



**Technical Report on the
Resources and Reserves of the
Mana gold deposits, Burkina Faso
(as of Dec. 31, 2009)**

Respectfully submitted to:
Semafo Inc.

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1- Executive summary

Introduction and terms of reference

Semafo has retained SGS Geostat Ltd (thereafter “Geostat”) of Blainville, Quebec, Canada to complete an independent technical review of the resources and reserves of the Mana gold deposits at the end of 2009. Geostat’s review was carried out and the report was prepared in compliance with the standards of the Canadian Securities Administrators’ National Instrument 43-101 (“NI 43-101”). Geostat is already the author of the NI43-101 Technical Report on the Ressources and Reserves of the same property at the end of 2008. This report was published in March 2009 and it is available on the Sedar site.

Michel Dagbert, Geostat senior consultant, made a site visit of the Mana operations from November 10 to November 15, 2008.

Property description and location

The Mana gold deposits and mines are located in the southwest of Burkina Faso, in the provinces of Balé and Mouhoun at about 200km by road from the capital of Ouagadougou.

The Mana gold deposits are located within the limits of eight exploration permits and one mining permit, totaling 1695km². Exploration permits are granted for 3 years renewable periods to Mana Minerals SA, a 100% subsidiary of Semafo while the mining permit is granted for a 20 years renewable period to Semafo Burkina Faso SA, with a 90% shares to Semafo and a 10% share to the Burkina Faso government. The mining permit covers the current open pit operations of Wona to the north and Nyafe to the south. All permits are in good standing

Accessibility, climate, local resources, infrastructure and physiography

The Mana deposits and mine are accessible by road from the capital city of Ouagadougou which is serviced by regular air flights to Europe and other African countries. The first 175km of the 270km trip is on the main paved road from Ouagadougou to Bobo Dioulasso

The climate is divided into a rainy season, from June to September and with most of the average annual 830mm rainfall, and a dry season from October to May. Dust winds from the north are frequent in February and March. Minimum and maximum temperatures are about 15°C and 40°C.

Most of the national workforce (about 300 people) for the Mana operation lives in the nearby villages of Bana, Wona, Somona, Yona, Fafina and Bissa in the Province of Bale to the south and those of Kona and Dangouna in the Province of Mouhoun to the north.

Since the opening of the Mana mine in March of 2008, Semafo has operated a 2000tpd and then (July 2008) a 4000tpd carbon in leach mill with crusher, ball mill, reactive cells, gold room and ancillary services. Mill capacity is being expanded to 6000tpd (planned for mid 2010). Close to the mill is the office building with computer, Internet and satellite phone facilities. About half a kilometer away to the east, Semafo has established a living camp for expatriates with mess, club etc. Power is from diesel generators.

Most of the area lays at elevations of about 350m with highs of 450m on several “lateritic” hills that dot the landscape. Those hills are mostly found to the southeast of the Fobiri 2 permit, the south of the Mana mining permit (with the Nyafe and F67 deposits) and most of the West Mana permit. The north part of the mining permit with the Wona deposit and mill compound is on fairly flat ground.

History

Exploration work by Semafo on Mana grounds started in October 1997. Work in 1998-1999 led to the discovery of the Nyafe deposit (to the south of the mining permit). It included stream sediment and soil sampling of the BLEG (bulk leach extractable gold) type and lithogeochemical sampling in 62 trenches totalling 2078m, 37 RC (reverse circulation drilling) totalling 3198m and 5 core holes totalling 420m.

After acquiring the Fobiri permit in July of 1999, geochemical and geophysical (gradient induced polarization or IP and magnetometric) prospecting on the Mana and Fobiri permits help identify other anomalous zones i.e. the so-

called 67 zone to the SE of Nyafe, the Maoula zone to the south and the Wona zone to the north. All those zones were elongated along the same NW-SE direction of the Nyafe zone.

Detailed work on the Wona anomaly started in 2000-2001 with gradient IP on 16.9km of profiles, 22 trenches totalling 5826m³, 35 RC holes totalling 2851m, 28 RAB (rotary air blast) holes totalling 1096m, CIL (carbon in leach) tests on RC hole material and a first resource estimate. Results confirmed the extension of the Wona structure over a 1600m strike length with opening at both NE and SW extremities.

In 2002, exploration work started with 2678m of RC drilling on both Nyafe (1332m) and Wona (1346m) in February and March of that year. Results from those holes as well as some additional CIL tests on drilled material led to an updated resource estimate. Certification of the Wona and Nyafe resources with holes on sections at 50m and then 25m spacing started in 2003 with 17,301 m of RC and 1319m of core drilling on Wona.

