Title page

Geology and Mineral Potential of the Akordat Gold – Copper Exploration License, Western Eritrea: Progress Report

An internal report for
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Taninay gold prospect looking south: a 2-5 m-thick gold-quartz vein with goethite after pyrite locally, extending for >1 km

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Executive Summary

On February 27, 2009, London Africa was granted a prospecting license of 1562 km^2 in the Akordat area of western Eritrea. Over the last 1.5 years, the company has conducted geological mapping, prospecting, soil geochemical surveys and one gravity survey in prospective areas selected on the basis of their Landsat and Aster imagery. Following a year of assessment on the ground, London Africa applied for an exploration license for an area reduced by 25% from the original prospecting license area. The Eritrean government granted the Akordat-Orota exploration license on June 23, 2010, for an area of 1169km^2, for three years. The expenditure commitments are approximately $US 0.5 million in Year 1, and an additional $US 1.5 million over the following two years.

This report reviews the progress made by the company over the last 1.5 years on the exploration license area, herein termed the Akordat license area, and gives recommendations for advancing the mineral potential of the property.

Ground work has located six new orogenic vein gold occurrences, and one stratiform base metal occurrence, including, from north to south: Yakare (Au, Ag, with base metals locally), Kofot – Gerger (Cu, Au), Melih (Au), Hawagu (Au), Taninay (Au), Engerne (Au), and Garsay – Ketin (Au). The most significant results of 129 grab samples taken within the exploration license are as follows: **Gold**: 12 samples from 5 – 231 ppm Au, 16 samples from 1-5 ppm Au, and 21 samples from 0.3-1 ppm Au; **Copper**: 7 samples from 0.5 to 4.5 wt. % Cu, 12 samples from 0.1 to 0.5 wt.% Cu. A breakdown of the significant assays is given by prospect in Table 1.

Table 1. Summary of significant gold assays on Akordat exploration license, 09-2010.

Prospect name	UTME	UTMN	Range of significant gold assays, in ppm	n	# samples in prospect area
Yakare*	382120	1777041	0.31 - 2.56	4	9
Kofot*	379835	1768077	0.32 - 2.26	6	22
Gerger - Au*	379411	1766071	0.32 - 4.58	3	15
Gerger - Cu		*Cu, in wt.%*	*0.76 - 4.53*	6	15
Melih South	381580	1744016	0.32 - 1.52	2	2
Hawagu*	383404	1739810	0.66 - 5.2	4	5
Taninay*	388486	1731508	0.32 - 4.39	12	15
Taninay - Adikieray*	388882	1730324	11 - 15.5	3	4
Awlet	389461	1728801	0.37	1	3
Tablet	389276	1726907	231	1	1
Engerne - Adinjera	399143	1725423	5.9	1	1
Engerne*	394979	1716852	0.75 - 100.9	10	17
Engerne-West	395081	1715067	1.7	1	5
Garsay-Ketin*	392679	1714899	31.8	1	4

*More significant prospect.

Early detection of significant copper and gold mineralization at Kofot – Gerger warranted a follow-up soil survey, a gravity survey, initial geological mapping and further prospecting. A skarn-like stratabound garnetite unit has high values of copper and gold in the southern half (Gerger area) of this prospect, proximal to a late- to post-tectonic granodiorite intrusion. The garnetite is within a mafic tuff dominated stratigraphic section that includes magnetite- and hematite-bearing siliceous iron formation, with a broad geological setting akin to the Besshi VMS district in Japan, or the mafic – siliciclastic VMS setting (Barrie and Hannington, 1999). Although there garnet is associated with some VMS-related exhalites at higher metamorphic grade (e.g., Broken Hill, Australia; Geco, Ontario, Canada), the presence of carbonates in the stratigraphy nearby as well as a late- to post-tectonic granodiorite intrusion immediately to the east of the garnet occurrence would suggest that skarn mineralization is more likely.

A gravity survey has been conducted over the Kofot – Gerger area. The survey detected several areas of terrane-corrected, positive residual Bouger gravity anomalies with greater than 0.5 mgals. These anomalies are adjacent to, and partly coincident with copper soil anomalies, high Cu-Au prospecting samples, and with topographic highs underlain by more dense basalt. The nearly coincident gravity anomalies with enriched copper in soils is encouraging, however there is a possibility that the gravity anomalies are due to extra mass from the basalt ridges.

Ground work on the other prospects has included initial geological observations and prospecting of quartz gold veins, and a soil survey at Melih.

Recommendations

The following recommendations are for Year 1 of the exploration license tenure.

Geophysics:

- Given challenging logistics in several areas within the property, and that ~30% of the property is under a thin veneer (meters thick) of alluvium or river gravels, a helicopter-borne geophysical survey (200 m line spacing) for electromagnetic, magnetic and radiometric signatures should be considered for the entire property.

- If the Year 1 budget does not allow for helicopter-borne geophysical surveys, then a ground EM geophysical survey should be conducted over the Gerger Cu-Au prospect, and ground IP surveys should be considered for the Taninay and Engerne vein gold prospects.

- For the Kofot – Gerger gravity data, a 3D inversion modeling exercise that considers variable topography and variable densities of rock types should be conducted to determine whether buried massive sulfide bodies or more dense basalt ridges account for the positive gravity anomalies.

Geology, Prospecting

- Further work at Kofot-Gerger should include more detailed geological mapping and prospecting, further whole rock geochemistry of the host volcanic-dominant stratigraphy (including analyses for Zr and Y), and petrography to identify the mineralogy and mineral chemistry of the skarn minerals in the copper-gold occurrences. All geological maps should have structural geological information e.g., bedding, foliation, lineation, folds and faults portrayed. The soil survey located anomalous arsenic in the SE part of the grid corresponding to an area of quartz veins; this area should be prospected for orogenic vein gold.

- Further prospecting and detailed geological mapping are warranted for the Teninay and the Engerne – Garsay-Ketin – Degesey vein gold prospects. Further prospecting is warranted for the Yakare gold-base metal veins in the north of the property. All vein gold occurrences need to have wallrock tested for gold to see if significant additional mineralization is present adjacent to the veins. For orogenic vein gold occurrences, vein widths and sample numbers should be located on maps, with inset tables giving assay results.

- The Orota area in the northern part of the property should be prospected.

- Prospecting of remaining Landsat and Aster anomalies should be conducted in the area north of Engerne, and in the remainder of the property.

Introduction

Since the discovery of the Bisha volcanogenic massive sulfide (VMS) deposit in 2003, and more recently the Koka orogenic gold deposit, it has become apparent that western Eritrea is highly prospective for greenstone-hosted base and precious metal deposits. Soon after the Bisha (40 MT global Zn-Cu-Au-Ag resource, including 1 M. oz. Au in oxide zone at surface) discovery, three other VMS deposits: Bisha Northwest, Harena and Hambok were discovered nearby, and increased exploration activity has located a half-dozen other promising base and precious metal occurrences in the region.

Given these recent exploration successes, London Africa applied for, and was granted a large prospecting license in February 2009 in the Akordat area of western Eritrea. During the following year and a half, the company conducted geological mapping, prospecting, soil geochemical surveys applied for an exploration license for an area reduced by 25% from the original prospecting license area. The Eritrean government granted London Africa an exploration license (1169km^2, Fig. 1) on June 23, 2010. This report reviews the progress made by the company over the last 1.5 years on the exploration license area, herein termed the Akordat exploration license, and gives recommendations for advancing the mineral potential of the property.

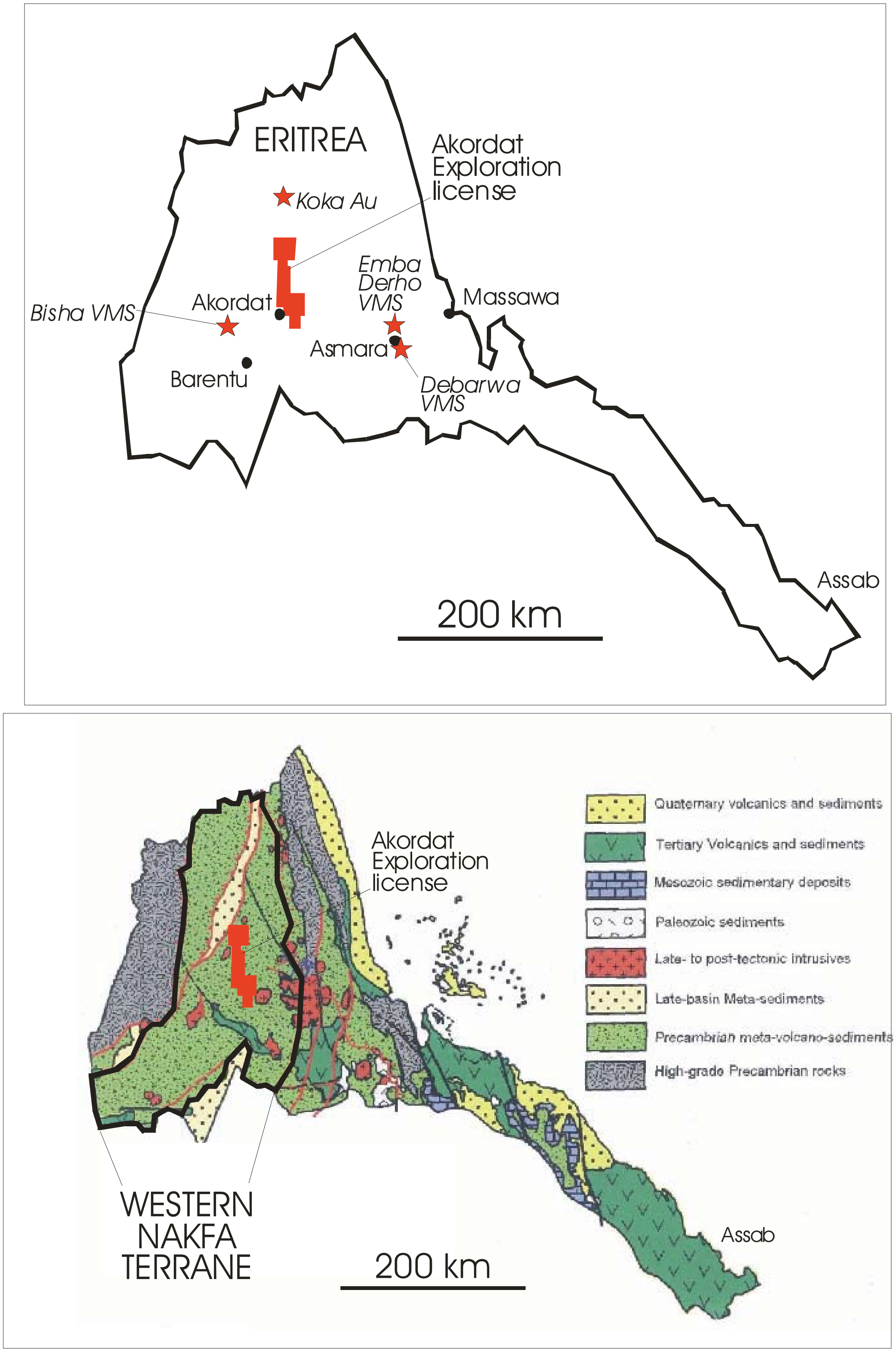


Figure 1. Location of the Akordat exploration license in western Eritrea. Above: license area with major deposits and towns. Below: license area within the western Nakfa terrane.

The strata of western Eritrea comprises primitive to evolved volcanic arc sequences that are cut by mafic to felsic intrusions, and have undergone accretion and cratonic assembly in Neoproterozoic to Cambrian times (from ~800 Ma to ~500 Ma). The volcanic and sedimentary strata, and perhaps 50% of the mafic intrusions and granitic plutons are ~800-720 Ma, whereas late- to post-tectonic granitic intrusions are ~550-480 Ma (Barrie et al., 2007, and unpublished data). The western Nakfa terrane volcano-sedimentary assemblage that is host to the Bisha VMS district stretches from northern Ethiopia into northeast Sudan, across much of western Eritrea.

Akordat Exploration License

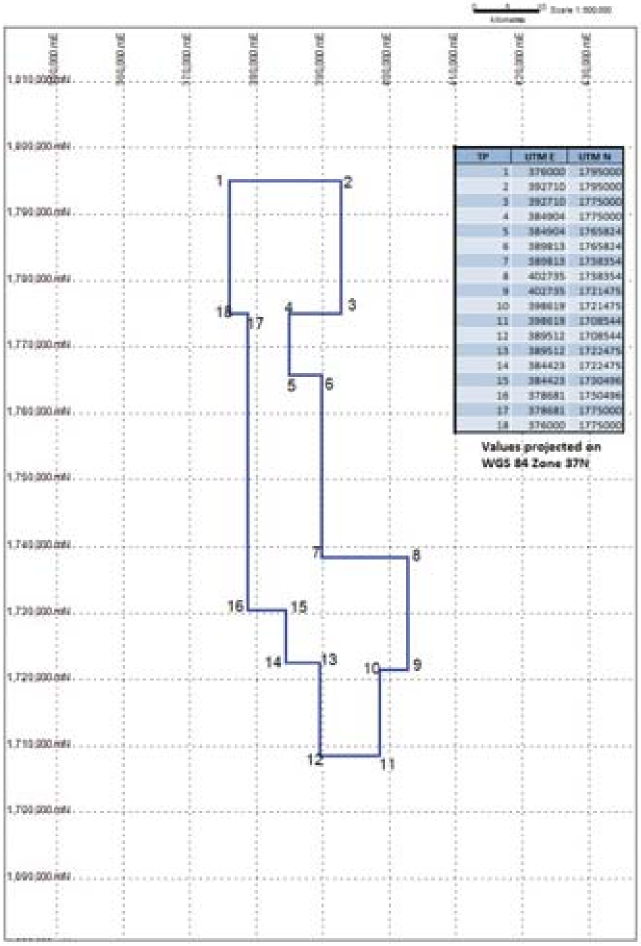
Location

The exploration license is located north of the town of Akordat in western Eritrea. It is 85 km from north to south and up to 13 km in an east-west direction. The turning points that define the boundaries are given in the table in figure 2.

