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Highland Project - 2003 Drill Program Summary
December 31, 2003

Introduction

Six reverse-circulation holes were drilled at the Main Highland target between November 13 and December 4.

Drill hole #	Orientation	Total Depth
H03013	-45, S65W	700'
H03014	-50, S70W	895'
H03015	-55, S75W	860'
H03016	-45, S85W	580'
H03017	-60, S10W	730'
H03018	-45, S75W	752'
		4517'

Procedures

Rio Fortuna's drilling program followed the Exploration Best Practices Guidelines recommended by the Mining Standards Task Force. The author, a Qualified Person as per NI 43-101, supervised the program. Eklund Drilling Company drilled the holes, Wellbore Navigation conducted down-hole surveys on each hole, American Assay Labs did primary analyses, and ALS Chemex Labs did check assays. Drill chips were logged on site by the author or Elliott Crist, Consulting Geologist. Mineral Exploration Services, Ltd. recently surveyed drill collars. The collars for several 2002 sites could not be found under snow cover; therefore, locations for holes H02001 through 004 and holes H02008 and 009 are from a previous survey using a hand-held Garmin GPS.

Samples were collected at the rig by Eklund's personnel every 5'. Samples were collected in large (20" x 24") bags, minimizing overflow. Samples generally varied from 10 to 25 pounds each. The samples were delivered to American Assay Labs immediately upon completing each hole, and duplicates were delivered periodically to ALS Chemex. Rejects from mineralized intervals were selected (approximately 10% of samples) for duplicate analyses. Duplicate samples were re-prepped and analyzed by FA/AA, gravimetric FA, or metallic screen assay. The drillers collected Baggies of material split from each interval at the drill rig, from which the geologists made the chip trays.

Both American Assay Labs and ALS Chemex followed a similar procedure in preparing drill samples. The procedure was designed to minimize variation due to free gold. The samples were dried then the entire sample was crushed to -10 mesh. A 1000-gram split was taken to produce a pulp. Samples were analyzed for Au by fire assay using an AA finish, or using a gravimetric finish on high-grade samples. Approximately 17% (158 pulps) of the original pulps were re-assayed for gold. Multi-element ICP was done on each hole, with Ag included in the ICP package.

Three types of standards were added to each hole: blanks, a low-grade standard, and a high-grade standard. The blanks were samples of unaltered andesite agglomerate collected north of the property. Two blanks were submitted with each hole, one at the beginning (in order to detect any pre-existing contamination in the prep lab) and another randomly placed in the sample sequence. One high-grade and one low-grade standard were also submitted with each hole. These were pulps, purchased from MEG, which did not pass through the lab's prep facility.

Discussion of Each Drill Hole

H03013

The purpose of this hole was to verify the high-grade mineralization intersected in H02010. If the hole had been exactly straight, it would have crossed the bottom of H02010 at about a right angle (H03013 from the east and H02010 from the west). The hole drooped more than we expected and drifted to the right somewhat. This deviation, along with the mineralization dipping steeper than we expected, resulted in intersecting the high-grade mineralization ~100' down plunge of H02010. This is exactly where we intended to intersect the shoot with our second hole during the 2003 program. H03013 demonstrates what our second hole intended to: continuity of high-grade mineralization down plunge of H02010. H03013 was higher in grade than H02010 for both Au and Ag, indicating the mineralization becomes stronger down plunge, and possibly that H02010 suffered some leaching of Ag. Ground water flow was not a serious problem in this hole.

H03014

The purpose of this hole was to test 100' down plunge from H02010. However, the hole drifted an unusual amount to the right and drooped more than expected; thus, it passed NW of the plunging shoot. This location tested the area along strike that our intended 4th hole for the 2003 program would have tested. However, the steeper dip of the vein resulted in this intersection being deeper than we would have liked, so H03018 was added to the program in order to test along strike at the elevation between H02010 and H03013. In H03014, Ag is much more abundant and Au grades are lower than in the main shoot. This hole indicates that the shoot has limited strike length at this elevation (probably 100' or less). This hole also has significant Ag-rich veins in the footwall of the main Au mineralization. These veins are present in other holes, where they are much narrower and lower grade. This may indicate a vector to the NW and deeper, where Au could increase substantially in these veins. Water flow was not a serious problem in this hole.

H03015

The purpose of this hole was to test ~250' down plunge from H02010, which it did. The hole intersected a thick interval of mineralization, probably because the vein zone crosses the contact between porphyritic andesite and underlying dacite volcanics. Other lithologic contacts may also host wide zones of mineralization. High water flow was encountered in the mineralized zone; thus, a significant amount of free Au may have washed out of the samples. R.C. samples will be unreliable below this level due to the amount of water flow, making core necessary to test the shoot down plunge of H03015.

H03016
The purpose of this hole was to explore for a second high-grade shoot in the vicinity of H02005. The hole only intersected mineralization that is similar to H02005, however. The dip of the mineralization appears to be ~80 degrees, steeper than originally thought. Water flow was not a problem in this hole.

