

## 9 Drilling (Item 13)

### 9.1 Drilling Summary

A total of 1,889 surface and underground drillholes have been completed on the project by Noranda, Exall and Apollo between 1989 and 2008. Of these drillholes, 1,611 were completed by Apollo between 2002 and 2008. Table 9.1 lists the drilling by company and type. Figure 9-1 is a surface plan showing the surface drilling on the property. Figure 9-2 is a plan map showing the underground drilling. The Black Fox database includes 176,525 assay intervals.

**Table 9.1: Black Fox Property Drill Summary**

Company	Period	Type (All Core)	Number	Meters
Noranda	1989-1994	Surface	143	28,014
Exall	1995-1999	Surface	143	21,520
Apollo	2002-2007	Surface	500	146,684
<i>Subtotal</i>		<i>Surface</i>	<i>786</i>	<i>196,218</i>
Exall	1996-2001	Underground	707	61,115
Apollo	2004-2007	Underground	396	78,650
<i>Subtotal</i>		<i>Underground</i>	<i>1,103</i>	<i>139,765</i>
<b>Total</b>		<b>Black Fox</b>	<b>1,889</b>	<b>335,983</b>

### 9.2 Historic Diamond Drilling and Logging

*Portions of this section were excerpted from Technical Report Black Fox Project Matheson, Ontario Canada by N. Prens of Mine Development Associates, August 14, 2006 and have been modified and standardized to this report.*

#### 9.2.1 Noranda Drilling and Logging

Noranda drilled a total of 143 NQ-size diamond core holes between 1989 and 1994. The drillhole have an average depth of 197m and total to 28,014m. All holes were surveyed at the collar and had acid etch tests done to measure their dip angle. A Tropari survey was run at the bottom of a few of the deeper holes to measure deviation. The lack of down-hole surveys on many of the deeper holes will influence the accuracy of their location within the zone of mineralization. Core recovery was apparently very good as few recovery problems were listed in the logs. The core was brought to the surface and taken to Noranda's local logging facility. The core was logged for geology and geotechnical parameters.

#### 9.2.2 Exall Drilling and Logging

Between 1994 through 1999 Exall drilled 143 NQ-size surface core holes totaling 21,520m and 707 underground core holes totaling 61,115m. All of the Exall drill core was NQ-size, unless ground conditions required reduction to BQ. The surface drillholes were down-hole surveyed, however, the underground holes were not surveyed for down-hole deflection, and therefore the bearing and inclination at the collar has to be used for the entire underground drillhole. The core was brought to a surface core area where the geologist logged and sampled it.

Exall resurveyed the collar coordinates of most of the Noranda drillholes, with generally good agreement in the coordinate conversion between the Noranda and Exall data.

### 9.2.3 Apollo Diamond Drilling and Logging

Norex Drilling International from Porcupine, Ontario, has completed most of the surface drilling at Black Fox for Apollo. The holes are typically NQ diameter core unless conditions require a reduction in core size. In general, ground conditions have been very good with average core recovery approximately 95%. The following sections document drilling, chain of custody and logging procedures employed by Apollo. Although no records are available to document the procedure used by the prior operators, there is no reason to suspect they did not follow standard industry practices of the time.

The core is removed from the wire line inner barrel and placed in wooden core boxes. Each box can hold up to 6m of NQ core. The depth at the end of the core run, along with the length of the run and the amount of core actually recovered, is written on wooden blocks, which are placed in the box at the end of the core run. When the box is full, the drillhole number, along with the beginning and ending depth is written on the outside of the box. A wooden lid is then placed on the box and the box is sealed with wire. The core is stacked at the side of the drill until it is picked up by representatives of Apollo Gold Exploration, Inc. During this time, the core is under the direct supervision of the driller.