Geology

The Akordat exploration license is in the center of the western Nakfa terrane, and between the Bisha VMS district to the southwest and the Koka orogenic gold deposit to the north (Figs. 1, 3). In broad terms, the Neoproterozoic volcanic-sedimentary strata (~800-750 Ma at Bisha: Barrie et al., 2007) are N- to NNE-trending basalt, andesite and dacite flows and tuffs, and their volcaniclastic equivalents, with a minor component of calcareous marble, shale and siliceous iron formation. These strata are adjacent to and probably partly underlain by mafic to felsic intrusions, some likely coeval with the strata. There may be remnants of a granitic gneissic basement, but at present little is known about the nature of the regional granitoid rocks. These rock units are cut by late- to post-tectonic granodiorites and granites (possibly ~550-500 Ma), which appear as nearly circular intrusions (e.g., Orota area in northern part of license area).

The strata have been subjected to E-W to ESE-WNW compression, and locally to dextral transpression. The age of deformation is not known, however in greenstone belts elsewhere such deformation is 15-60 Myrs after the formation of the youngest strata (e.g., Abitibi Subprovince, Yilgarn craton). The metamorphic grade ranges from prehnite-pumpeyllite to mid-greenschist facies, with some possible remnants of upper greenschist facies in the Taninay area (e.g., cordierite schist, staurolite schist, possible kyanite schist).



TP	UTM E	UTM N
1	376000	1795000
2	392710	1795000
3	392710	1775000
4	384904	1775000
5	384904	1765824
6	389813	1765824
7	389813	1738354
8	402735	1738354
9	402735	1721475
10	398619	1721475
11	398619	1708544
12	389512	1708544
13	389512	1722475
14	384423	1722475
15	384423	1730496
16	378681	1730496
17	378681	1775000
18	376000	1775000

Values projected on WGS 84 Zone 37N

Figure 2. Location of the Akordat exploration license in UTM coordinate system WGS84 37N. The turning point coordinates are given in the table (inset).

Mineralization

There are two types of mineralization on the property: orogenic vein gold mineralization in at least six prospect areas, and skarn copper-gold mineralization in one prospect area. There is also potential for VMS mineralization similar to the deposits in the Bisha area.

Prospect areas

There are seven prospect areas that have been located on the property during prospecting and initial exploration, and are shown in figure 3. From north to south, they are: Yakare (Au, Ag, with base metals locally), Kofot – Gerger (Cu, Au), Melih (Au) and Hawagu (Au), Taninay (Au, including Taninay, Taninay East, Gusti, Tablet, Awlet, and Adikieray); Engerne (Au, including Engerne and Engerne Wast), and Garsay – Ketin (Au, including Degesey). In total, 129 rock chip samples have been taken from these and other prospect areas within the license area. A summary of the more significant assays is given in table 1.

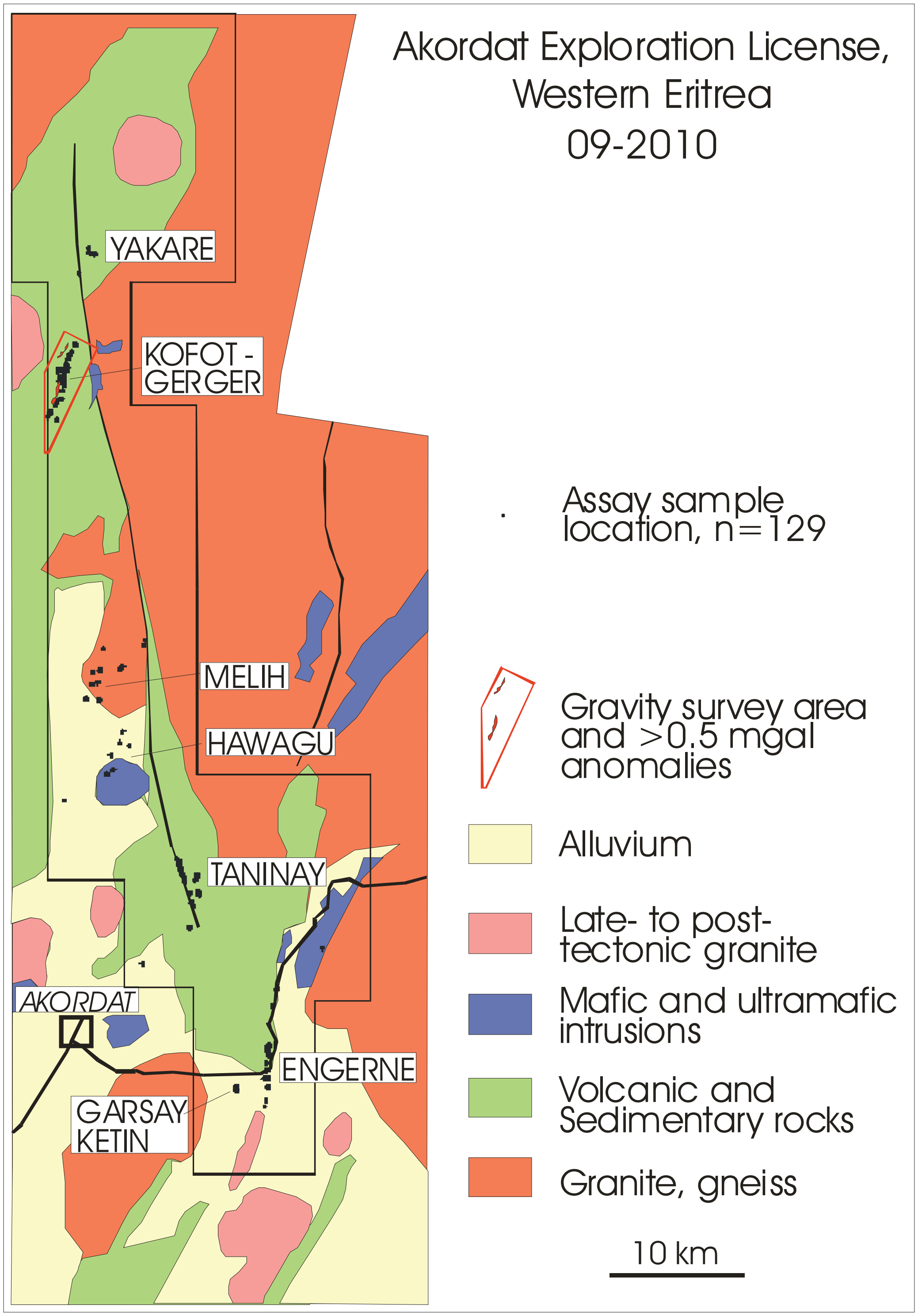


Figure 3. Lithologic map of the Akordat exploration license with locations for the main prospects, and sample locations. All of the prospects are vein gold occurrences, except for Kofot –Gerger which is a stratabound copper-gold occurrence.

Yakare

The Yakare orogenic vein gold prospect is located within and surrounding the Yakare village in the northern part of the license area (Fig. 3). It is 17 km NE of Himbol village, and 5 km north of the Kofot VMS prospect.

Geology

The Yakare orogenic gold veins are oriented N-S and are associated with granitic dikes that cut volcanic and sedimentary rocks. The strata are intercalated mafic, intermediate and felsic tuffs, stratabound FeOx-clay altered units, basalts, exhalites, laminated-carbonaceous units and calcareous sedimentary rocks. There is prominent iron oxide staining and deposition along fractures within the granitic dikes, the veins and in the host strata. Additionally, sericite, carbonate and potassium feldspar alteration are common proximal to the veins.

Mineralization

The gold quartz vein system at Yakare is up to 300 m wide and extends for ~600 min a N-S direction. Individual veins are 2-4 m-thick, and weather to high relief. There has been considerable artesanal activity in the recent past, with mercury amalgam recovery. These artisanal workings are considerable in size, with some at 2-3 meters depth.

The mineralization in the Yakare gold quartz veins has a greater base metal component than those of the southern part of the license area. Coarse-grained galena and chalcopyrite accompany fine- to coarse-grained pyrite locally.

Results

Nine samples of vein material have up to 2.5 g/t Au, accompanied by copper up to 0.8 wt.% Cu and 5.2 wt.% Pb (table 2).

YAKARE					Au-AA25	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
E_UTM	N_UTM	Sample Number	Location	Sample type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		229	Yakare	Vein		0.5	478	12	12	6
		230	Yakare	Vein		<0.2	633	21	17	3
		85	Yakare	Vein	0.32	1	633	11	316	<2
		254	Yakare	Vein	0.31	0.02	0.53		0.01	<10
		253	Yakare	Vein	0.39	0.22	4.38		0.05	<10
		255	Yakare	Vein	0.06	0.27	19.8		0.01	<10
		84	Yakare	Vein	0.14	0.5	152	6	153	4
		83	Yakare	Vein	2.56	58.6	8340	7	51700	4
		256	Yakare	Vein	0.05	0.15	8.77		0.02	<10

Table 2. Yakare assay results from grab samples, 09-2010.

Kofot-Gerger

The Kofot – Gerger area is ~10 to the NE and E of Himbol village, in the northern half of the license area. It is located about 75km NE, along the regional trend of the Bisha VMS deposit and approximately 60km south of Chalice Gold Mines' Koka Gold deposit (Figs 1,3).

The Kofot-Gerger area has seen the most exploration by London Africa during the first year of activity, due to early detection of significant gold and copper. High copper values in particular were initially considered to reflect a potential VMS system; however further work indicates that skarn mineralization is equally likely as a genetic model for the mineralization. The company conducted a 200 m x 200 m grid soil survey of 425 samples, and a gravity survey in the same area. The results of these surveys are given below along with prospecting assay results.

Geology

In the Kofot – Gerger area, volcanic and sedimentary rocks extend 6-12 km wide E-W between the Debir Sala granitic terrain to the east, and granitic terrain to the west (Fig. 4). Within the volcanic and sedimentary strata, gabbro complexes, late- to post-tectonic granitic intrusions and associated dikes constitute a significant volume of the bedrock (Fig. 4). The volcanic rocks include, from west to east: a mafic volcanic package west of the main prospective trend; an intermediate volcanic zone includes siliciclastic fragmental tuffs, ash tuffs, pyritic dacite flows, and intercalated marble, cherts, carbonaceous shale units up to 50m thick, and a late- to post-tectonic granodiorite intrusion to the east (Fig. 5). The general strike of the rock fabric is 20°NE dipping to the East at an angle of 80°.

Magnetite/hematite siliceous iron formation units up to 5 m-thick are present in the Kofot area to the north, whereas Cu- and Au-bearing garnetite units up to 2 m thick are present in the Gerger area to the south, as well as lean iron formation units up to 5 m-thick. Gossans are developed over both garnetite and iron formation, and have malachite at surface in numerous areas. The mafic strata in the vicinity of the garnetite and the iron formations in both the Kofot and Gerger areas and areas in between have moderate chlorite alteration (see whole rock geochemistry, Appendix 3). In the Gerger area, a late- to post-tectonic granodiroite intrusion is present immediately east of the Cu Au- enriched garnetite and gossan occurrences.

Mineralization

(This section is paraphrased from field report by A. Ifrihim, 05-2010):

At Kofot, multiple Fe rich gossans and magnetic exhalite horizons were encountered along on a chlorite altered felsic volcanic rocks intercalated with calcareous-sediment package. Significant chlorite alteration can be noted on the West of the main zone. The main zone has intense epidote alteration. East of the main zone is characterized by wide zone of intense sericitization and FeOx alteration with stringer type as well as fracture controlled mineralization (Fig. 4).

At Gerger, thin Fe rich gossans ,magnetite and garnetite are the characteristic units in the Gerger horizon. Notable malachite rich gossan as well as Garnetite packages ware encountered about 2km south of Kofot. The Gerger Prospect is about 5-10m mineralized zone which was traced for about 3km. the system is intruded by younger grano-diorite unit to the south. Chlorite alteration can be noted on the West of the main zone. The main zone has intense silica alteration and malachite rich stringer- like systems. East of the main zone is intruded with a semi conformable 500m x 3km granodiorite unit. It cuts the main zone to the south.

The geology of the area under consideration is made up of volcaniclastic rocks, meta-sedimentary rocks, syn-tectonic granite and post-tectonic intrusion package. The western part of the target area is occupied by mafic ash tuff. This unit is bounded by 50m thick thinly foliated light yellowish-brown slate unit, to the east. The central part of the area which is characterized by ridge topography and gossan as well as garnetite outcrop is dominated by the chlorite altered ash tuff and less commonly basalt unit. This unit has incorporated a package of meta-sedimentary units (marble, marl, chert and graphitic shale), pyritic dacite flow and epidote altered syn-tectonic granite. At the Kofot locality multiple of hematite-gossan and magnetic exhalite outcrops were encountered. The general strike of the rock fabric is 20°NE dipping to the East at an angle of 80°. The eastern flank of the garnetite formation is bounded by post-tectonic intrusion. Intense silicification and malachite enrichment was noted in this stratiform layer. The garnetite formation has an outcrop length of about 1.4km and south of it, NNE trending isolated lenses of hematite-gossan outcrop occupies for about 1.2km strike length. This sequence is cut by the younger intrusion along the southern part. The strata are also cut by thin ,70°NW trending quartz veins. East of the stratabound mineralization, at the Gerger area, the geology is dominated by intercalation of chlorite altered intermediate composition volcaniclastic rock and highly deformed hematite-sericite altered syn-tectonic granite with significant stringer mineralization. In addition, 500m east of the garnet bearing stratiform layer, a succession of NNE trending slate, lapilli-tuff, lithic-tuff and mafic tuff horizons stretching from West to East were observed , in about 120m wide area.

Results

At Kofot, Cu-Au malachite-bearing gossans are in an 800m x 100m area, that is a folded volcanic- exhalite/iron formation sequence. Surface samples taken from the zone have up to 2.26 g/t Au and 3% Cu. The system has coincident Au and Cu anomaly on the surface. At Gerger, malachite rich gossan+ garnetite samples from the surface have up to 4.58g/t Au and 4.5 wt.% Cu. Most of the surface samples have 0.2-0.5 g/t Au. Assay results for prospecting samples are given in table 3.