H03017
The purpose of this hole was to explore for the same high-grade shoot predicted to lie near H02005, but to test it farther NW and deeper than H03016. H03017 suggests the E-W cross fault has a dip of ~75 degrees south. When the hole crossed into the south block, it intersected mineralization that is somewhat stronger than that intersected in H02005 and H03016. H03017 included some +0.1 opt Au, which is absent in the up-dip holes. This indicates that mineralization may become even stronger at depth. If mineralization has a northerly plunge, similar to the H02010 shoot, then the majority of the mineralization will be in the north block. The dip of the mineralization again suggests ~80 degree dip, consistent with H03016. This steeper dip shows that H02006 intersected a hangingwall vein, not the main Au mineralization. Abundant ground water was intersected in the lower portion of H03017, resulting in overflow of the deeper samples.

H03018
The purpose of this hole was to test NW along strike at the elevation between H02010 and H03013, which it did. Both of the earlier holes were open along strike in this direction. There was no obvious reason for this elevation to be particularly favorable for high-grade mineralization, but favorable stratigraphy or a low-angle fault would have been difficult to identify in R.C. drill chips. Au concentrations are very low in H03018, suggesting this elevation is not especially favorable for higher grades. Abundant ground water was intersected in the lower portion of this hole, resulting in overflow of the deeper samples.

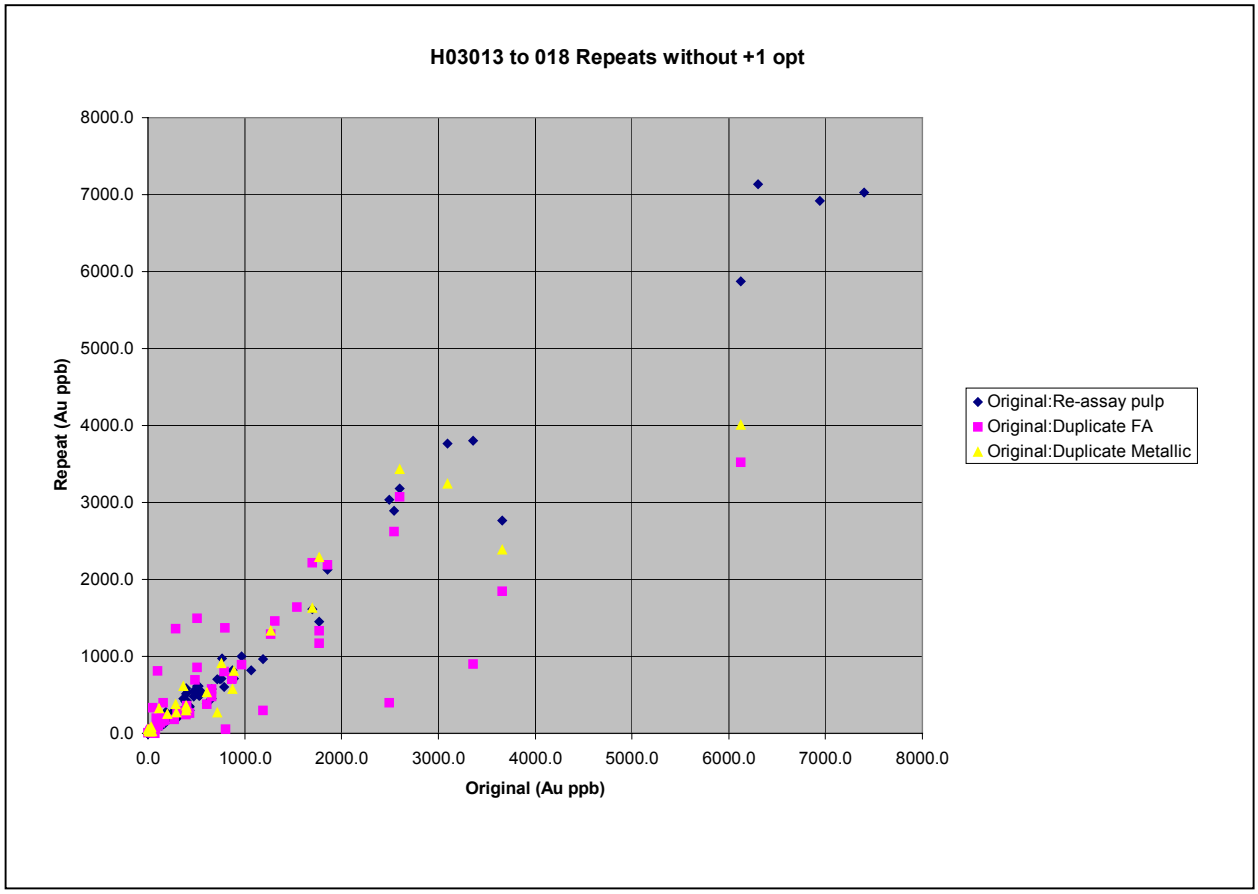
General Comments

Ground water increases dramatically within the main mineralized zone, often increasing by 2 to 10 times over a few feet. The mineralized fault zone has had multiple periods of movement, as shown by vein textures (multiple stages of quartz deposition, brecciation and healing with quartz, and late crackling filled with clay +/- free Au). There may have been more recent movement, which broke up the zone further and allowed ground water to flow more easily through it. The high flow of water creates a sampling problem for R.C. drilling, and will require careful attention to mud while core drilling. However, the high water content may make inexpensive VLF-EM a valuable tool to trace the main structure.