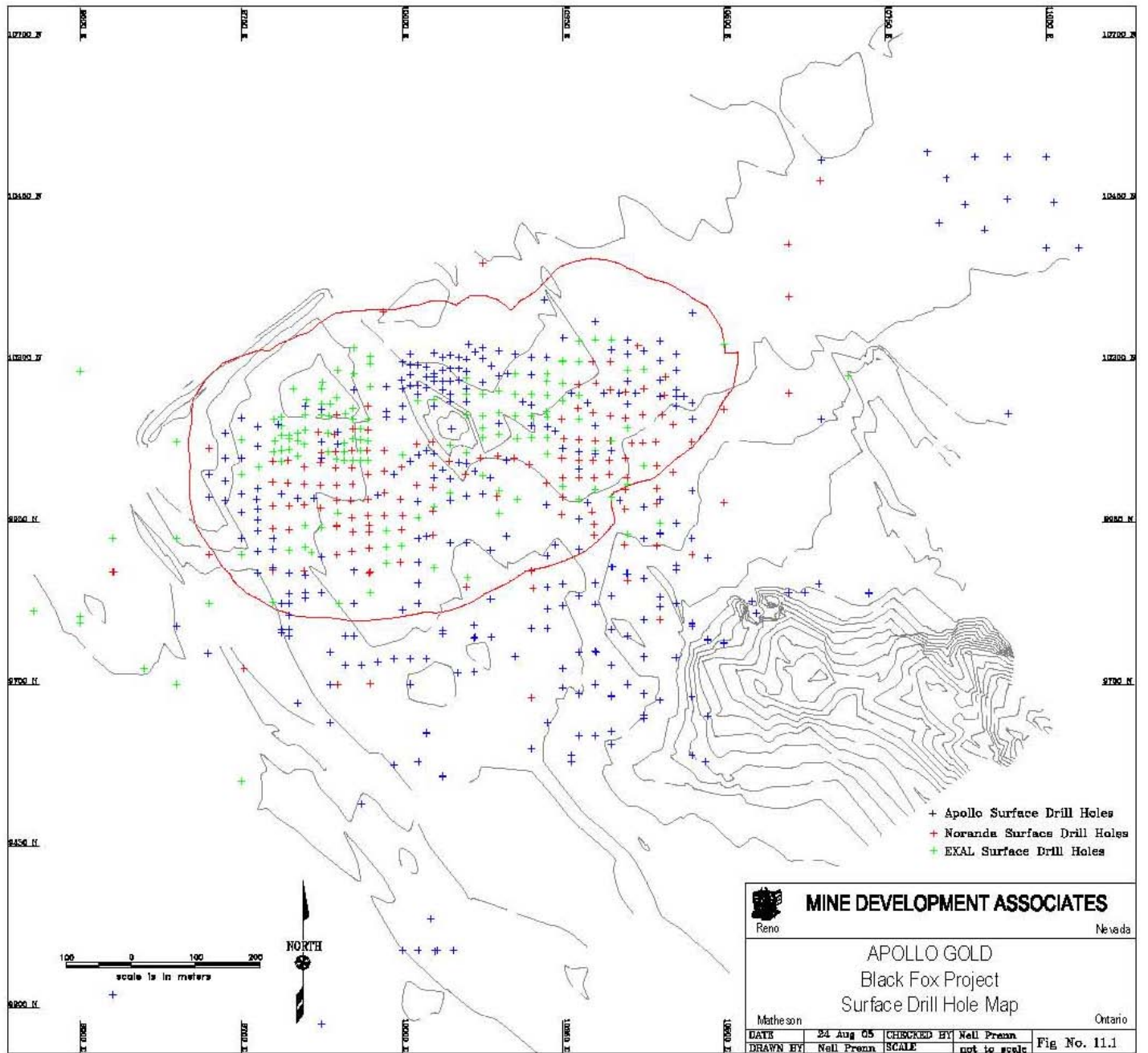
The core samples are picked up by Apollo personnel each morning and at various times during the day as necessary. It is loaded into a company truck and taken to the core logging facility on the project site. The core is then unloaded from the truck, the wire ties are removed and the core is inspected for any damage that might have occurred during transport. Each box is then placed in racks within the core logging facility to await logging by Apollo geologists. When the geologist begins logging a hole, a logging form is first computer generated with data regarding the hole ID, depth, date logged, location and the logging geologist. All logging is done electronically with no handwritten data. This eliminates a separate data entry step and the subsequent errors that it can introduce. The geologist moves the boxes of core from the rack to the core logging table. The lids are removed and placed outside for later reuse. The pieces of core are then reassembled, within the box, just as it would have come out of the hole. The core is then measured and that measurement is compared to the core depth markers placed in the box by the drillers. This documents core recovery and provides a check against any lost or missing core not accounted for by the drillers. All of this data, along with all geological data, are entered into the computer spreadsheet by the geologist. The core is then digitally photographed on the logging bench. This digital record is stored in the computer files for that hole. All of the geological information is backed up on the server daily.

Prior to removing the drill string, the downhole deflection is measured with a Reflex E-Z Shot digital tool (E-Z Shot). Measurements are taken approximately every 50m down the hole. Occasionally a spurious reading will be obtained near a particularly strongly magnetic rock unit. The geologists review all surveys and any such readings are discarded. As a check, three holes were re-surveyed using a Maxi-bore gyroscopic tool. The Maxi-bore survey duplicated the E-Z Shot survey very well. On average, the E-Z Shot gave readings that were within 3.1% on bearing and 0.4% on dip from the Maxi-bore survey information. All drillholes have their collars located by a licensed surveyor upon completion.

The Apollo drilling program has targeted two main areas of the mineralization. The first is the near-surface area where about half of the surface drillholes were completed. Drilling typically is

located along sections oriented  $036^{\circ}$  azimuth at inclinations of  $-45^{\circ}$  to  $-50^{\circ}$  to provide an alignment oriented nearly perpendicular to the DPFZ.