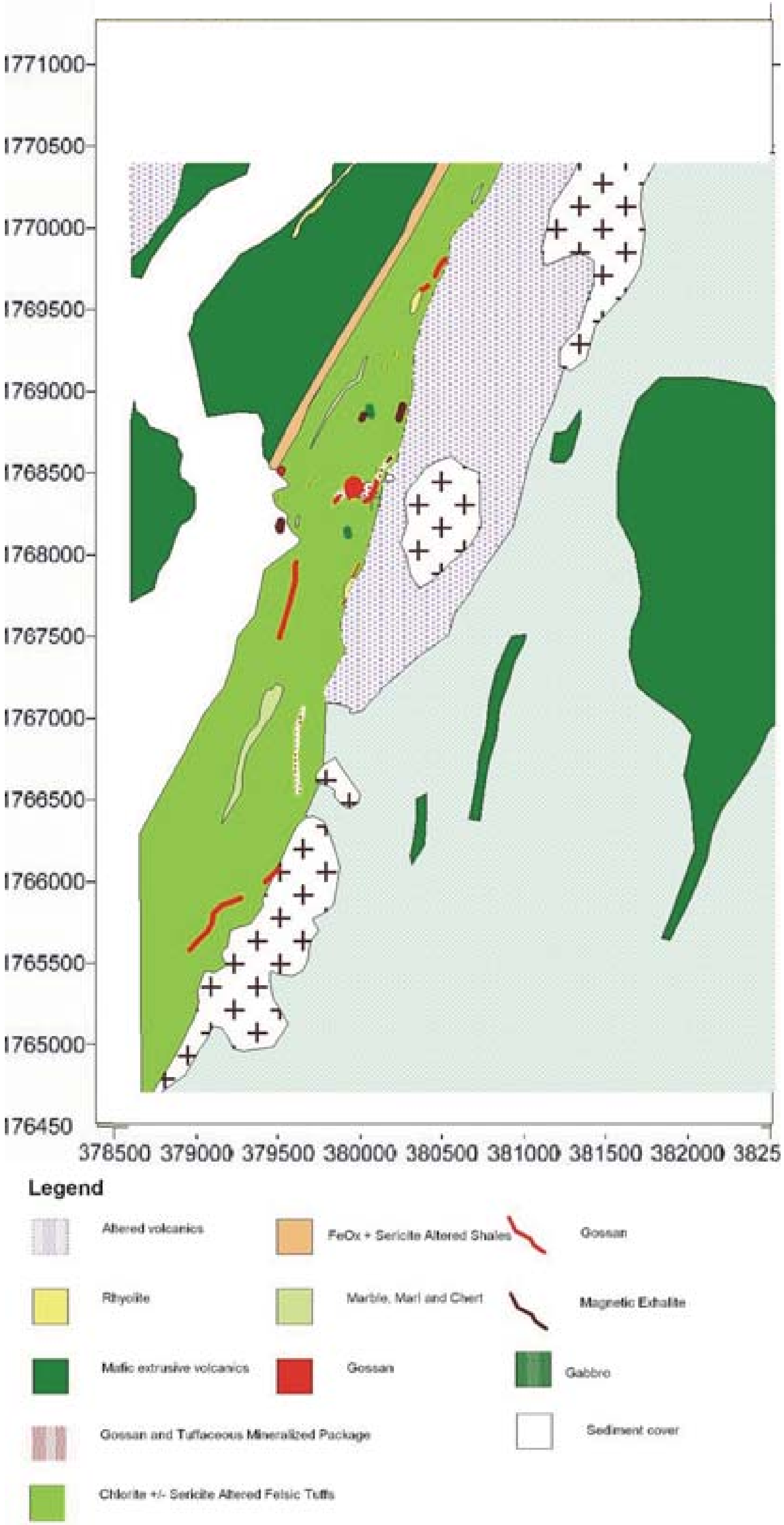


Figure 4. Preliminary lithologic map of the Kofot – Gerger area.

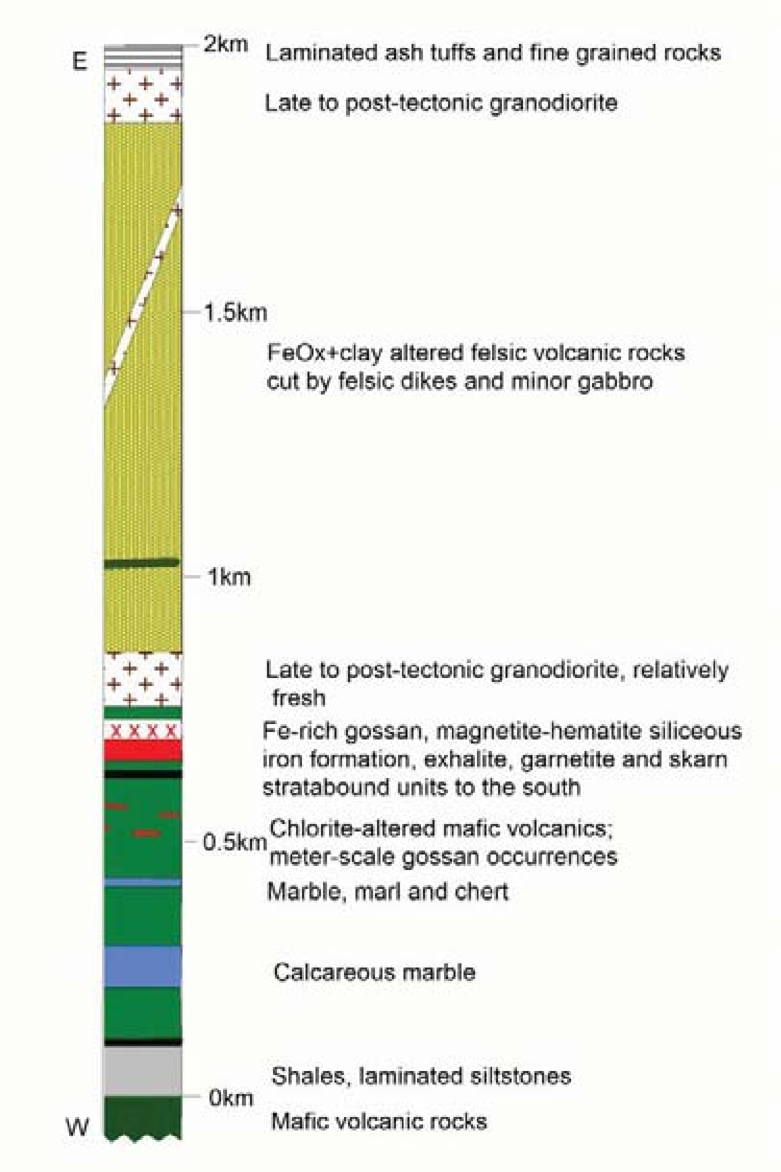


Figure 5. Generalized stratigraphic column for the Kofot - Gerger area.

Soil survey -Kofot – Gerger grid area

The Kofot – Gerger (Himbol) prospect area is located in the northern half of the property. The soil survey was carried out from April 29 to September 1, 2010 in the target area which covers a strike length of 8 km and average width of 3 km. The area is semi-arid, with minor vegetation cover over weathered bedrock. The terrane is dominated by a tabletop mountain ridge flanked to either side by rivers and low-lying, sediment-covered narrow plains. In most parts of the target area, outcrop predominates and the soil thickness is relatively thin, in contrast to the low plains which are covered by thick (1^{+}m) sediment. A total of 425 sampling sites were predetermined as fixed locations for the soil survey. Results of the Kofot – Gerger soil survey are shown in figures 6 to 10 as kriged, contoured plots, below.

KOFOT - GERGER

E_UTM	N_UTM	Sample Number	Location	Sample type	Au-AA25 Au ppm	ME-ICP41 Ag ppm	ME-ICP41 Cu ppm	ME-ICP41 Zn ppm	ME-ICP41 Pb ppm	ME-ICP41 As ppm
		116	Kebr-Umer	Vein	0.04	0.2	210	11	18	3
		115	Kebr-Umer	Gossan	0.04	1	2090	24	13	88
		250	Kofot	Gossan	0.187	1.5	2020	40	11	64
		252	Kofot	Gossan	0.016	<0.2	477	69	6	11
		251	Kofot	Gossan	0.074	<0.2	122	32	4	128
		249	Kofot	Gossan	0.018	<0.2	456	73	5	75
		248	Kofot	Gossan	0.018	<0.2	111	67	13	52
		246	Kofot	Gossan	0.011	3.9	56	36	7	30
		247	Kofot	Gossan	0.088	0.4	2310	98	6	13
		244	Kofot	Gossan	0.018	<0.2	2400	198	4	3
		113	Kofot	Gossan	0.03	<0.2	857	33	21	8
		314	Kofot	Gossan	<0.01	0.2	75	14	19	<2
		114	Kofot	Gossan	0.18	0.3	657	48	14	3
		243	Kofot	Gossan	0.073	0.4	614	18	9	266
		241	Kofot	Gossan	0.012	<0.2	653	48	3	14
		111	Kofot	Gossan	0.29	2.4	1630	43	19	52
		239	Kofot	Gossan	0.058	0.8	2730	106	3	16
		112	Kofot	Gossan	0.64	7.4	17000	179	16	29
		240	Kofot	Gossan	0.012	<0.2	393	160	2	35
		238	Kofot	Gossan	0.451	5.2	3470	222	6	99
		237	Kofot	Gossan	1.45	9.8	4700	140	8	83
		245	Kofot	Gossan	1.965	5.6	4310	260	12	109
		242	Kofot	Gossan	0.062	<0.2	2040	205	6	7

KOFOT – GERGER, cont.

Au-AA25	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41

E_UTM	N_UTM	Sample Number	Location	Sample type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		236	Kofot	Gossan	0.106	<0.2	255	56	4	31
		235	Kofot	Gossan	1.91	7.9	5610	229	51	67
		234	Kofot	Gossan	2.26	1.9	39800	65	4	50
		233	Kofot	Gossan	0.319	0.5	1010	34	<2	433
		313	Kofot	Gossan	0.05	4.5	353	81	<2	26
		232	Kofot	Gossan	0.058	<0.2	654	25	3	60
		312	Kofot	Gossan	0.06	1.1	1270	126	<2	7
		231	Kofot	Gossan	0.013	<0.2	261	56	7	6
		309	Gerger	Gossan	0.04	1.5	541	77	<2	13
		311	Gerger	Gossan	0.12	1.9	7600	159	5	5
		310	Gerger	Gossan	0.32	2.5	34900	281	<2	20
		308	Gerger	Gossan	0.44	2.9	3440	100	<2	228
		307	Gerger	Gossan	0.22	1.4	4800	88	<2	53
		306	Gerger	Gossan	4.58	7.2	45300	235	2	10
		305	Gerger	Gossan	0.23	0.2	1145	25	<2	2
		304	Gerger	Gossan	<0.01	0.2	68	28	9	6
		315	Gerger	Gossan	0.01	0.5	308	31	2	13
		303	Gerger	Gossan	0.02	1	712	27	<2	11
		302	Gerger	Gossan	0.01	1.1	563	60	<2	11
		301	Gerger	Gossan	0.01	0.9	208	20	<2	<2
		298	Gerger	Vein	0.01	0.3	286	12	5	8
		300	Gerger	Gossan	0.03	0.4	305	33	9	10
		299	Gerger	Gossan	0.01	1.1	1170	52	<2	13

Table 3. Kofot – Gerger assay results from grab samples, 09-2010.

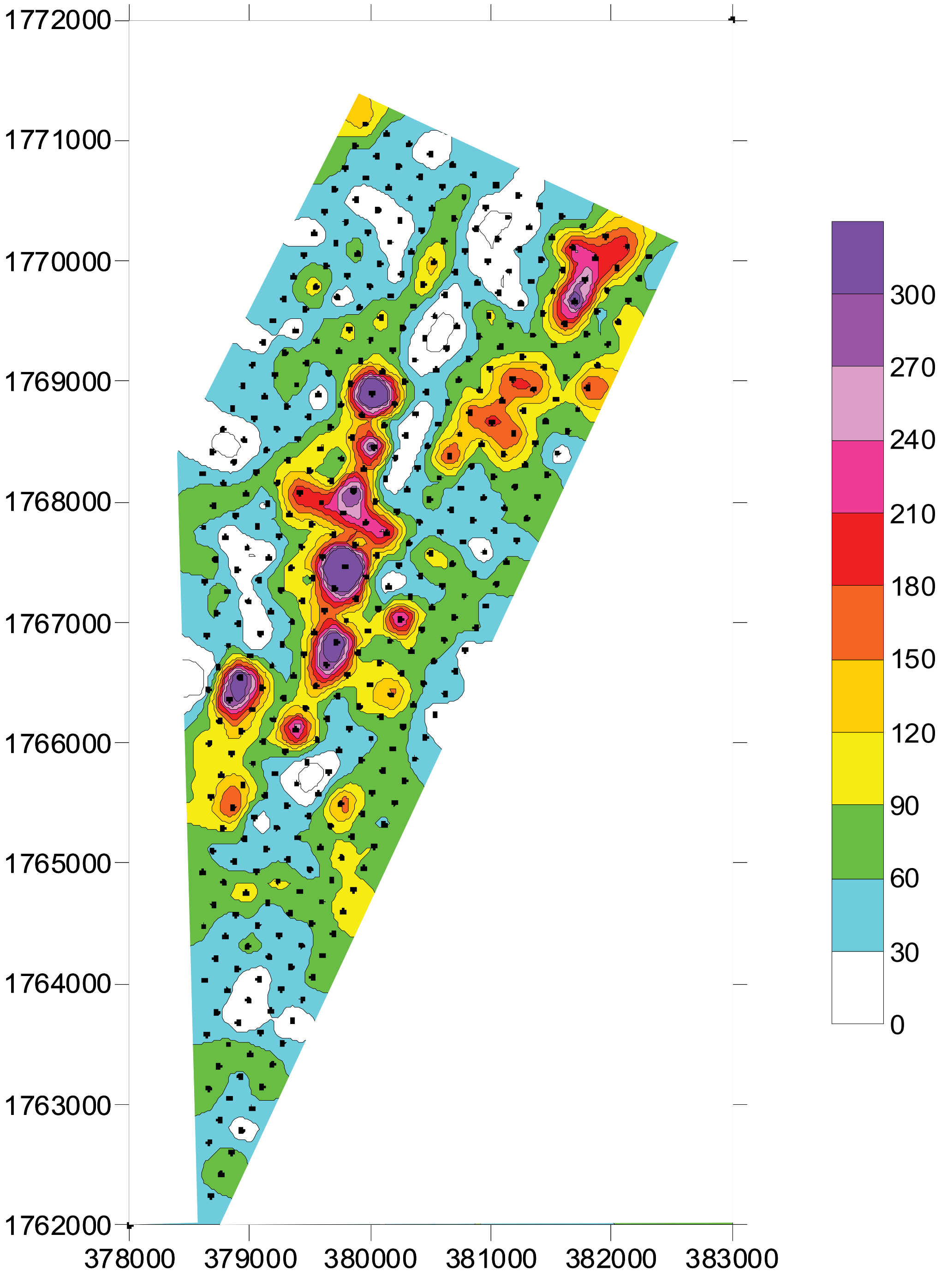


Figure 6. Kofot - Gerger soil grid results: copper in ppm. High copper values correspond to prospecting samples of garnetite, and gossan developed over magnetite hematite siliceous iron formation with malachite.

