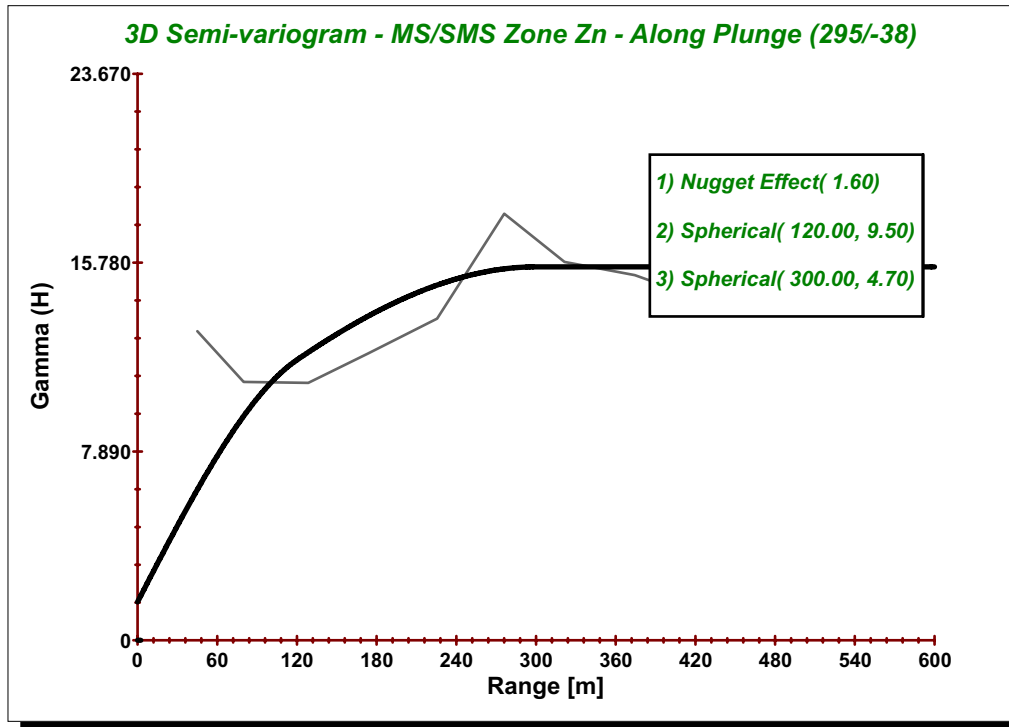


Figure 17-6

**Foran Mining Corporation**

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*McIlvenna Bay Project*  
*Saskatchewan, Canada*

**3D Semi-variogram**  
**Ms/sms Zone Zn**

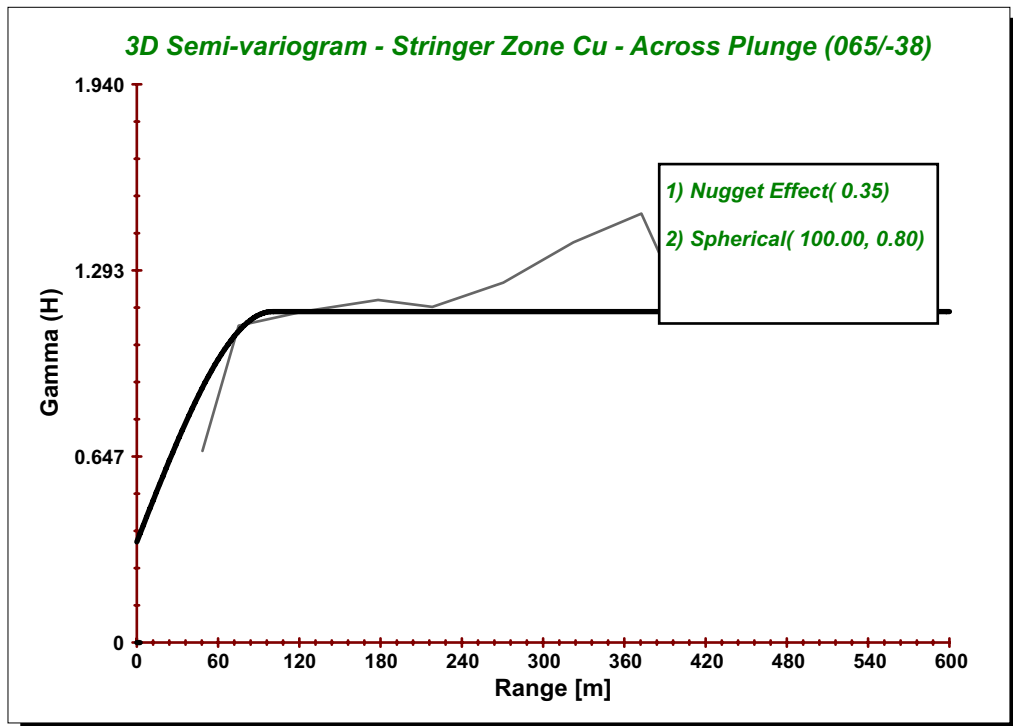
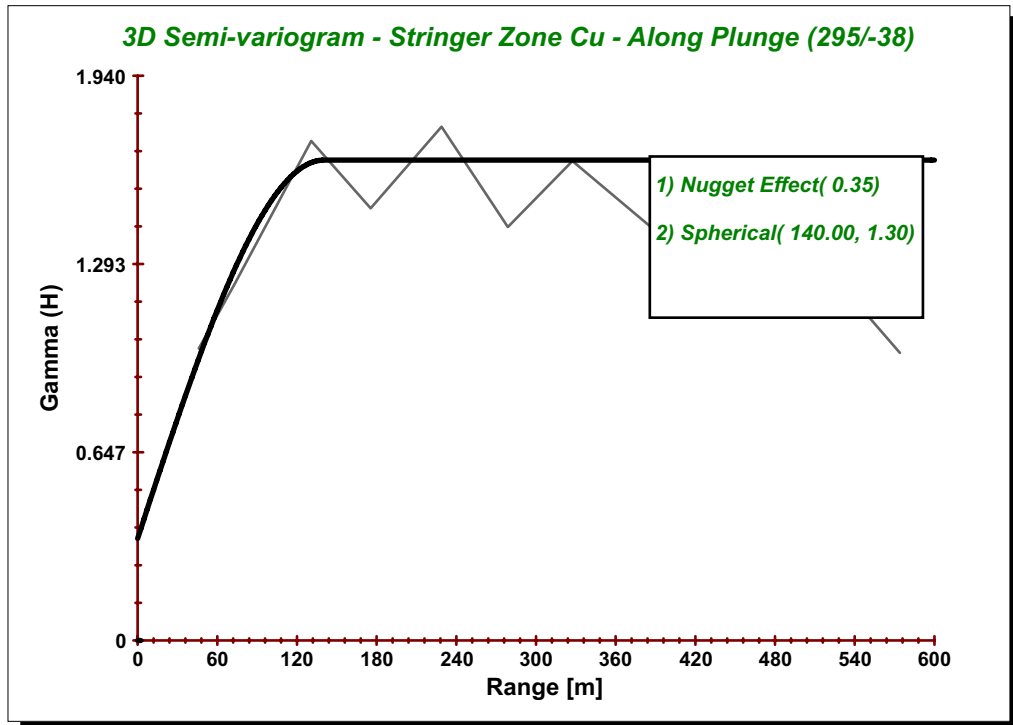