The second targeted area of mineralization is down dip of the previous drilling. At depth, the DPFZ has the same southeasterly strike, but the dip steepens to an average of  $-60^{\circ}$ . The mineralization still occurs along structural intersections and at dilation zones along the fault. These appear to rake at about  $-40^{\circ}$  to the southeast or southwest. In this area, the shoots tend to be smaller, thinner and less continuous than those encountered near the surface. The drillholes, which test this area, were collared from both the surface and underground. Typically, fans were used so that the structure was tested on 12.5 to 25m spacing. Eventually, more tightly-spaced drilling from underground platforms will be required to improve the delineation of the mineralization.



\* Does not include 2007 Apollo Drilling.



SRK Job No.: 144418

File Name: Figure 9-1.doc

**Black Fox,  
Timmins, Ontario, Canada**

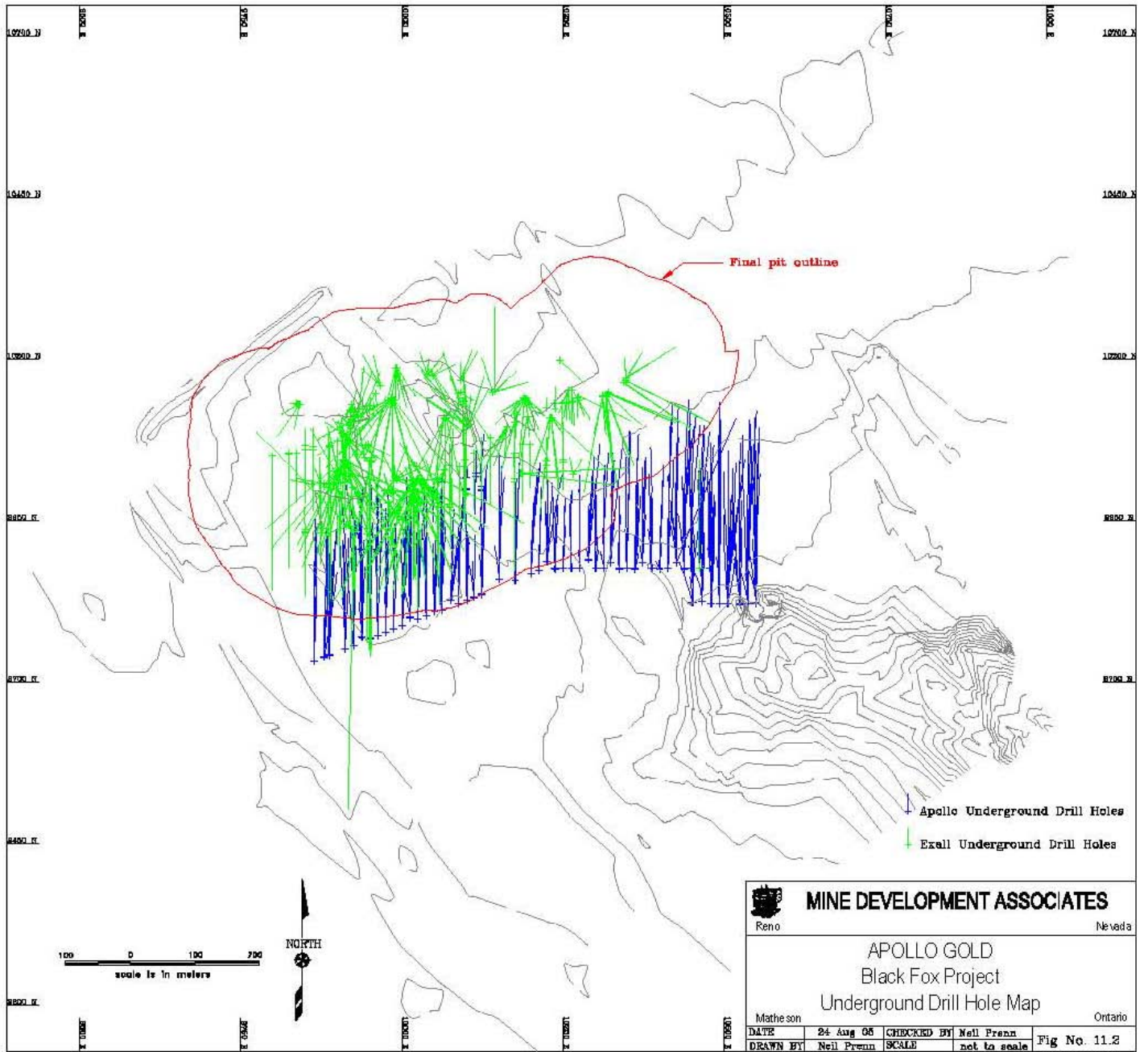
**Source: Mine Development  
Associates**

**Surface Drill Plan**

Date: 07-10-07

Approved: DKY

Figure: 9-1



\* Does not include 2007 Apollo Drilling.



SRK Job No.: 144418

File Name: Figure 9-2.doc

**Black Fox,  
Timmins, Ontario, Canada**

**Source: Mine Development  
Associates**

**Underground Drillhole Plan  
Map**

Date: 07-10-07

Approved: DKY

Figure: 9-2