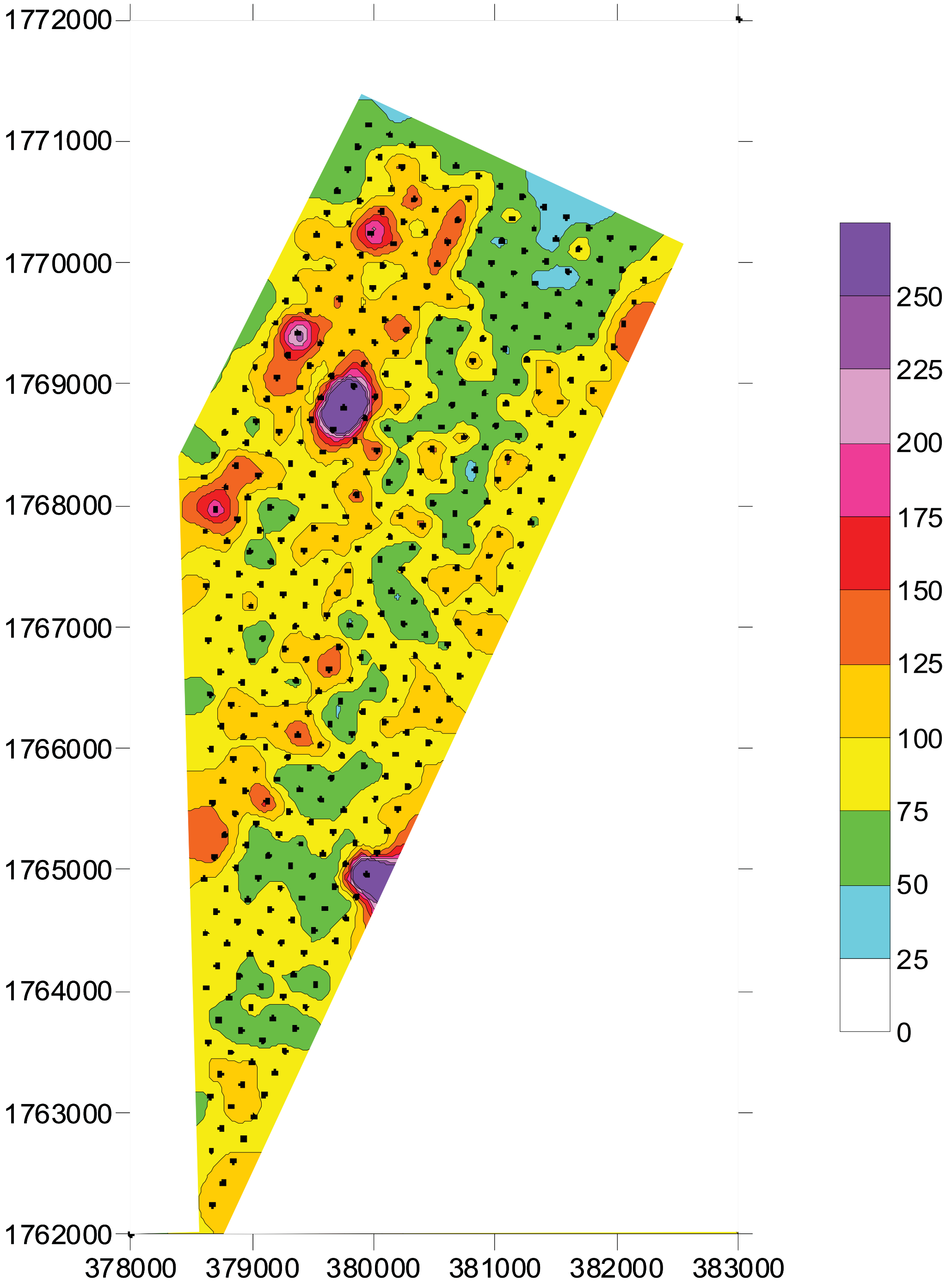


Figure 7. Kofot - Gerger soil grid results: zinc in ppm. The high zinc value is uphill and to the west 200 m from high copper values in soil, suggesting that Zn-Cu mineralization may be present in the southern Kofit area.

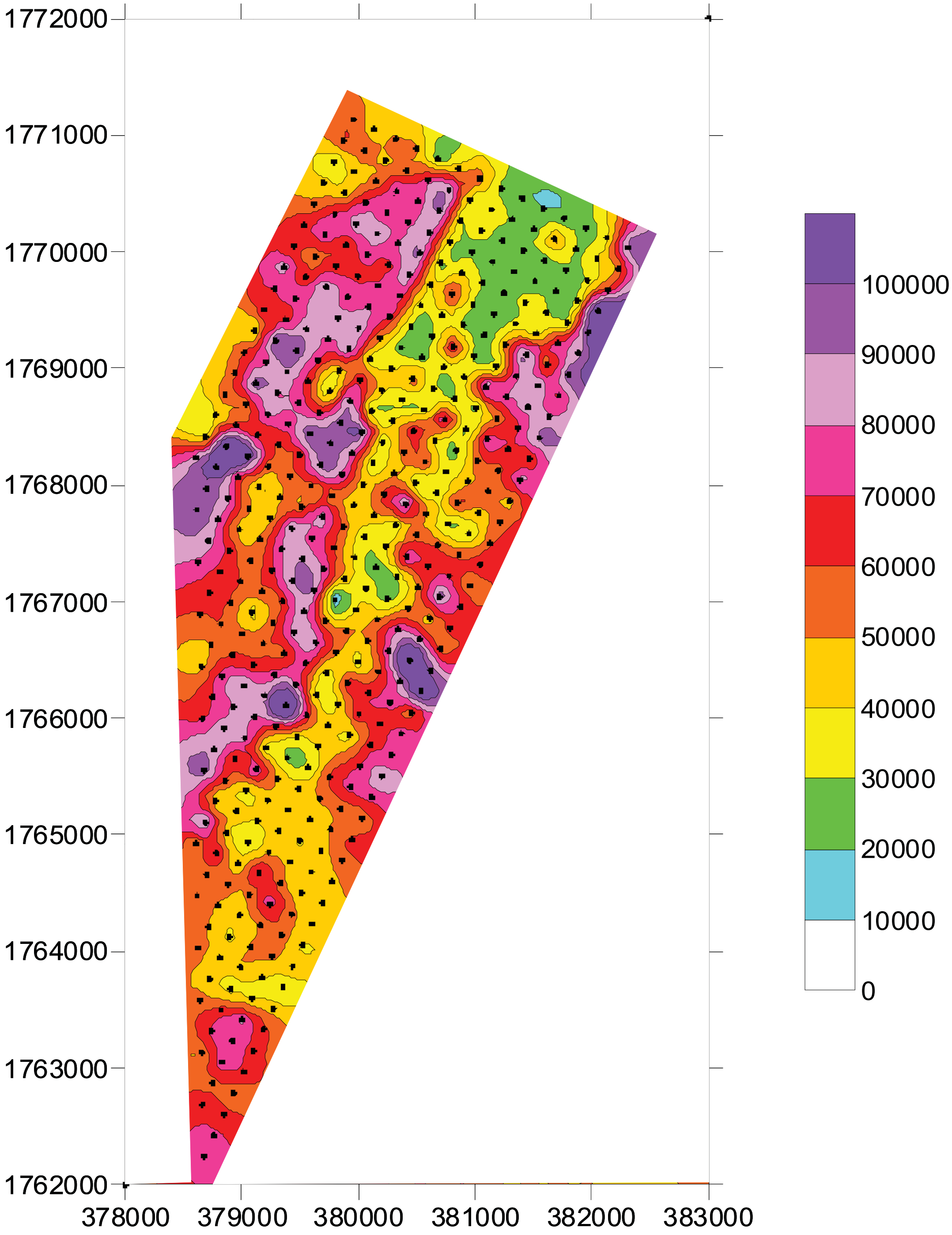


Figure 8. Kofot - Gerger soil grid results: iron in ppm. The high iron areas in the central NNE-trending band correspond to strata containing magnetite hematite siliceous iron formation, and related gossans. Further field work needs to be conducted to explain the other high iron areas to the west and east.

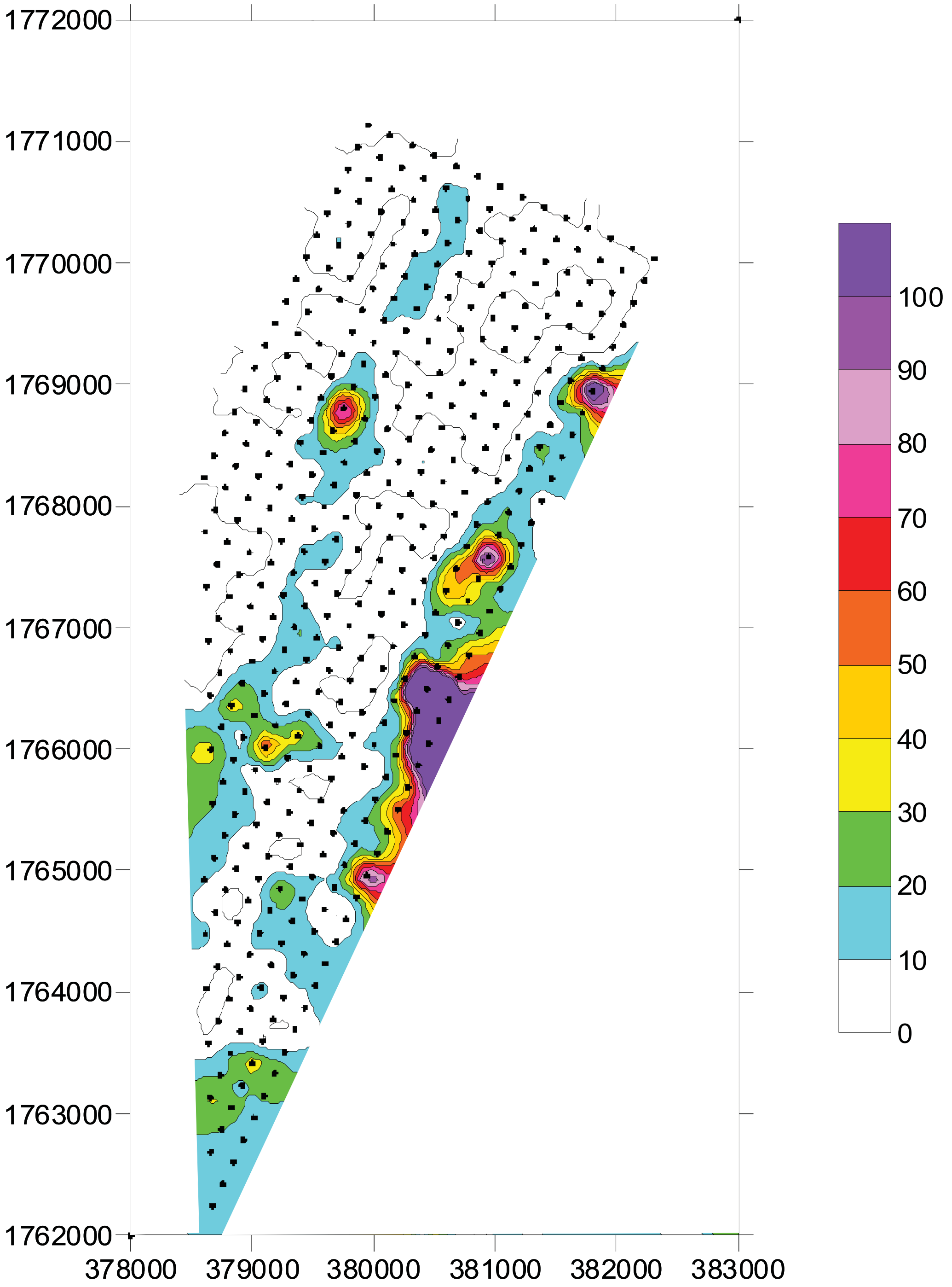


Figure 9. Kofot - Gerger soil grid results: arsenic in ppm. The arsenic anomalies along the eastern side of the grid correspond to areas with quartz veins that have yet to be prospected.

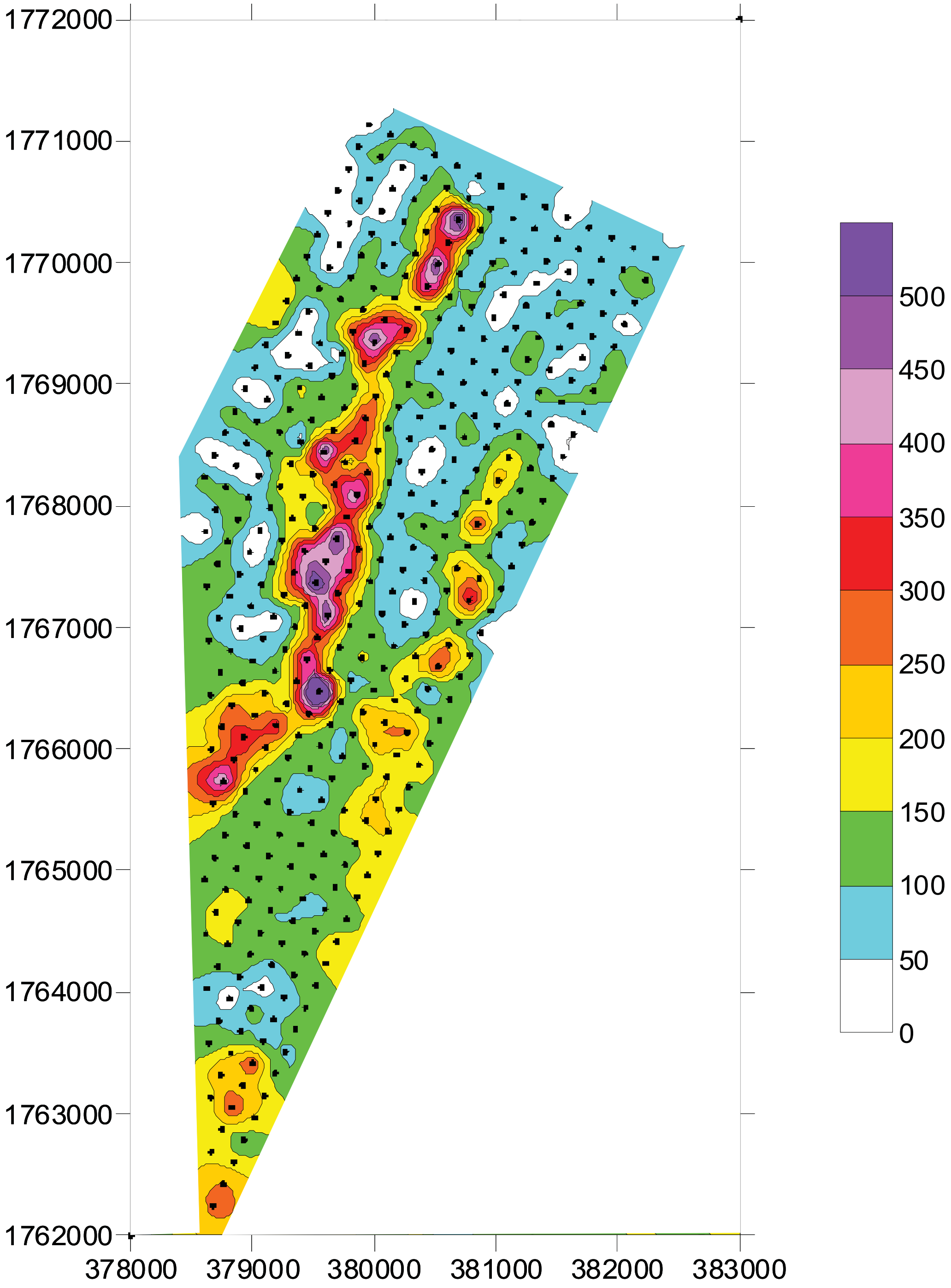


Figure 10. Kofot - Gerger soil grid results: nickel in ppm. High Ni values correspond to the chloritic mafic and intermediate tuff unit that contains the Gerger garnetite and Kofot - Gerger magnetite hematite siliceous iron formation.