Figure 17-7

**Foran Mining Corporation**

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*McIlvenna Bay Project*  
*Saskatchewan, Canada*

**3D Semi-variogram**  
**Stringer Zone Cu**

**TABLE 17-4 KRIGING PARAMETERS**  
Foran Mining Corporation - McIlvenna Bay Project

		Lens 2/Upper West			Cu Stringer	
		Cu	Zn	Ag	Cu	Ag
NUGGET		0.06	1.60	100	0.35	25
SILL	Along Plunge	1.10	9.5/4.7	1,106	1.30	115
	Across Plunge	1.50	14.4	1,106	0.80	115
	Normal to Plunge	0.60	9.4	430	0.75	37
RANGE (m)	Along Plunge	330	120/300	220	140	140
	Across Plunge	200	140	250	100	140
	Normal to Plunge	2.2	3.4	2.8	2.6	2.6

**Search Ellipsoid**

Range	x 400 m
	y 200 m
	z 40 m
Rotation	z 0°
	x -65°
	z -45°

**Samples Used**

Minimum	2
Maximum	12
Max/Hole	4

## CALCULATION OF NSR VALUES

Net Smelter Return (NSR) is the estimate of the value in any specific tonnage of mineralized material that would be received by the mine owner after paying costs for mining and milling. It is essentially the revenue that is received for each tonne of concentrate that leaves the property. The NSR considers all transportation, smelting and refining, penalties, transportation and insurance that each tonne of concentrate would incur.

Using the metal prices listed in Table 17-5, the in-situ Cu and Zn percent values in each block of the block model were converted to US\$ amounts. These cash values for Cu and Zn were then converted to an NSR using ratios of in-situ values to NSR values for each metal. The ratios were calculated using the parameters listed with the Zn ratio equal to 0.45 and the copper ratio equalling 0.55. Silver and gold do not contribute any significant value to the NSR and were not included in the calculations.

**TABLE 17-5 NSR PARAMETERS**  
**Foran Mining Corporation - McIlvenna Bay Project**

Parameter	Value
<b>Commodity Prices (US\$)</b>	
Copper	\$1.50
Zinc	\$0.70
<b>Concentrate Factors</b>	
Cu Concentrate Grade	28%
Zn Concentrate Grade	50%
Cu Con Treatment Charge (\$/dmt Con)	\$80
Zn Con Treatment Charge (\$/dmt con)	\$210
<b>Transportation Costs</b>	
Total Cu Con Transport Costs	\$115
Total Zn Con Transport Costs	\$5.26
<b>Recoveries</b>	
Copper	81%
Zinc	72%

## CLASSIFICATION OF MINERAL RESOURCES

Scott Wilson RPA classified the mineral resources at McIlvenna Bay in the block model into indicated and inferred categories based on drill hole spacing and apparent geological and grade continuity of the mineralized zones. The classification methodology used was the same as developed by Foran. It quite acceptably accounts for geological characteristics and continuity.

Indicated mineral resources are located between L93+00E and L104+00E above the 2,750 elevation. Drill hole spacing in this area varies from 40 m to 80 m, on 50 m sections. Inferred mineral resources exist below and to the west of the indicated

resources along the plunge of the deposit. Drilling in this area is much more irregularly spaced both on and between sections.