Dacite dikes are abundant in the mineralized zone. Although the exact relationship to Au mineralization is not clear, it appears the mineralized zone is related to a long-lived structure: early dikes followed by barren then productive quartz veins, followed by local shoots with high-grade Au + Ag associated with clay-rich fractures on either side of earlier quartz veins. There was some post-mineral movement, as shown by the cross fault and suggested by the high flow of ground water within the mineralized zone.

Metallic screen assays show higher grades in the coarse fraction than in the fine fraction, which is consistent with the presence of tiny flakes of free Au panned from H02010 last year. Also, tiny flakes of Au were panned from the cyclone reject stream after drilling was complete at holes H03013, H03014 and H03015. The presence of free Au can be problematic; however, comparison of our metallic screen assays with original samples during 2002 and 2003 drilling shows that our rigorous sample prep is adequately handling the coarse gold.

To check the quality of assays, various types of repeats were performed. Re-assays of individual pulps show good reproducibility (see graph below), consistent with findings from last year's program. Duplicates show much more scatter. No gross inaccuracies are indicated by the standards and no lab contamination is indicated by the blanks.



Conclusions

This limited drilling campaign accomplished several important goals:

1. The continuity of high-grade mineralization was established down the H02010 shoot.
2. The geometry of the shoot was delineated.
3. The dip of the vein is steeper than we believed based on last year's holes. The main vein dips 70-80 degrees, meaning H02011 ended a few hundred feet short of the main mineralized zone. Holes H02007, H02012, and H02006 may have also stopped short

of the main mineralized zone, which would make their interesting intercepts hangingwall veins.

4. The ability of the mineralization to blossom out at lithologic contacts was established.
5. The postulated H02005 shoot was not encountered and the southerly dip of the cross fault may put any such shoot mainly in the north block. This region should be tested with core as an offset of H02012. The drill holes in the south block support mineralization increasing in intensity with depth. The relatively strong hangingwall mineralization in H02006 is encouraging and may indicate the main vein is better mineralized at depth in that area. Mineralization is not closed off to the SE.
6. Only the upper portion of this hydrothermal system has been encountered to date; the main zone of boiling should lie deeper. Vein textures (quartz after calcite, multiple stages of brecciation and healing, vugs lined with quartz crystals), alteration (lack of epidote), and geochemistry (lack of any anomalous base metals) all suggest a high level of the system. There is an overall increase in the amount of Au and Ag with depth, both in grade and number of veins, suggesting the hydrothermal system is becoming more robust with depth.
7. Removing H02011 from the long section because it is too short (and possibly H02007 and H02012) shows the main mineralization is untested below ~600' from the surface.
8. An attached Excel spreadsheet contains significant Au and Ag intercepts.

Recommendations

1. The next phase of work should explore down dip of the region between H02012 and H03014, particularly down the plunge of the H02010 shoot. This program would test a portion of the B zone with R.C. drilling, then after setting casing, continue drilling with core through the A zone. It may be possible to re-enter and wedge off of holes H02011 and H02012.
2. Examining the drill data in a 3-D program, such as Vulcan or Gemcom, would greatly assist in planning the deeper holes.
3. Exploration R.C. holes should test the NW Target. VLF-EM may assist in refining these drill targets, as outcrop is limited. A bid has been solicited to conduct an orientation VLF-EM survey over the Main Highland Target.
4. Exploration R.C. holes should test along the strike of the A and B zones approximately every 400', intersecting the zones within ~600' of the surface. Water flow makes sample quality questionable with R.C. below this level. The presence of +0.1 opt Au intervals and low Ag:Au appear to be good indicators of proximity to high-grade shoots. VLF-EM may be useful in refining drill targets.
5. Should VLF-EM prove useful at the Main Highland target, surveys should be run at other targets. One interesting target would be the high-level veins at the Big Hammer Target, which contain anomalous Au generally in the range of 0.01-0.02 opt with one high-grade assay of 0.4 opt Au. The veins are related to an exogenous volcanic dome complex.

Blanks

SAMPLES	Au FA30 ppb	Ag ICP-2A ppm
H03013 003	<3	<0.1
H03013 503	<3	<0.1
H03014 003	16	<0.1
H03014 303	<3	0.2
H03015 003	<3	<0.1
H03015 803	<3	
H03016 003	<3	<0.1
H03016 403	8	<0.1
H0317 3	<3	0.1
H0317 403	<3	<0.1
H03018 003	5	<0.1

Low-grade Standards

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Ag ICP-2A ppm
H03013 403	402		3.4
H03014 603	1069	824	80.5
H03015 303	518	539	3.2
H03016 373	384	417	3.2
H017 283	338		3.7
H03018 203	313		3.9

High-grade Standards

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Ag ICP-2A Ppm
H03013 203	6300	7137	8.1
H03015 703	7400	7024	7.9
H03016 553	6940	6915	8.2
H017 603	7190		8.0
H03018 403	7150		7.9