Kofot Gerger gravity survey

A gravity survey was conducted in the same area as the soil survey at Kofot – Gerger, to test for potential massive sulfide at depth. Details of the gravity survey are given in a report by MHW Geosurveys (2010). The terrane corrected residual Bouger gravity is portrayed in figure 11, and the areas with a positive 0.5 mgal anomaly are superimposed on the geology of the Kofot Gerger area and on topography in figure 12. In figure 13, the positive anomalies are superimposed on the copper n soils contour plot.

The positive gravity anomalies correspond almost exclusively to mountain ridges, where basaltic rocks and also iron formation are present. During data processing, the gravity data are corrected for topography assuming a uniform, 2.67 g/cc density. For topographic highs underlain by more dense material such as certain basalts, this terrane correction leads to positive gravity anomalies. Nevertheless, the ridge top positive gravity anomalies are also proximal to copper in soil anomalies, and to Cu- and Au-enriched prospecting samples at the Gerger garnetite exposures. These areas need to be mapped in detail and prospected further.

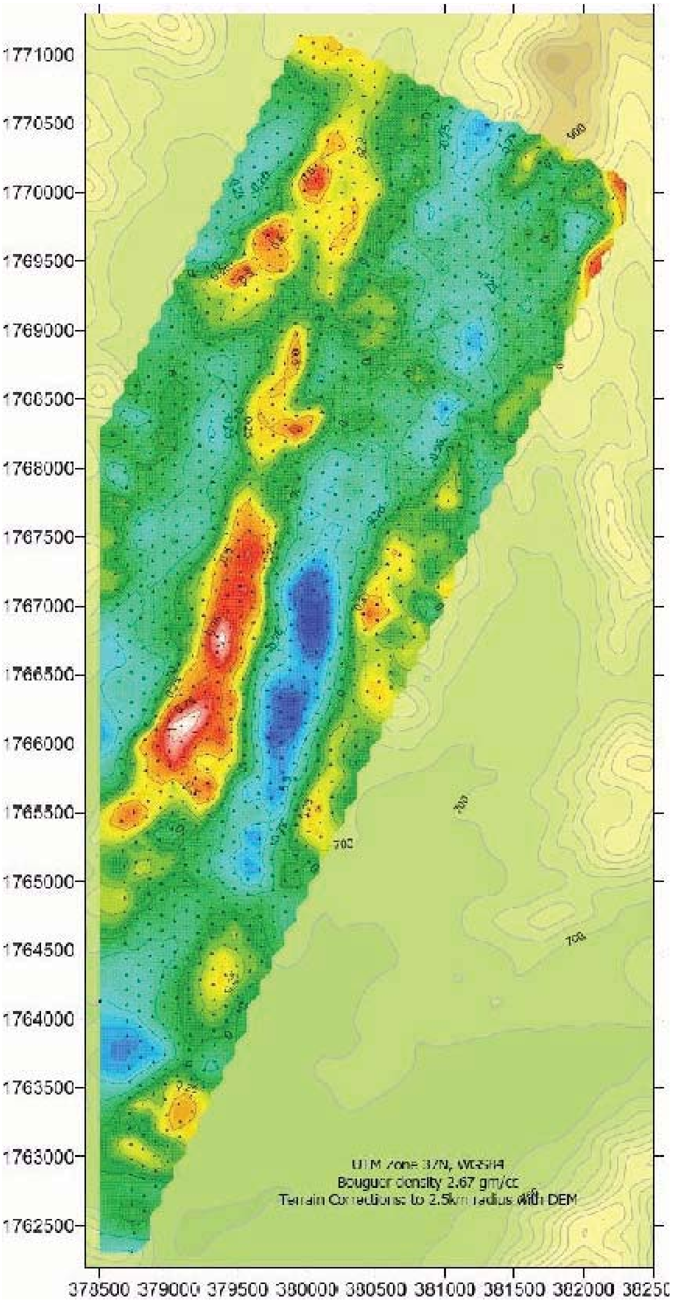


Figure 11. Residual Bouger gravity for Kofot – Gerger grid. Positive gravity anomalies of >0.5 mgal are in orange to red to white.

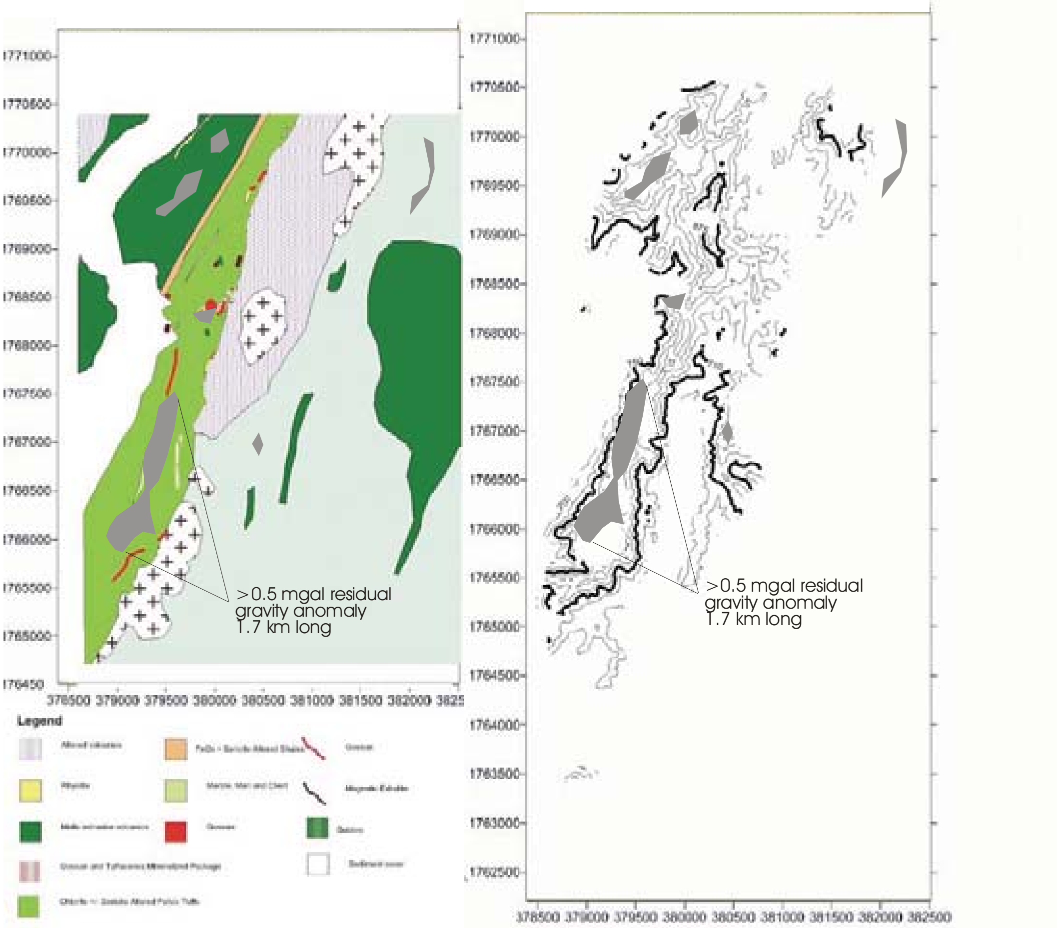


Figure 12. Kofot – Gerger area positive gravity anomaly plotted on geologic map (left), and on topography (right). Note that the positive gravity anomalies correspond to the light green (mafic – high Ni in soils)) tuff unit, and to the crest of the mountain ridges where these more dense rocks are found.

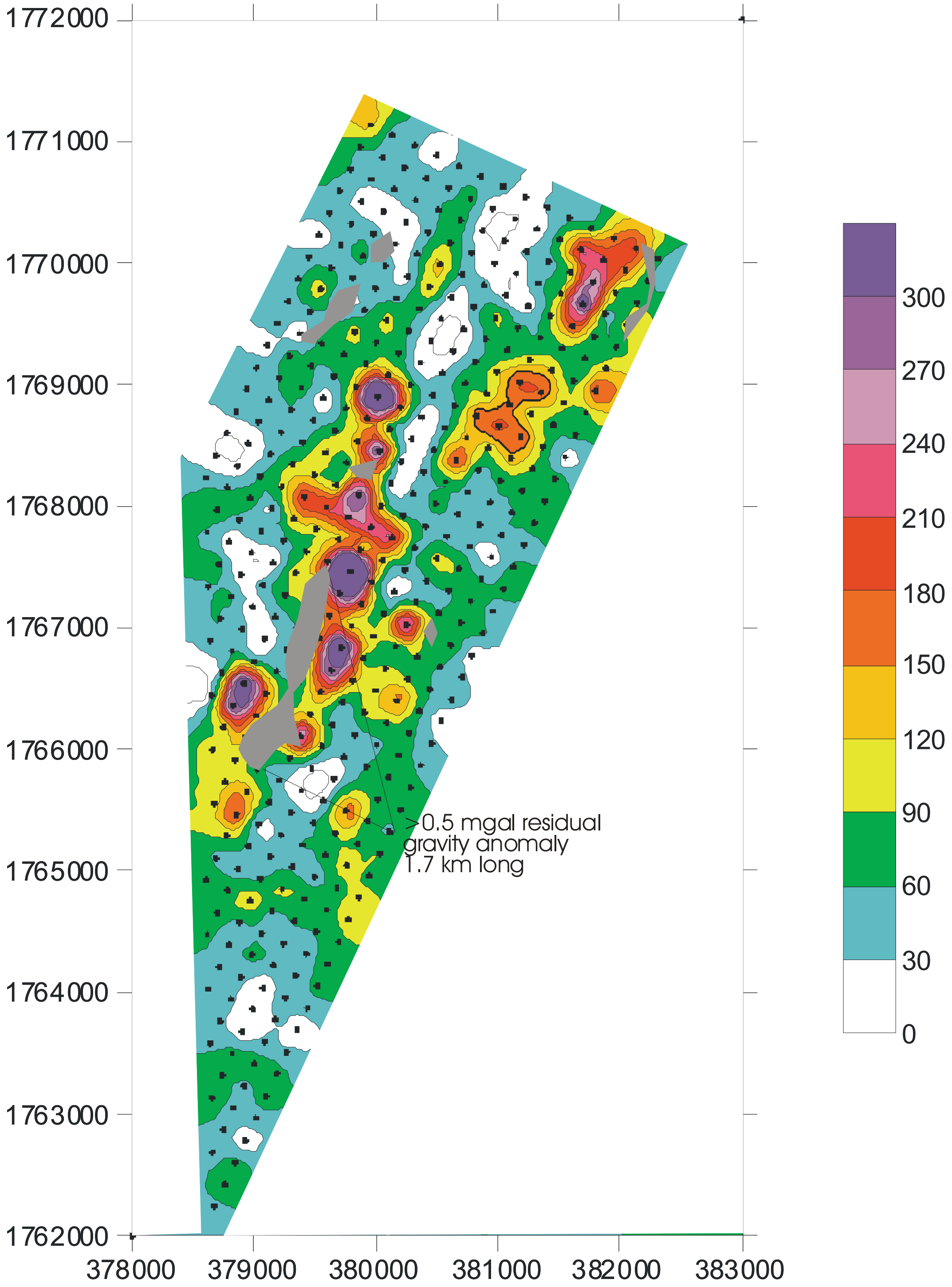


Figure 13. Kofot – Gerger area positive Bouger gravity anomalies plotted on contoured copper in soils. The higher copper values are found to either side of the basalt ridge and the gravity anomaly.

Melih and Hawagu

Geology and mineralization

The Melih and Hawagu areas are in the center of the license area (Fig. 3). At Melih, initial Landsat and Aster imagery indicated that the area has base metal potential, so the area was prospected for base metals using the portable Niton XRF. At Hawagu, reconnaissance field observations indicates the area is underlain by a massive granite pluton to the east, and a composite gabbro – basalt – tuff complex to the west. This western complex has arrays of E-W quartz vein systems, with epidote-chlorite-sericite alteration into the host rocks. Some of the veins are gold-bearing and are mined by artesanal workers who live in the nearby Hawagu village.

Results

A limited soil survey was conducted in the Melih area to test for base metal potential. In total, 42 soil samples have been taken and analyzed using the methodology described in appendix 2. The zone is entirely bound by coarse to medium grained granite. Minor basaltic dikes cross cut the granites as well as the alteration zone. The altered unit would appear to be coarse-grained and granitic. The results from the soil survey are shown in figure 14. Values for Cu, Pb and Zn are low, and the area is deemed to not have base metal potential.