## **SUMMARY OF MINERAL RESOURCE ESTIMATE**

Table 17-6 lists the mineral resources by zone and category at several NSR cut-offs. Scott Wilson RPA recommends that the mineral resource estimate be reported at an NSR cut-off of \$50.

**TABLE 17-6 MINERAL RESOURCE ESTIMATE**  
**Foran Mining Corporation – McIlvenna Bay Project**

NSR Cut-off	Category	Zone	Tonnes (000)	%Cu	%Zn	Ag (g/t)	NSR (\$)	
\$40	Indicated	Lens 2	4,921	0.28	7.16	23.1	74.39	
		Upper West	1,442	2.61	4.55	40.2	76.81	
		Cu Stringer	292	3.10	1.16	23.6	49.07	
		Lens 3	573	1.34	4.34	12.6	59.24	
		Lens 4	76	1.51	4.60	10.6	63.92	
		<b>Total</b>	<b>7,304</b>	<b>0.95</b>	<b>6.16</b>	<b>25.5</b>	<b>72.56</b>	
	Inferred	Lens 2	3,942	0.35	6.47	26.7	68.4	
		Upper West	2,464	1.71	4.41	21.0	64.4	
		Cu Stringer	37	2.69	1.04	31.1	42.9	
		Lens 3	191	0.34	5.73	23.0	60.9	
		Lens 4	0					
	\$50	Indicated	<b>Total</b>	<b>6,634</b>	<b>0.87</b>	<b>5.65</b>	<b>24.5</b>	<b>66.5</b>
			Lens 2	4,763	0.27	7.26	23.0	75.33
			Upper West	1,336	2.64	4.77	41.5	79.25
Cu Stringer			109	3.42	1.62	24.6	57.48	
Lens 3			410	1.32	4.92	12.5	64.83	
Lens 4			53	1.43	5.58	10.4	72.71	
Inferred		<b>Total</b>	<b>6,671</b>	<b>0.87</b>	<b>6.51</b>	<b>26.0</b>	<b>75.16</b>	
		Lens 2	3,700	0.35	6.63	26.9	70.0	
		Upper West	2,200	1.67	4.63	21.1	66.2	
		Cu Stringer	0					
		Lens 3	100	0.39	6.47	29.3	69.0	
\$60		Indicated	Lens 4	0				
			<b>Total</b>	<b>6,000</b>	<b>0.83</b>	<b>5.89</b>	<b>24.8</b>	<b>68.6</b>
			Lens 2	4,133	0.26	7.59	23.3	78.34
	Upper West		1,084	2.65	5.31	44.9	84.81	
	Cu Stringer		28	3.52	2.31	27.6	65.59	
	Lens 3		266	1.02	5.80	11.5	69.85	
	Inferred	Lens 4	33	1.09	7.19	8.62	84.55	
		<b>Total</b>	<b>5,544</b>	<b>0.79</b>	<b>7.03</b>	<b>26.9</b>	<b>79.17</b>	
		Lens 2	2,800	0.30	7.15	26.7	74.6	
		Upper West	1,600	1.62	5.13	22.0	70.5	
		Cu Stringer	0					
	\$70	Indicated	Lens 3	100	0.41	6.97	31.1	74.2
			Lens 4	0				
			<b>Total</b>	<b>4,500</b>	<b>0.77</b>	<b>6.43</b>	<b>25.1</b>	<b>73.1</b>
Lens 2			2,993	0.24	8.10	24.4	83.3	
Upper West			791	2.67	6.00	48.9	91.9	
Cu Stringer			6	3.12	3.47	30.0	72.3	
Inferred		Lens 3	119	0.77	6.69	11.1	75.8	
		Lens 4	23	1.03	8.16	8.63	93.4	
		<b>Total</b>	<b>3,932</b>	<b>0.75</b>	<b>7.63</b>	<b>28.8</b>	<b>84.8</b>	
		Lens 2	2,100	0.29	7.45	26.2	77.4	
		Upper West	600	1.58	6.06	21.5	79.2	
Inferred		Cu Stringer	0					
		Lens 3	100	0.41	7.14	29.0	75.8	
		Lens 4	0					
	<b>Total</b>	<b>2,800</b>	<b>0.57</b>	<b>7.14</b>	<b>25.3</b>	<b>77.7</b>		

## Notes:

1. CIM definitions were followed for mineral resources.
2. Mineral resources are estimated using long-term prices of US\$1.50 for Cu and US\$0.70 for Zn.
3. A minimum mining width of 3.0 metres was used.
4. Totals may not add correctly due to rounding.

## **MINERAL RESOURCE VALIDATION**

Scott Wilson RPA applied three methods to validate the block model mineral resource including: visual inspection, block statistics versus composite statistics comparison, and a comparison with results from an alternative interpolation algorithm.

The block grades were visually compared with the composite grades on sections and plans and were found to have good overall correlation. It is noted that the grade interpolation profiles should be reviewed and revised when new data become available.