Further prospecting in the area has located orogenic gold quartz veins south of the main Melih alteration. Quartz veins with values up to 1.5 g/t Au have been located (table 4). In the Hawagu area ~3 km to the SE from Melih, orogenic quartz veins assay up to 5.2 g/t Au (table 5).

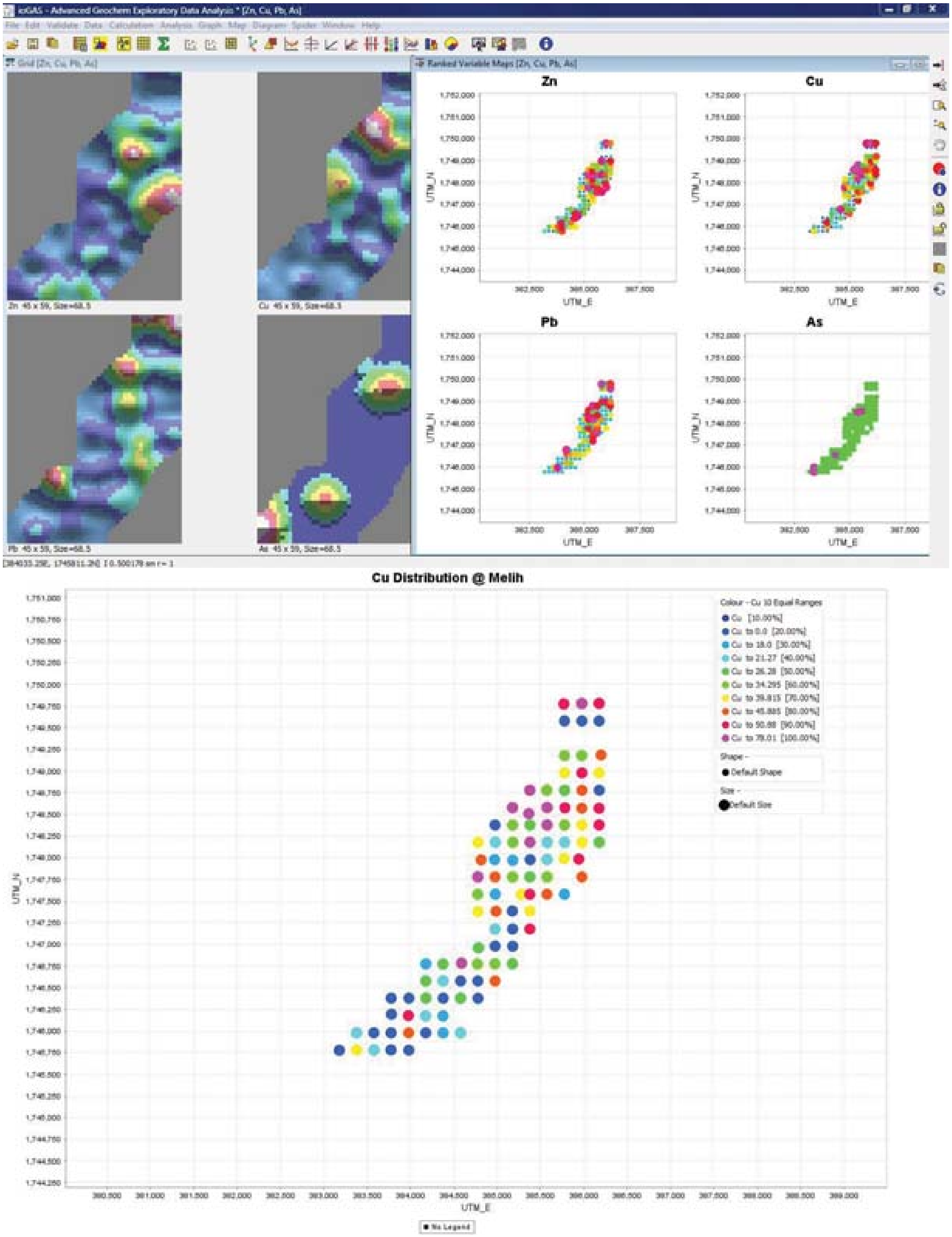


Figure 14. Melih soil grid results, as contour plots (top left) and as color bubble plots (top right and below).

MELIH

UTM_E	UTM_N	SAMPLE	Location	Type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		86	Melih	Rock	0.01	<0.2	76	16	9	<2
		14	Melih West	Qtz Vein	0.01	X	213	9	<2	<2
		17	Melih East	Qtz Vein	0.04	1	1083	25	<2	<2
		6	Melih East	Gossan	0.06	0.9	2350	28	<2	<2
		5	Melih West	Gossan	0.02	1.2	1695	35	<2	<2
		19	Melih S	Qtz Vein	1.52	2.8	699	11	<2	<2
		26	Melih S	Qtz Vein	0.32	0.5	38	5	<2	<2
		12	Qtz Hill - Enjehay Kerab	Qtz Vein	0.05	X	67	17	<2	<2
		13	Qtz Hill - Enjehay Kerab	Qtz Vein	0.07	X	495	6	<2	<2

Table 4. Melih assay results from grab samples, 09-2010.

HAWAGU

UTM_E	UTM_N	SAMPLE	Location	Type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		20	Hawagu	Qtz Vein	0.02	0.5	110	4	<2	<2
		18	Hawagu	Qtz Vein	5.2	1.1	681	7	12	12
		24	Hawagu	Qtz Vein	3.93	3.5	1097	32	<2	<2
		23	Hawagu	Qtz Vein	0.66	0.7	85	14	<2	20
		21	Hawagu	Qtz Vein	0.86	1	1527	22	<2	14

Table 5. Hawagu assay results from grab samples, 09-2010.

Taninay, including Taninay East, Gusti, Tablet, Awlet and Adikieray

The Taninay area is in the south central part of the license area (Fig.3). Taninay village is ~13 km NE of the town of Akordat, on the immediate western lowlands of mount Debr Sala.

Geology

At Taninay, the principal bedrock comprises: felsic to intermediate tuffs, plagioclase-phyric basalt dikes (?trachytes?), and deformed granitic intrusive rocks, possibly tectonic slivers from the adjacent granitic pluton to the east. In places the felsic tuffs are cordierite bearing, suggesting significant alkali depletion within a shear zone. The strata have a northerly trend, and have undergone heterogeneous, penetrative deformation. To the east is the pre- to syn-tectonic Debr Sala granitic pluton; exposures to the west are limited by alluvial cover. In the vicinity of major quartz vein arrays, the host strata have variable sericite, silica, carbonate, potassium feldspar and hematite alteration.

Mineralization

The Taninay vein gold system is extensive, with a total strike length of ~7 km. The vein system dips about 45-65 degrees to the west. At the southern end of the vein gold system, active artisanal mining has excavated pits up to 10-15 m deep over a zone of ~150-200m and 30-40m wide. Furthermore, surface diggings are present along strike to the north and south over a 3 km strike length of the 20-30m wide vein system. Quartz vein arrays are also present ~6 km south of main Taninay zone.

Results

Assays for the Taninay area are shown in plan view in figure 15, and given in table 6. One sample at Tablet, south of the main Taninay vein system, has 231 ppm Au. Seven samples are from 1-55 g/t Au in the southern part of the main Taninay vein array, where the veins are oriented NW-SE. This may represent either an intersection of two structural fabrics in the larger N-S shear system, or an area of vein termination where the vein curls toward the minimum stress axis, and has seen more hydrothermal fluids.

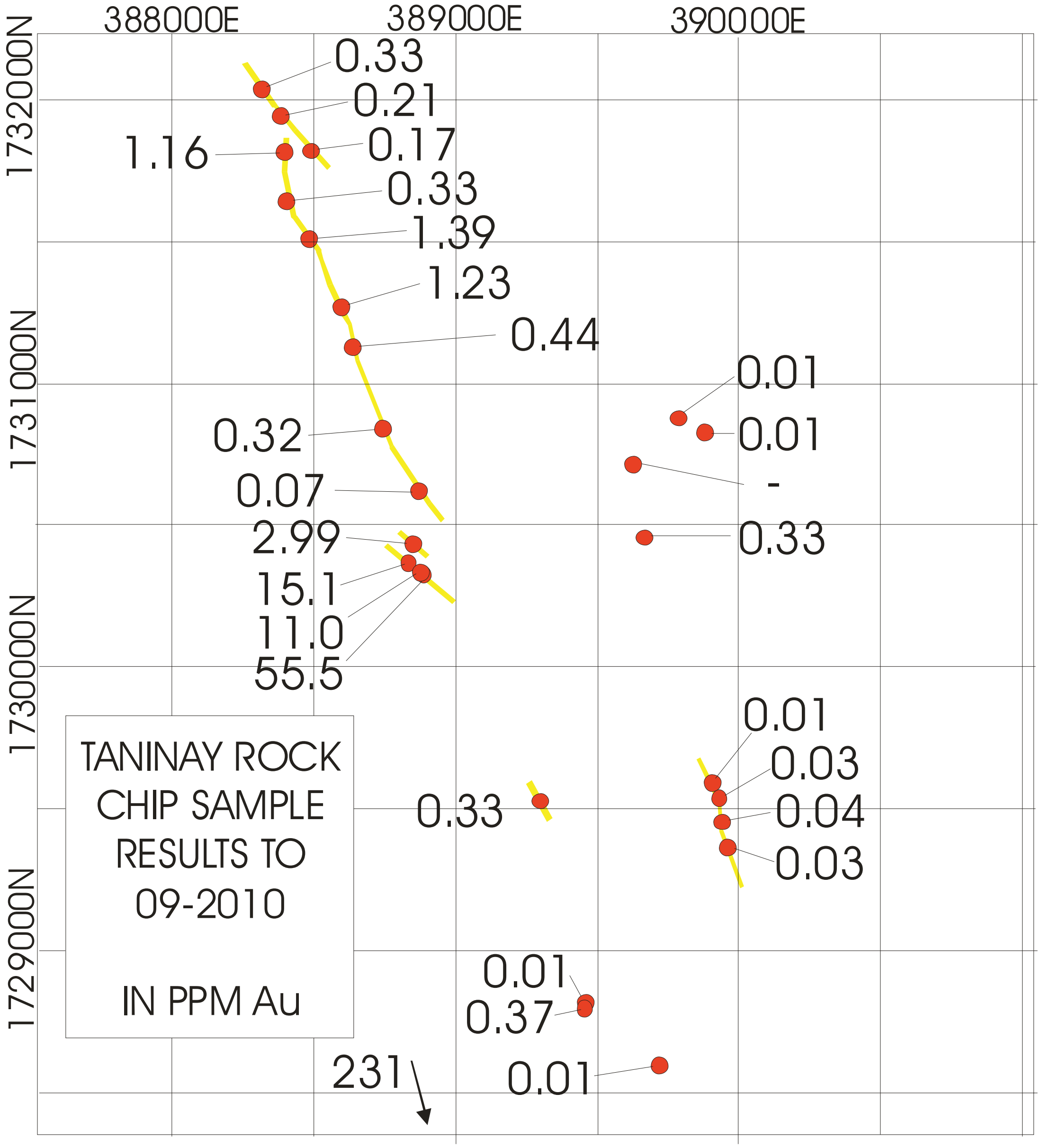


Figure 15. Taninay assay results for gold quartz vein sampling, to 09-2010.

TANINAY					Au-AA25	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
E_UTM	N_UTM	Sample Number	Location	Sample type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		92	Taninay	Vein	0.33	<0.2	15	15	10	<2
		91	Taninay	Vein	0.21	1.1	584	23	9	2
		88	Taninay	Vein	0.17	0.2	19	15	29	5
		89	Taninay	Vein	0.55	1.1	46	46	20	4
		90	Taninay	Vein	1.16	1.2	38	14	152	<2
		87	Taninay	Vein	0.33	0.4	9	<2	21	<2
		93	Taninay	Vein	4.39	0.3	7	5	4	<2
		94	Taninay	Vein	1.23	0.2	18	15	9	2
		97	Taninay	Vein	0.44	0.3	6	6	2	<2
		289	Taninay-East	Vein	<0.01	<0.2	9	4	<2	<2
		95	Taninay	Vein	0.32	<0.2	20	40	6	2
		290	Taninay-East	Vein	<0.01	<0.2	8	4	<2	2
		96	Taninay	Vein	0.07	<0.2	51	3	30	<2
		98	Taninay	Vein	0.33	<0.2	47	3	<2	<2
		99	Taninay	Vein	0.48	<0.2	47	3	3	<2
		110	Taninay	Vein	2.99	0.8	521	9	3	5
		109	Adikieray	Vein	15.1	3.6	214	6	2	2
		107	Adikieray	Vein	11	1.1	76	13	2	4
		108	Adikieray	Vein	55.5	4.6	399	64	12	7
		260	Taninay-East	Vein	0.01	0.13	1.45		<0.01	<10
		259	Taninay-	Vein	0.03	0.1	1.28		<0.01	<10
TANINAY, cont.					Au-AA25	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41

E_UTM	N_UTM	Sample Number	Location	Sample type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		106	Adikieray	Vein	0.02	1.3	169	2	4	<2
		258	Taninay-East	Vein	0.04	0.09	1.32		<0.01	<10
		257	Taninay-East	Vein	0.03	0.06	1.29		<0.01	<10
		105	Awlet	Vein	0.2	0.7	143	<2	2	<2
		104	Awlet	Vein	0.37	2.3	995	3	5	<2
		103	Awlet	Vein	<0.01	<0.2	13	<2	<2	<2
		102	Tablet	Vein	231	8.5	130	4	2	<2
		101	Gusti	Vein	0.11	1.6	141	<2	<2	<2

Table 6. Taninay assay results, 09-2010. The Tablet sample has the highest gold assay on the Akordat license area.

Engerne, including Engerne West, Garsay-Ketin, and Degesey

The Engerne vein gold prospect lies due east of Akordat along the main Akordat-Keren road near the village of Aderde. To the south of Engerne lies an area of alluvial cover with more exposed veins to the south (Dallas) it is possible that this 'blue sky' area could host

Geology

The bedrock in the Engerne – Garsay – Ketin area is a granitic pluton that is largely covered by alluvium to the east, and variable deformed mafic to intermediate volcanic and volcaniclastic rocks in the central and western parts (Fig. 3). The Engerne vein gold arrays appear to lie at or near the volcanic-granite contact, within a major ductile deformation zone. The volcanic rocks are well-foliated and generally trend N-S and dip to the west at 80°. The main N-S trending vein system is hosted in altered granite-tuff-diorite-basalt complex in a contact zone ~200 m wide. In addition, plagioclase-phyric basalt dikes are present within the deformation zone. In the vicinity of the vein arrays, the host rocks have variable epidote, silica, sericite, and carbonate alteration, and disseminated pyrite (plus hematite/goethite after pyrite) is present in host rocks locally.