The composite assays within the Len 2 massive zone average 0.25% Cu and 7.13% Zn. This compares to the overall average block grade (at a zero cut-off) of 0.31% Cu and 6.78% Zn. In the Upper West the composites average 2.24% Cu and 4.18% Zn, while the blocks average 1.97% Cu and 4.10% Zn. It is Scott Wilson RPA's opinion that the difference in the two estimates are within acceptable limits.

In addition to the kriging interpolation method, Scott Wilson RPA estimated the mineral resource at McIlvenna Bay using the Inverse Distance method to the power of two. Table 17-7 lists the results. It is Scott Wilson RPA's opinion that the difference in the two estimates are well within acceptable limits.

**TABLE 17-7 COMPARISON OF INDICATED RESOURCE ESTIMATE OF KRIGING AND INVERSE DISTANCE METHODS**  
**Foran Mining - McIlvenna Bay Project**

NSR Cut-off	Category	Method	Zone	Tonnes (‘000)	Cu (%)	Zn (%)	Ag (g/t)	
\$50	Indicated	Kriging	Lens 2	4,763	0.27	7.26	23.0	
			Upper West	1,336	2.64	4.77	41.5	
			Cu Stringer	109	3.42	1.62	24.6	
			<b>Total</b>	<b>6,208</b>	<b>0.84</b>	<b>6.63</b>	<b>27.0</b>	
	Indicated	ID2	Lens 2	4,763	0.26	7.29	22.7	
			Upper West	1,336	2.62	4.89	43.15	
			Cu Stringer	109	3.72	1.62	27.2	
			<b>Total</b>	<b>6,208</b>	<b>0.83</b>	<b>6.67</b>	<b>27.2</b>	
	%Difference					1.2	0.6	0.7

## COMPARISON WITH FORAN 2000 RESOURCE ESTIMATE

Scott Wilson RPA compared the results of the current estimate with the Foran NSR estimate completed in 2000. The comparison in Table 17-8 shows that the two estimates are very similar for the indicated category above cut-off grade. The tonnages are essentially the same, while the Scott Wilson RPA Cu grades have decreased slightly. The decrease in the Cu grades can be partly explained by the inclusion of some lower grade material when the Lens 2 and Upper West zone solids are adjusted to the minimum mining width of three metres.

The Copper Stringer Zone does not appear in the Scott Wilson RPA resource estimate because of the cut-off used.

**TABLE 17-8 COMPARISON WITH FORAN MINING 2000  
RESOURCE ESTIMATE**

**Foran Mining Corporation - Mcllvenna Bay Project**

Category	Estimate	Zone	Tonnes (‘000)	Cu (%)	Zn (%)	Ag (g/t)
Indicated	Scott Wilson	Lens 2	4,763	0.27	7.26	23.0
		Upper West	1,336	2.64	4.77	41.5
		<b>Total</b>	<b>6,099</b>	<b>0.79</b>	<b>6.71</b>	<b>27.1</b>
Indicated	Foran	Lens 2	4,728	0.31	7.44	23.8
		Upper West	1,529	2.68	5.14	39.6
		<b>Total</b>	<b>6,257</b>	<b>0.89</b>	<b>6.88</b>	<b>27.7</b>
		%Difference	-158	-12.6	-2.5	-2.2

## **18 OTHER RELEVANT DATA AND INFORMATION**

There is nothing to report in this section.

## **19 INTERPRETATION AND CONCLUSIONS**

A significant mineral resource has been estimated for the McIlvenna Bay property as summarized in Table 17-1. Indicated resources total 6,671,000 t at a grade of 0.87% Cu, 6.51% Zn, and 26.0 g/t Ag. Inferred resources total 6,000,000 t at a grade of 0.83% Cu, 5.89% Zn, and 24.8 g/t Ag. These numbers differ from the historic resource estimation by Foran in 2000 largely because the higher cut off used by Scott Wilson RPA eliminates much of the Copper Stringer zone from either category.

More fill-in diamond drilling is required to upgrade the mineral resources and to trace their extension down plunge to the northwest.

Given the advanced stage of this project, it would be reasonable to carry out a preliminary assessment/scoping study after the completion of the next phase of drilling.

## 20 RECOMMENDATIONS

A nine hole, 9,600 m drilling program is recommended as outlined in the budget in Table 20-1. The pierce points of the proposed holes are shown on the Longitudinal Section, Figure 20-1. The purpose of the drilling is to tighten up drill hole spacings so that mineral resources might be upgraded and to explore the down plunge extension of the McIlvenna Bay sulphide deposit (to the northwest). Upon completion of the proposed drilling, the current resource estimate should be updated and a preliminary assessment/scoping study carried out.