Mineralization

The ductile deformation zone that is host to the Engerne vein gold system extends for 7.5 km strike length, and a 5 – 20m and is oriented N-S (Fig. 16). To the southwest, Garsay-Ketin is oriented NNW-SSE, and has a ~1 km strike length. The auriferous quartz veins are shear related and are hosted within meta-granite and meta-granodiorite. The Engerne main vein system has a total of 7.5km length and 5m-20m width. The outcrop has individual quartz veins of varying length, ranging from 60m to 200m, and aligned in a N-S trend. Most veins are N-S, although a few are oriented at 40^0 NE to the north. Most are oriented foliation parallel and dip steeply to the west. The northern end of Engerne vein system as well as Garsay-Ketin exposed vein body are highly fractured across their strike forming 5cm thick parallel planes. . Malachite can be seen at surface and there is considerable occurrence of oxidized sulfide material both in blebs and as fracture infill.

Several parallel ductile strike-slip shear zones are encountered in the Engerne and Garsay – Ketin gold prospect areas. The major ductile shear zone that hosts the main gold bearing quartz vein system is conspicuous at the northern end of the quartz vein outcrop. It is about 20m in thickness. The meta-granite at this zone is sericite-hematite altered, fine-grained and highly schistose; with significant kaolinitization and hematitization which is manifested in an array of colors, from reddish-brown, reddish-pink, white and light yellow. Texture and grain size reduction is also noted. Moreover, sillimanite and staurolite are well-developed. At Engerne, Staurolite is preferentially oriented N-S and horizontal on the foliation plane. Sillmanite crystals are up to 2cm in length. The aluminosilicate and staurolite development indicates that the rocks were subjected to iron enrichment and alkali depletion during deformation within a strong hydrothermal system.

The massive veins at the Engerne village locality are milky white, massive with abundant rusty after sulfide material and vuggy texture. It is composed of sulfides represented largely by pyrite. Cubic boxes (after pyrites) were noted in a hand specimen, as big as 2.0 cm wide and 3.0 cm long. Traces of chalcopyrite were also noted in some specimens. Visible free gold is rarely seen within limonitised material at the southern part of the vein system. Vugs filled with limonitised and hematitised sulfides are abundant throughout the vein. Disseminated and cubic hematitised pyrites were noted in the adjacent altered host rock.

It is notable that at Adi Enjera and Degesey. Adi Enjera, 1-2km east of the Degesey and 15km south of Engerne, there is active artisanal gold mining of alluvial material. The local gold miners pan alluvial soil and collect visible gold from the residue of washed soil. The Engerne auriferous quartz vein is the nearest known bedrock gold source. Further geology and prospecting may find another source for the alluvial gold workings.

Results

In total, 25 rock chip samples from gold quartz veins were taken throughout the target area. Many are shown in plan in figure 16. The gold in the quartz veins range from 0.01 to 100.91 g/t. The highest gold values are 100.9 and 25.9 g/t Au (Fig. 16, table 7). Three assays for the Degesey area are given in table 8. Most of the high gold values are from the central portion of the vein outcrop, mainly from the Engerne village.

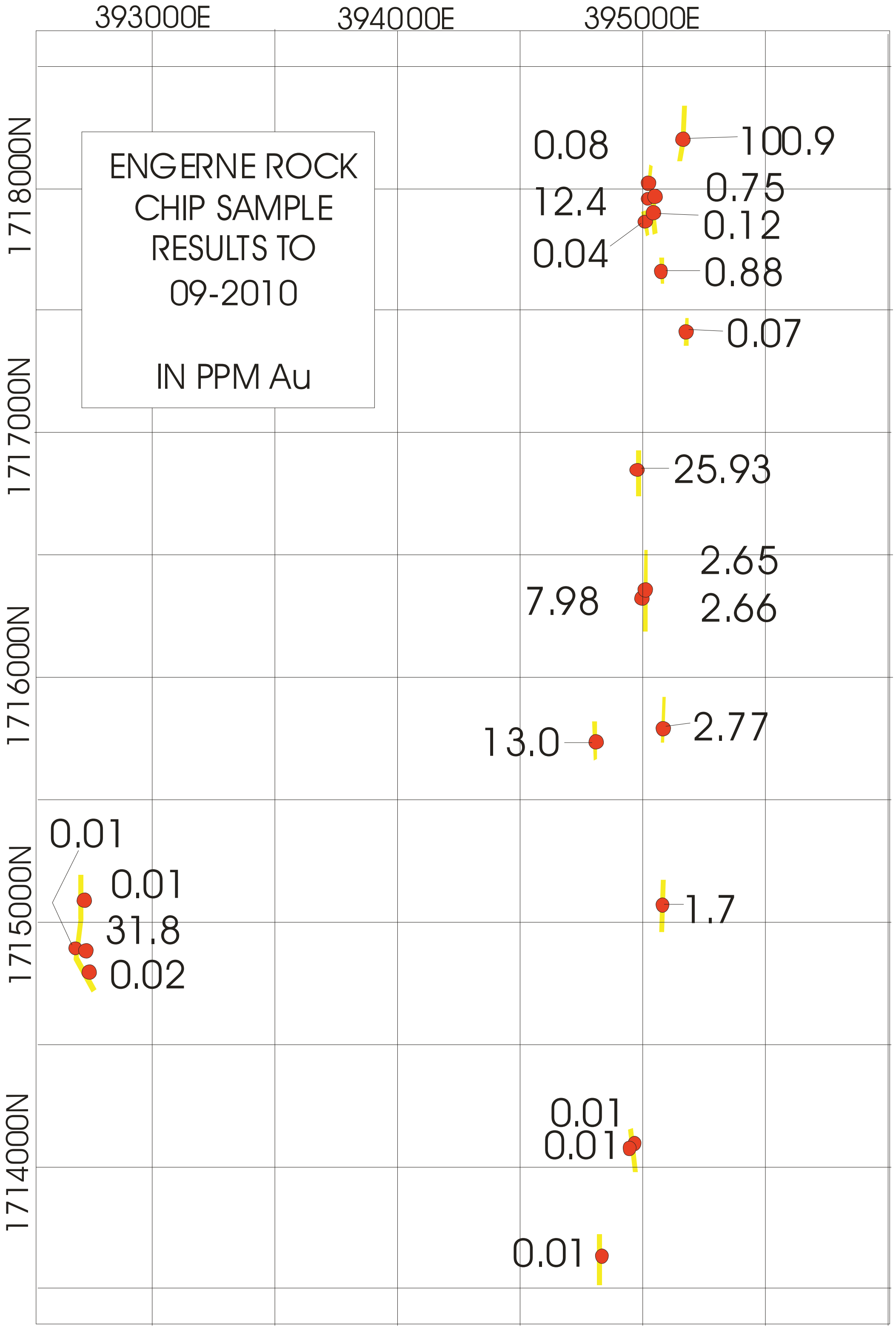


Figure 16. Engerne assay results for gold quartz vein sampling. Engerne main is along the 395000E trend, and Garsay Ketin is to the southwest.

ENGERNE					Au-AA25	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
E_UTM	N_UTM	Sample Number	Location	Sample type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		261	Engherne-NE	Vein						
		262	Engherne-NE	Vein	0.02	0.03	1.27		<0.01	<10
		122	Engerne	Vein	0.08	0.2	34	11	2	<2
		120	Engerne	Vein	0.75	3.6	61	22	4	2
		119	Engerne	Vein	12.4	14.6	221	9	6	<2
		118	Engerne	Vein	0.12	0.2	6	18	6	<2
		121	Engerne	Vein	0.04	<0.2	12	15	<2	<2
		117	Engerne	Vein	0.88	0.5	40	4	8	<2
		274	Engerne-Main	Vein	0.07	0.4	49	6	2	<2
		125	Engerne	Vein	2.65	1.7	447	16	4	3
		124	Engerne	Vein	2.56	1	171	9	6	<2
		123	Engerne	Vein	7.98	2.7	1350	80	15	4
		76	Engerne	Vein	2.77	3.9	19	6	12	<2
		77	Engerne	Vein	13	8.6	15	3	<2	<2
		275	Garsay-Ketin	Vein	<0.01	<0.2	22	3	3	<2
		269	Engerne-West	Vein	1.7	3.3	158	10	10	13
		276	Garsay-Ketin	Vein	31.8	60.8	306	10	220	<2
		277	Garsay-Ketin	Vein	0.2	2.6	151	3	25	2

ENGERNE, cont.					Au-AA25	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41

E_UTM	N_UTM	Sample Number	Location	Sample type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		278	Garsay-Ketin	Vein	0.02	0.2	20	4	<2	<2
		270	Engerne-West	Vein	0.02	<0.2	12	13	4	2
		272	Engerne-West	Vein	0.01	<0.2	41	4	3	<2
		273	Engerne-West	Vein	0.16	0.9	143	3	3	3

Table 7. Engerne – Garsay–Ketin assay results, 09-2010.

DEGESAY					Au-AA25	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
E_UTM	N_UTM	Sample Number	Location	Sample type	Au ppm	Ag ppm	Cu ppm	Zn ppm	Pb ppm	As ppm
		268	Degesey	Vein	0.01	0.17	0.78		<0.01	<10
		267	Degesey	Vein	0.05	0.22	1.66		<0.01	<10
		266	Degesey	Vein	0.03	0.19	1.4		<0.01	<10

Table 8. Degesay assay results, 09-2010.

Acknowledgements

The senior author has visited all of the main prospects listed in this report except Hawagu. Most of the field work and information in this report have been conducted/provided by geologists Abdul Ibrahim, Tim Strong and Mussie Alemseged, geologists for London Africa based in Eritrea; and Eritrean assistants. I thank Tim, Abdul and Mussie for their help in the field, and their geological insight into the Akordat property prospects.

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	Au ppm	*Ag ppm*	*As ppm*	*Bi ppm*	*Co ppm*	*Cu ppm*	*Fe %*	*Mn ppm*	*Mo ppm*	*Ni ppm*	*Pb ppm*	*S %*	*V ppm*	*Zn ppm*
Au ppm	1.00													
Ag ppm	0.18	1.00												
As ppm	-0.06	-0.03	1.00											
Bi ppm	0.04	0.36	0.14	1.00										
Co ppm	0.00	-0.02	0.29	0.20	1.00									
Cu ppm	-0.02	0.12	0.07	-0.04	0.22	1.00								
Fe %	-0.11	-0.06	0.35	-0.04	0.44	0.15	1.00							
Mn ppm	-0.06	-0.06	0.18	-0.03	0.14	0.32	0.17	1.00						
Mo ppm	-0.02	-0.01	-0.02	0.07	-0.12	-0.08	-0.15	-0.01	1.00					
Ni ppm	-0.05	0.00	0.30	-0.08	0.49	0.41	0.55	0.10	-0.13	1.00				
Pb ppm	-0.01	0.66	-0.03	0.25	-0.05	0.09	-0.03	-0.04	0.02	-0.05	1.00			
S %	-0.02	0.23	0.26	0.23	0.35	0.03	0.37	-0.14	-0.13	0.35	0.27	1.00		
V ppm	-0.07	0.07	0.44	0.11	0.25	0.21	0.45	0.01	0.00	0.42	0.17	0.29	1.00	
Zn ppm	-0.07	0.02	0.21	-0.11	0.45	0.54	0.53	0.41	-0.06	0.64	-0.06	0.18	0.22	1.00

Appendix 1. Correlation matrix table for Akordat Exploration license ICP-AAS assay samples, n = 106. Significant correlations highlighted, with $r^2 > 0.3$ in yellow and $r^2 > 0.5$ in red. **Gold** does not correlate with any other element. **Silver** correlates with Pb (Ag in galena) and to a lesser extent with Bi. **Copper** correlates with Zn (primary VMS or skarn signature), and to a lesser extent with Ni and Mn (oxidized groundwater transport and deposition). **Silver** correlates with Pb (Ag in galena) and to a lesser extent with Bi. **Zinc** correlates with Co, Cu, Fe, Mn, and Ni (all mobile in oxidized groundwaters and precipitate with iron oxides).

Appendix 2: Akordat property soil geochemical surveys

Methodology of Grid Soil Survey
of Himbol VMS Prospect

Introduction

Soil surveys have been conducted over 3 prospect areas within the broader Akordat prospecting license, including the Akordat area, the Melih area and Kofot – Gerger (Himbol) area (Figure A2 - 1). These areas were chosen based on Landsat and Aster 4 waveband signatures that correspond to alteration minerals, including oxidation after disseminated pyrite; jarosite alteration, dickite alteration and pyrophyllite alteration. Initial assessment on the ground determined that these areas have base metal potential.

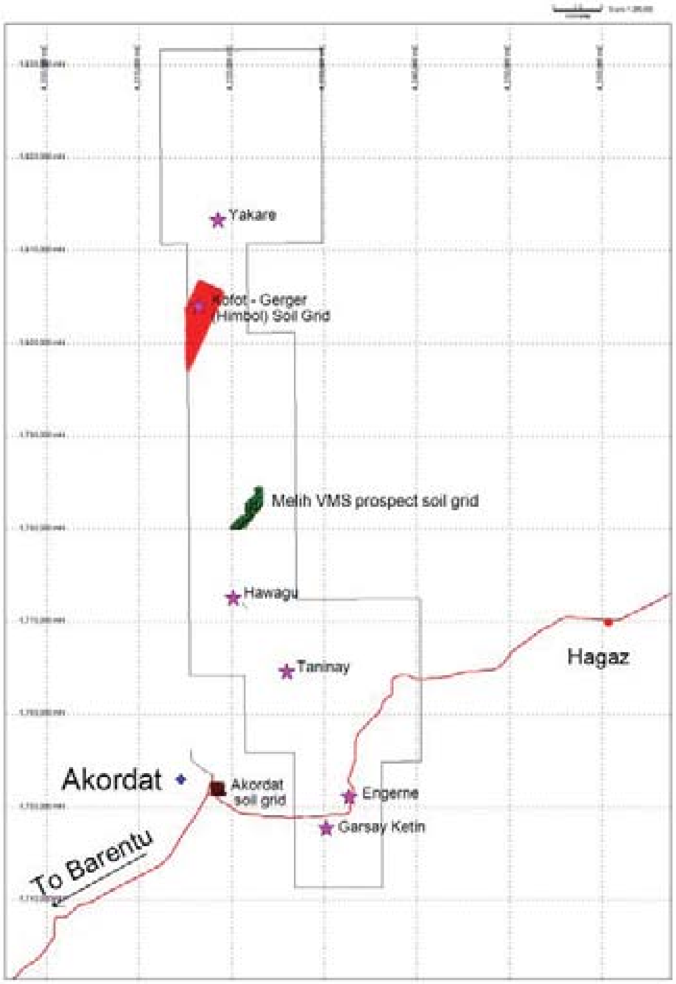

Figure A2-1. Location of Akordat area soil grids to 09-2010.