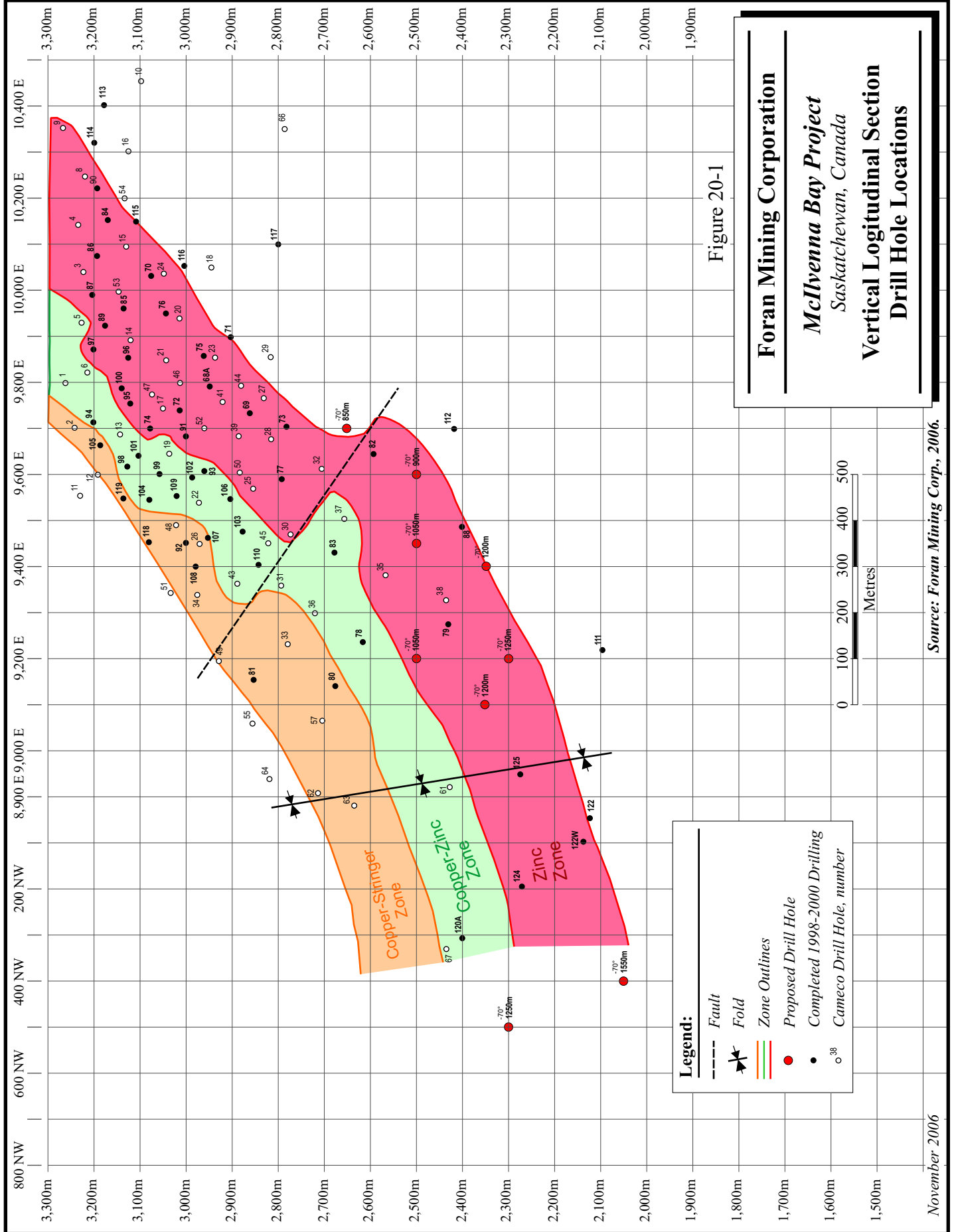
Contingent on the results of the preliminary assessment, a Phase 2 drilling program should be considered to acquire mineralized material for metallurgical test work.

Scott Wilson RPA recommends that a rigorous program of QA/QC be instituted for the next phase of drilling.

**TABLE 20-1 RECOMMENDED PROGRAM AND BUDGET FOR THE PERIOD, NOV 1/06 TO FEB 28/07  
Foran Mining Corporation- McIlvenna Bay Project**

Item	Expenditure, C\$
Salaries/ Supervision	141,000
Field Office Rental/ Communications	30,000
Transportation	9,000
Diamond Drilling: Confirmation/infill drill program 9 DDH = 9,600 m @ C\$100/m	960,000
Camp Costs	45,000
Camp setup	25,000
ATV Rental – \$800/mo x 3 mo.	2,400
Borehole survey equipment – purchase	20,000
Assaying 600 samples x \$30/sample	18,000
Core Logging Software Purchase	20,000
Scoping Study	150,000
Contingency	142,000
<b>TOTAL Phase 1</b>	<b>1,562,000</b>

SCOTT WILSON RPA



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## 22 SIGNATURE PAGE

This report titled “Technical Report on the McIlvenna Bay Project, Saskatchewan” and dated November 27, 2006 was prepared and signed by the following authors:

**(Signed & Sealed)**

Dated at Toronto, Ontario  
November 27, 2006

R. Barry Cook, M.Sc., P.Eng.  
Associate Geologist

**(Signed & Sealed)**

Dated at Toronto, Ontario  
November 27, 2006

Chester M. Moore, P.Eng.  
Principal Geologist

## **23 CERTIFICATE OF QUALIFICATIONS**

### **R. BARRY COOK**

I, R. Barry Cook, P.Eng., as an author of this report entitled “Technical Report on the McIlvenna Bay Project, Saskatchewan” prepared for Foran Mining Corporation and dated November 27, 2006, do hereby certify that:

1. I am Associate Geologist with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave., Toronto, ON, M5J 2H7.
2. I am a graduate of Queen’s University, Kingston, Ontario, Canada, in 1962 with a Bachelor in Science degree in Geological Engineering and in 1964 with a Master of Science degree in Geological Engineering.
3. I am registered as a Professional Engineer in the Province of Ontario (Reg. # 9202011) and as a Professional Engineer/Professional Geologist in the Northwest Territories (Reg. # L797). I have worked as a professional geologist for a total of 42 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Exploration Manager, Eastern Canada, with a major Canadian mining company, with a mandate to find and acquire mineral deposits
  - Experience on numerous volcanogenic massive sulphide (VMS) exploration projects in Canada
  - Attendance at numerous short courses and conferences and on field trips concerning VMS camps and individual deposits
  - Surface and/or underground visits to most of the significant VMS deposits in Canada
4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.
5. I visited the McIlvenna Bay property on September 26, 2006.
6. I am responsible for preparation of Items 3 through 16 and 18, and contributed to Items 1, 2, 19, and 20 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.4 of National Instrument 43-101.
8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. 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.
10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated 27<sup>th</sup> day of November, 2006

**(Signed & Sealed)**

R. Barry Cook, M.Sc., P.Eng.

**CHESTER M. MOORE**

I, Chester M. Moore, P.Eng., as an author of this report entitled Technical Report on the McIlvenna Bay Project, Saskatchewan” prepared for Foran Mining Corporation and dated November 27, 2006, do hereby certify that:

1. I am Principal Geologist with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.
2. I am a graduate of the University of Toronto, Toronto, Ontario, Canada in 1972 with a Bachelor of Applied Science degree in Geological Engineering.
3. I am registered as a Professional Engineer in the Province of Ontario (Reg. # 32455016). I have worked as a geologist for a total of 34 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Mineral Resource and Reserve estimation, feasibility studies, due diligence, corporate review and audit on exploration projects and mining operations world wide
  - Various advanced exploration and mine geology positions at base metal and gold mining operations in Ontario, Manitoba and Saskatchewan
  - Director, Mineral Reserve Estimation and Reporting at the corporate offices of a major Canadian base metal producer
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.
5. I have not visited the project site.
6. I am responsible for preparation of Item 17 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.4 of National Instrument 43-101.
8. I have had no prior involvement with the property that is the subject of the Technical Report.
9. 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.

10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated 27<sup>th</sup> day of November, 2006.

**(Signed & Sealed)**

Chester M. Moore, P.Eng.

## **24 APPENDIX 1**

### **ANALYTICAL PROCEDURES, TSL ASSAYERS**

#### **GOLD**

Gold samples were assayed using standard Fire Assay procedures. Samples were fused with a flux mixture of litharge, soda, borax, silica, and fluorospar. The resulting lead button containing the gold was cupelled and subsequently dissolved in aqua regia and analyzed by Atomic Absorption Spectrophotometry. If the resulting sample exceeded 3 g/t gold, a gravimetric assay was then done on the sample in which the fused cupelled lead button was instead parted by dilute nitric acid and the gold decanted with deionized water, dried, annealed and weighted on a microbalance.

#### **SILVER**

Silver analyses were completed on 4.00 grams of pulverized rock which was digested with 3:1 HCl/HNO<sub>3</sub> and then diluted with 1:1 HCl. The resulting solution was analyzed by Atomic Absorption Spectrophotometry.

#### **COPPER, LEAD, ZINC**

Copper, lead, and zinc analyses were determined from 0.500 grams of the pulverized rock, digested with 3:1 HCl/HNO<sub>3</sub>. The resulting solution was diluted and analyzed by Atomic Absorption Spectrophotometry.

#### **IRON, SULPHUR**

Iron was analyzed by digesting a 1 gram pulverized portion by 3:1 HCl/HNO<sub>3</sub>. The resulting solution was diluted and analyzed by Atomic Absorption Spectrophotometry. Sulphur was analyzed using a Leco SC-12 IR Detection System.

## **25 APPENDIX 2**

**METALLURGICAL TEST WORK**  
**BY**  
**COMINCO ENGINEERING SERVICES LTD.**

### **NOTE**

In this 1990 document, reference is made to mineralization from Hanson Lake A, B, and C Zones. Using the current Foran terminology Scott Wilson RPA believe that this will refer to the Lens 2, Upper West, and Copper Stringer Zones, respectively.

COMINCO LTD./Technical Research  
Mineral Treatment Research

INTERIM PROGRESS REPORT NO. 90PR29

**Hanson Lake Project - Metallurgical Studies 'A' Zone  
Sample**

**INTRODUCTION**

Cominco Engineering Services Ltd. has been contracted by CAMECO's Mine Development Division to provide consulting metallurgical services on the Hanson Lake project, located in north-eastern Saskatchewan.

The test work reported herein includes the following:

- Flotation test work to define grades, recoveries, flotation residence times and reagent requirements for the production of separate zinc and copper concentrates from the 'A' zone of the deposit.
- Minor element analysis of zinc and copper concentrates produced from the 'A' zone of the Hanson Lake deposit.
- Preliminary flotation test work on samples provided by CAMECO from the 'B' and 'c' zones of the deposit.
- Preliminary filtration test data on zinc concentrate.
- Percolation test data on flotation tailings produced using various procedures for partial desliming.
- Settling test data on tailings, slime and talc tailing products.
- Tailings pond simulation data for heavy metal pickup.

December 10, 1990

MJF/sj

**LIMITED DISTRIBUTION:** Technical Research: CAS/PJMcI MJF  
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**SUMMARY**

The Hanson Lake 'A' zone sample contains approximately 12% sphalerite in 65% pyrite with a mesh of liberation of about 50 microns (270 mesh). There is also present up to 1% chalcopyrite which must be separated in order to produce a readily saleable zinc concentrate.

A zinc concentrate grading approximately 54% Zn at a recovery of around 90% can be produced from the 'A' zone by careful, slow flotation. Three stages of zinc cleaning are required. The zinc concentrate is favourably low in magnesia, silica and minor element impurities, with the exception of mercury at 200 ppm.

One flotation test was run using Hanson Lake water. There was no significant difference between this test and a similar test run using normal Trail water.

The copper impurity cleans up readily to produce a saleable grade copper concentrate carrying significant gold and silver values.

The tailings may be treated by single stage cycloning to produce a sand product potentially suitable for mine backfilling. The weight recovery to the sand product is approximately 75%.

The tailings product remained stable over a four week testing period. It maintains a pH of 7.3 to 7.4 with favourably low copper, zinc and iron heavy metals in solution.

Preliminary testing of material from the high-copper 'C' section of the deposit shows that a high grade copper concentrate may be produced at good recovery.

Preliminary testing of material from the mixed copper-zinc 'B' zone of the deposit shows significant cross-contamination between copper and zinc. It is concluded that a significant metallurgical testing program will be required to develop an optimum metallurgy for this material.

**DETAILS****1. Test Samples**

The following Hanson Lake project samples were received from CAMECO on July 30, 1990:

	<b>Wt. kg</b>	<b>Cu</b>	<b>Pb</b>	<b>Zn</b>	<b>Fe</b>
"A" Zone	220	0.28	0.5	6.3	28.2
"B" Zone	62	2.6	0.37	2.7	17.9
"C" Zone	57	2.3	0.03	0.37	9.0

The as-received sample was delivered as -0.5 cm crushed reject material. It was stage crushed to pass 7 mesh using a Denver 6" rolls crusher. The -7 mesh individual samples were blended by riffing, split into 2 kg test samples and stored in sealed, polyethylene buckets until required for testing.

**2. Expected Metallurgy**

Two locked cycle tests were completed on the 'A' zone sample. Neither test duplicated the desired metallurgy. The first test left the zinc scavenger circuit open circuited. The second test gave relatively poor zinc-iron selectivity due the use of higher reagent levels in an attempt to achieve faster flotation kinetics.

The expected range of concentrate grades and recoveries is shown in the following two tables with open and closed zinc scavenger cleaner tailings, respectively. The flotation circuit used in the first locked cycle test is shown in Figure 1 (Appendix B).

**TABLE 1**

<b>Product</b>	<b>wt.%</b>	<b>Assays</b>			<b>Distribution</b>		
		<b>Cu</b>	<b>Zn</b>	<b>Fe</b>	<b>Cu</b>	<b>Zn</b>	<b>Fe</b>
Talc Con	2.34	0.18	3.69	12.8	1.46	1.17	0.96
Copper Con	0.1	20.8	4.52	25.4	7.22	0.06	0.08
Zinc Con	12.1	1.9	53.5	10	80.05	87.81	3.89
Tails	85.4	0.04	0.95	34.8	11.27	10.97	95.07
Calc'd Feed	100	0.29	7.39	31.2			

Zinc 3rd cleaner concentrate and zinc scavenger concentrates are combined. Scavenger cleaner tailings go to final tailings.

TABLE 2

Product	wt. %	Assays			Distribution		
		Cu	Zn	Fe	Cu	Zn	Fe
Feed	100	0.29	7.3	31.2			
Talc Prefloat	1.75	0.2	2.22	13.7	1.24	0.53	0.77
Copper Con	0.25	25.6	4.87	3.52	22.74	0.17	0.03
Zinc Con	12.6	1.63	54.5	7.77	72.98	94.15	3.16
Tails	85.4	0.01	0.44	34.8	3.03	5.15	96.03
					100	100	100

By simulation, the following changes were made:

1. Zinc scavenger cleaner concentrate recycled to zinc 2nd cleaner feed.
2. Zinc scavenger cleaner tailings recycled to zinc rougher feed.

These data show that with careful zinc roughing and cleaning a zinc concentrate grading 54% zinc and 1% copper should be produced at a recovery between 89% and 94%. The recovery value of 89% assumed by CAMECO in their feasibility estimate is considered to be realistically attainable with careful flotation practice.

### 3. Flotation Residence Time

In order to achieve high zinc/ iron selectivity, a slow zinc rougher-scavenger flotation step is required. Residence times used in the bench scale locked cycle test are shown in Table 3.

TABLE 3

Step	Time (min.)
Aeration	15
Talc Prefloat	15
Cu Conditioning	2
Cu Roughing	15
Cu 1 <sup>st</sup> Cleaner	15
Cu 2 <sup>nd</sup> Cleaner	12
Zinc Roughing	45
Zinc Scavenger	15
Zinc 1 <sup>st</sup> Cleaner	9
Zinc 2 <sup>nd</sup> Cleaner	9
Zinc 3 <sup>rd</sup> Cleaner	9
Zinc Scav 1 <sup>st</sup> Cleaner	12
Zinc Scav 2 <sup>nd</sup> Cleaner	10

\* Aeration and Talc Prefloat step may be combined

#### 4. Recycle Rates

Recycle rates for each stage of zinc flotation from the first locked cycle test are shown in Table 4. It is often found that actual plant cleaner stage recycles are higher than is observed in bench locked cycle testing. For the purposes of detailed mill design, an allowance for up to three times the observed bench test recycles should be made.