Methodology: Niton XRF

The samples were collected in the field using a 200 m x 200m grid spacing by a geologist and two assistants, using a Garmin GPS, a sieve, a hoe or shovel, a plastic sheet, a brush, and zip-locked plastic bags. During sample collection, most organic material and top soil was cleared first, before digging a shallow pit. The majority of the samples were taken from the "B" soil horizon – (immediately below organic-rich horizon), commonly composed of disaggregated bedrock. About 25 cm deep pit was dug and the soil acquired from the hole was directly passed through an 18-mesh sieve. Approximately 1.5 kg – 2 kg of medium-grained sand to clay-sized soil material that passed through the sieve was collected in plastic zip-lock bags. Sample tags with station (grid) number and GPS co-ordinate of the site was attached by stapler to each bag. The soil characteristics and local geology were noted in a field book for each station. The samples were transported to a secure storage at the field camp where they were dried, packed and secured in large marked grain bags.

After completing the sampling activity in field, all the samples were transported to the London Africa's office in Asmara, for geochemical analysis. Before commencing for analysis, the samples were arranged according to their grid station for ease of recording and cleaned in order to prevent cross-contamination due to remains of soil (dust) accumulated on the surface of each bag. Accordingly, the samples were analyzed by a portable, handheld Thermo Scientific Niton XL3t X-Ray Fluorescence Analyzer. Samples were analysed twice, with a shot taken at different spots of the bag. The Niton XRF analyzes a 1 cm x 1 cm area of a sample only, and the results may not be representative of the entire sample. Moreover, the Niton head which touches the surface of the sample bags during shooting was also cleaned after each sample has been analyzed. The duration of each shot was forty seconds. Finally, the average value of the two Niton readings for each sample was calculated and hence taken as a record for geochemical database of the samples.

Comparison between Niton XRF and laboratory ICP analyses

A subset of the Kofot – Gerger soil survey samples (23 of 425 samples) were sent to ALS Chemex Romania for testing of the accuracy and confirmation of the Niton XRF XLt3. Table A-1 shows the results of the Niton XRF for copper, lead and zinc, and table A-2 shows the results of the ALS Chemex laboratory testing for the same samples and metals.

ID	Cu	Pb	Zn
2 F	78.29	16.86	129.96
3 L	305.535	0	58.75
5 D	0	0	150.11
6 G	0	0	134.915
8 B	128.08	0	109.985
9 H	34.77	0	52.44
10 N	0	0	88.845
12 F	146.66	0	128.455
13 L	51.6	0	67.57
13 G	347.91	13.22	172.245
15 D	94.88	11.66	97.855
16 J	41.89	12.92	53.715
19 G	79.53	0	92.285
18 C	48.52	0	124.035
21 F	40.56	31.33	79.38
22 I	329.12	0	146.3
23 D	57.805	0	100.63
24 N	50.54	0	97.215
27 G	107.97	0	104.98
29 J	40.77	0	84.14
32 I	75.8	0	90.005
35 L	0	0	69.035
40 M	52.44	0	121.665

Table A-1 Niton XRF Results (in ppm).

ID	Cu	Pb	Zn
2 F	93	2	111
3 L	356	2	57
5 D	29	0	149
6 G	87	2	66
8 B	128	2	118
9 H	15	3	116
10 N	43	0	78
12 F	180	11	126
13 L	52	2	85
13 G	385	5	146
15 D	193	6	110
16 J	57	3	47
19 G	69	4	93
18 C	46	5	74
21 F	33	5	72
22 I	342	5	137
23 D	50	4	74
24 N	63	3	82
27 G	113	8	67
29 J	30	5	61
32 I	32	4	52
35 L	32	4	53
40 M	74	2	96

Table A-2 ALS Chemex Results (in ppm).

The Niton XRF data are compared to the laboratory ICP data for Cu, Pb and Zn in figures and sets are compared in figures A-2, A-3 and A-4, respectively. For copper, the Niton and laboratory data correlate closely with $r^2 = 0.96$, although the Niton data are lower by 15-25%. For lead, all values on both data sets are less than 35 ppm Pb, and the correlation coefficient $r^2=0.092$, indicating that there is essentially no correlation between these data sets at these low lead abundances. For zinc, the correlation coefficient $r^2=0.66$, and there is nearly a 1:1 correspondence between the Niton and laboratory values, indicating that the portable Niton XRF analyzes for zinc accurately but with a lower correlation than for copper. Previous comparative studies of Niton XRF data by London Africa personnel (T. Strong, personal communication) found similar results; that the Niton XRF tends to underestimate metal abundances by <10%.

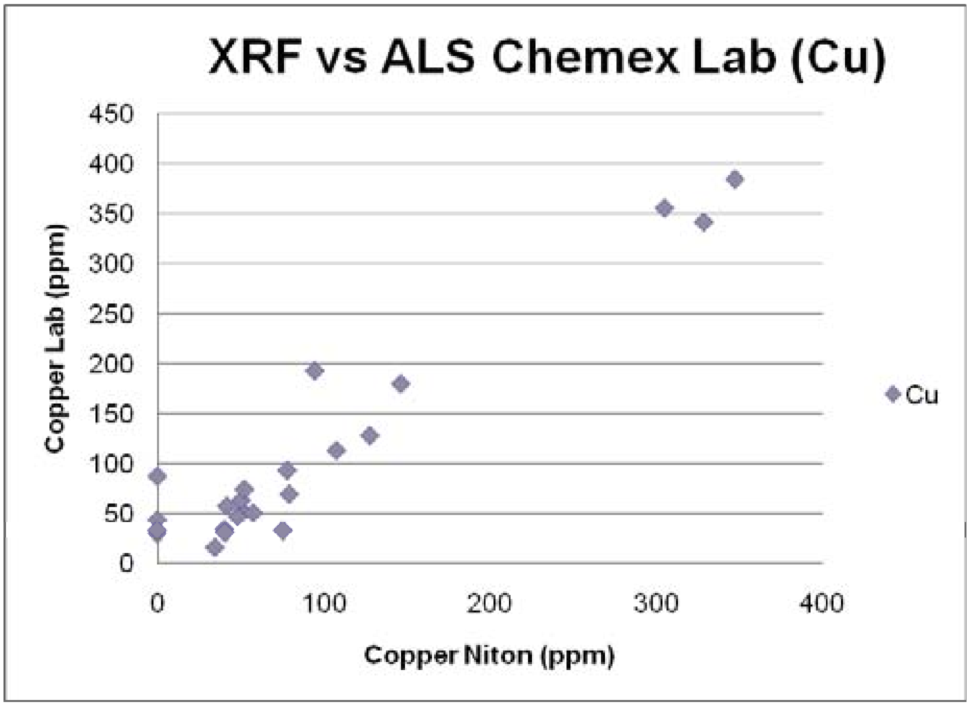

Figure A2-2. X-Y plot of Niton Cu values to ALS Chemex ICP Cu values. The correlation coefficient r^2=0.96, and the standard deviation is 105 ppm.

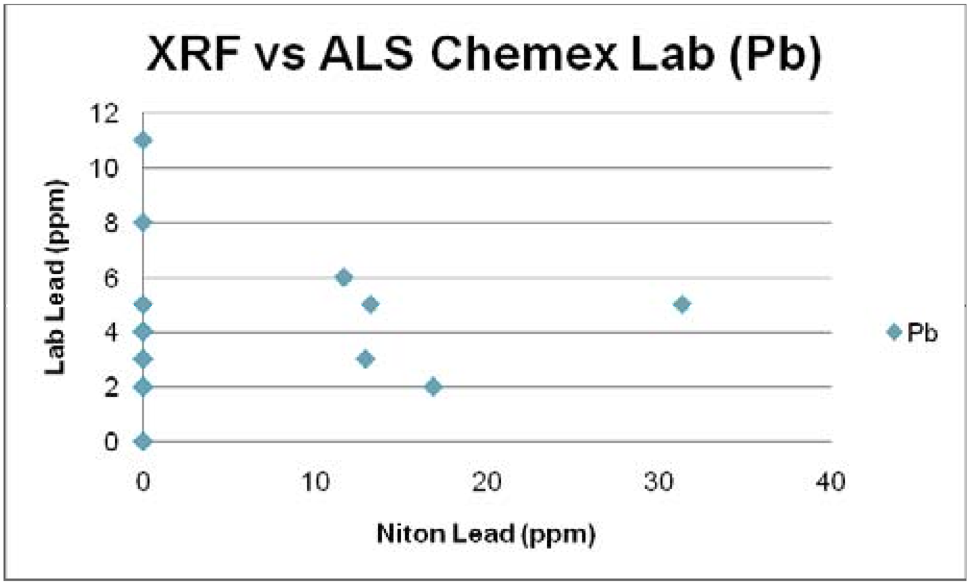

Figure a2-3. X-Y plot of Niton Pb values to ALS Chemex ICP Pb values. The correlation coefficient r^2=0.092 and the standard deviation is 5.9 ppm. There is no correlation for lead values at these low levels.

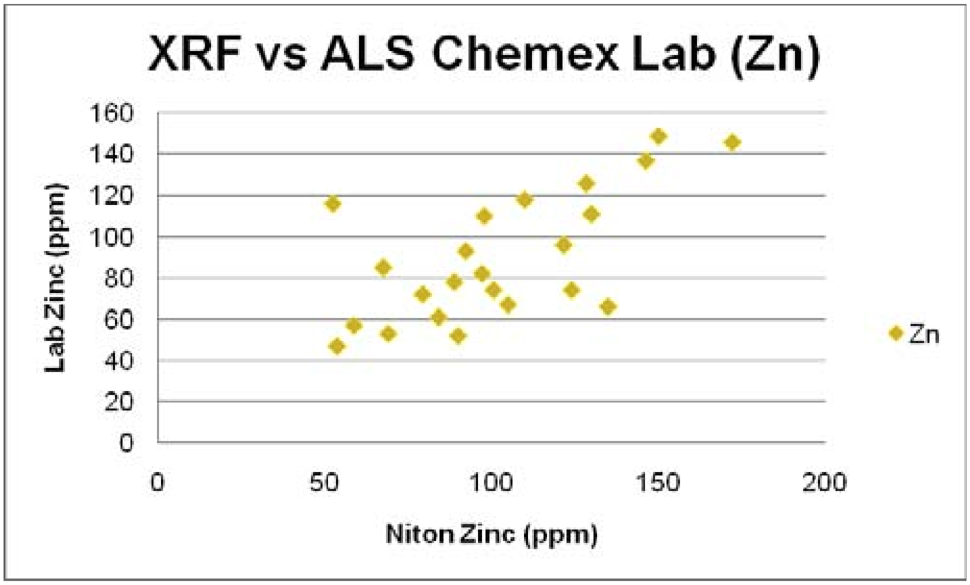

Figure A2-4. X-Y plot of Niton Zn values to ALS Chemex ICP Zn values. The correlation coefficient r^2=0.66 and the standard deviation is 31.9 ppm.

Results of the soil surveys are given in the sections on Kofot-Gerger and Melih prospect areas.

Appendix 3. Major element geochemistry a stratigraphic traverse in the Kofot area.

Sample #	Description	UTM_E	UTM_N	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI	Total	Geochemical classification
				%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
976	Sericite schist, foliated granite			65.68	16.07	6.20	1.45	0.80	4.78	1.74	<0.01	1.07	0.12	0.32	0.03	0.08	1.65	99.98	DACITE
977	Mafic volcanics, foliated basalt			48.27	16.23	10.73	6.30	6.26	3.37	0.07	0.01	1.57	0.18	0.27	0.05	<0.01	6.57	99.88	BASALT
978	Fine ash tuff chlorite-sericite altered			47.03	16.05	15.31	7.16	5.26	0.63	1.18	0.02	1.99	0.16	0.26	0.05	0.03	4.80	99.92	BASALT
979	Chlorite schist			47.83	17.51	11.77	4.69	8.22	2.58	0.09	0.02	1.59	0.18	0.22	0.06	0.01	5.45	100.20	BASALT
980	Fine ash tuff chlorite altered, thinly foliated, grey-green			44.00	8.94	13.21	9.00	17.37	0.44	0.14	0.11	1.67	0.22	0.17	0.01	<0.01	4.75	100.05	ULTRAMAFIC, or HIGHLY CHLORITIZED
981	Fine ash tuff chlorite altered, thinly foliated, grey-green			44.10	9.15	13.15	8.91	16.96	0.40	0.15	0.11	1.69	0.20	0.17	0.01	<0.01	4.89	99.89	ULTRAMAFIC, or HIGHLY CHLORITIZED
982	Granite, strongly weathered and sheared with epidote pockets			56.26	17.21	7.85	14.98	0.34	0.39	0.07	0.01	0.43	0.11	0.12	0.46	<0.01	1.50	99.74	DIORITE
983	Chlorite schist 10m thick within granite, weakly foliated			56.25	16.40	8.47	5.30	4.00	3.18	0.90	0.01	1.27	0.15	0.31	0.08	0.05	3.76	100.10	ANDESITE
984	Granite, strongly weathered and deformed			66.38	16.88	3.89	0.59	2.24	4.15	2.50	0.01	0.52	0.08	0.14	0.05	0.11	2.33	99.87	GRANODIORITE
985	Chlorite schist , within granite, weakly foliated			48.29	13.76	14.07	7.70	3.33	2.94	0.83	0.01	3.28	0.18	0.45	0.07	0.05	4.82	99.78	BASALT
986	Granite strongly weathered and deformed, sericite altered			66.00	16.45	3.73	2.12	2.12	4.34	2.14	0.01	0.54	0.05	0.16	0.08	0.10	2.24	100.10	GRANODIORITE
987	Chlorite schist fine grained, weakly foliated, strongly deformed			50.44	13.63	14.06	7.51	3.79	2.18	1.01	0.01	2.89	0.26	1.20	0.08	0.04	3.05	100.15	BASALT

Analyses by x-ray fluorescence on fused glass discs by ME-XRF06 at ALS - Chemex.