**TABLE 4**  
**Recycle Rates - Zinc Circuit (From LCT #1)**

Zinc Rougher	108%
Zinc 1st Cleaner	138%
Zinc 2nd Cleaner	122%
Zinc 3rd Cleaner	100%

$$\text{Recycle Rate} = \frac{\text{Stage Feed} + \text{Recycles}}{\text{Stage Feed}}$$

#### 5. Reagent Balance

The reagent balance for the Hanson Lake 'A' zone sample is shown in Table 5.

**TABLE 5**  
**Reagent Balance**

	<b>Rate</b> <b>kg/Lt</b>	
Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub>	0.15	To grind
Amyl Xanthate	0.17	To each flotation stage
Copper Sulphate	0.5	To each zinc flotation stage
MIBC	0.023	As required
Lime	0.5	To zinc cleaners

#### 6. Open Circuit Flotation Tests 'A' Zone Sample

Thirty-six open flotation tests were carried out on the 'A' zone sample. The purpose of these tests was to evaluate alternative reagent schemes for optimization of zinc flotation grade and recovery. One other test (HL001B05) was carried out using water from Hanson Lake. No significant change in metallurgy was observed (Figure 3). A compilation of these tests is included as Appendix A.

#### 7. Locked Cycle Testing 'A' Zone Sample

Two locked cycle tests were completed on the 'A' zone sample.

Details of these tests are included as Appendix B.

### **8. Concentrate Minor Elements Analysis**

The final zinc concentrate from locked cycle Test 1 and combined copper concentrates from the two locked cycle tests were assayed according to standard classical and instrumental techniques for payable and deleterious minor elements. The results from these analyses are given in Appendix C.

### **9. Zinc Concentrate Filtration Testing**

Pressure filtration testing was completed on zinc concentrate produced from the first locked cycle test using a LAROX Model 1A pressure filter with a filtration area of 50 cm<sup>2</sup>. A best concentrate moisture of 7% was achieved using an air blow of 7 minutes and a cake dry weight loading of 15 kg/m<sup>2</sup>. Test details are given in Appendix D. Test results show high variability due to the poor sample handling characteristics of the small filter.

Pressure filtration design data would require a sample of several kilograms tested using the Larox 0.1 m<sup>2</sup> test unit available through Larox or the equivalent unit available through Ingersol Rand, the Canadian representative for the competing Lasta filter. Filtra Systems also provide testing facilities for the Vertipress Filter.

### **10. Tailings Sand Backfill**

Flotation tailings from the locked cycle test were classified through one pass of a 1" Mozley cyclone operating at 67 kPa. A sands weight recovery of 75% was achieved. The sands gave a percolation rate of 4.5 cm/hr using a 2.5 cm diameter by 30 cm column packed by gravity flow into the column.

The slimes were settled without flocculation to give the settling curve shown in Figure 5. Slimes weight was 100 g to give a terminal density of 500 g/L.

Details of the cycle backfill separation are given in Appendix E.

### **11. Tailings Filtration**

Testing was also carried out for a paste backfill separation. Tailings were deslimed by multiple bucket decantation and the resultant sands filtration characteristics determined by vacuum filter leaf testing. A filtration rate of approximately 300 kg/m<sup>2</sup>/hr was achieved after desliming using a 30 cfm cloth. Details are given in Appendix F.

### **12. Tailings Stability Testing**

Tailings produced from flotation test HL001B32 was used for a tailings pond simulation. After completion of the test and sampling the tailings for moisture and analysis, the tailings filter cake was repulped in the rougher tailings filtrate and allowed to stand. The results of pH, zinc, copper and iron are shown in Figure 8 (Appendix G). These results are favourable.

**13. Preliminary Flotation Testing - Hanson Lake Zone 'B' Sample**

Two flotation tests have been completed on the Hanson Lake 'B' zone sample. These show recovery of 73% of the copper to the copper concentrate together with 14% of the zinc. Overall recovery of the zinc was poor with 27% of the zinc in the tailings. These results are included as Appendix H.

These tests suggest that obtaining saleable concentrates at good recoveries from the B zone material will be a challenge and should not be taken as given in the project financial plan.

**14. Preliminary Flotation Testing - Hanson Lake Zone 'C' Sample**

Three flotation tests have been completed on the Hanson Lake 'C' zone sample. These show good copper recovery (95%) to the copper concentrate with only minor contaminating zinc. Good copper metallurgy should be expected with this material, based on the limited amount of test work to date. These results are included as Appendix I.

**15. Calculated Metallurgical Balance - project Phase II**

As estimated metallurgical balance was prepared based on the treatment of equal proportions of zone A and zone C feed. A simple linear combination model was assumed based on the absence of alteration observed in the samples provided by CAMECO. The results of this balance are included as Appendix J.

Signed

M.J. Fairweather  
Group Leader  
Mineral Treatment Research