A formal feasibility study and environmental impact study were initiated in 2004. Results of the feasibility study were made public in August of 2005 while the environmental impact study was completed in the third quarter of 2006. In 2006, Genivar was awarded the detailed engineering and construction management contract. Mine construction started in the second quarter of 2006. Drilling continued in 2006m, mostly RCs but also 24 core holes to confirm the RC intersections. A public hearing on environmental impact in the third quarter of 2006 led to a positive decision by the Ministry of Environment of Burkina Faso and the mining permit was granted in February of 2007. Mill start-up took place on February 15, 2008 with a 2000tpd ball mill and a first doré bar was poured on March 31, 2008. The 4000tpd ball mill started operation on July 29, 2008.

Geological setting

The Mana property is mostly covered by sedimentary, volcano-sedimentary and volcanic rocks of Birrimian age (paleo-proterozoic) from the so-called NNE-SSW Houndé belt (or syncline) within the West African craton which occupies most of Burkina Faso. Throughout the country, several of those greenstone belts dissect the craton and they play host to recognized gold deposits. Sedimentary, volcano-sedimentary and volcanic rocks in the belts are metamorphosed in the greenschist facies and they have been subject to a least two deformation phases (a syn – and a post-schistous). Limits of belts with contiguous plutonic rocks correspond to shears of generally NE-SW direction associated to those phases.

The Wona deposit is hosted in a series of highly deformed sedimentary (black pelites), volcano-sedimentary and meta-volcanic rocks. The gold mineralization has developed along a major NE-SW sub-vertical fault zone of regional extension. Thickness of that zone is about 200m in the Wona pit sector. The original stratigraphic sequence is a succession of pelitic sediments with graphitic horizons and volcanoclastics. They have been affected by a pervasive S1 schistosity which would be associated to vertical movements along the fault (the east block rising with respect to the west one) as well as senestral lateral movements. Those foliated rocks are cut by mafic to intermediate dikes, themselves foliated (S2 schistosity parallel to S1). The mineralization itself would be associated to a posterior lateral movement along the fault with hydrothermal fluid circulation and intense silicification.

The Nyafe deposit is hosted in a purely volcanic sequence with basalt and mafic to intermediate tuffs. From the observed morphology of pillows, the original stratigraphic sequence is sub-horizontal but upside-down with pillow lava at the bottom, then pillow breccias and finally massive lava at the top. Pillows show a dark ferrous chloritic border suggesting some hydrothermal alteration of volcanogenic origin similar to what can be observed in the Kiniero deposit mined by Semafo in Guinea. Several sub-vertical decametric dikes cross the volcanic sequence, in particular a N-S dike of felsic porphyric nature (with quartz phenocrysts) and two mafic dikes on both sides of the pit and parallel to the mineralization.

The Filon67 deposit, next to Nyafe is made of typical quartz veins associated to shear zones with dextral motion within a package of greenschist rocks. Those composite veins show texture of several successive fillings.

Like it is usually the case for outcropping mineral deposits under a tropical climate in general and western Africa in particular, the rock package hosting both Wona and Nyafe deposits has been subjected to intense meteoritic alteration with the development of a saprolitic zone near the surface. Saprolite is a multicolored soft material, which results from the kaolinization of original feldspars in volcanic rocks. In the saprolite, iron sulphides are also generally transformed into iron oxides or hydroxides hence the generally yellow-brown color of the mineralized saprolite.

Deposit type

Three separate deposits have so far been recognized on the Mana property. To the north and next to the processing plant, we have the Wona deposit. About 10km south of Wona, we have the Nyafe deposit. Next to Nyafe and about 300m to the southeast, we have the so-called Filon67 deposit.

The Wona deposit has been traced over a distance of 4.7km along the N46 direction (from N14200 to N18900 of the local grid with the same N46 azimuth for the local NS axis). The plan view of the modeled mineralized zones shows some changes in the strike direction of the orebody i.e. almost N-S (local grid) from 14200N to 16000N, then N352 (local grid) from 16000N to 17000N, again N-S (local grid) from 17000N to 18000N and finally N352 (local grid) again north of 18000N. Cross-sections show that interpreted mineralized zones are sub-vertical with a slight dip to east at the south extremity (14600N) and then a slight dip to west from 15800N to 16600N. The major mineralized zone (Zone 9 in Datamine internal nomenclature or len A) runs along most of the full strike length of the deposit. It can be fairly thick (up to 35-40m) in the north part (section 15800N and 16200N), especially close to the surface or at the south extremity (section 14600N). More to the south, as this main zone gets thinner, additional parallel zones appear to the east of the main zone. Those satellite zones are generally just a few meters thick. On some sections (14600N), we can have up to 4 satellite zones in addition to the main zone to the west. To the north and at depth (Wona Deep sector), Mana geologists have identified several high grade lenses in addition to the high grade core of Zone 9 called len A. They are lenses C, D and E. All those high grade lenses are sub-parallel and within the same low grade halo dubbed len B. This package extends north of 17,800N with new lenses dubbed R, S-T and finally V on Kona grounds.

The Nyafe deposit has a 2.4 km extension along the N-S of the same local grid as Wona (i.e. a real N46). However, it looks interrupted in two places (around 23600N and 24200N) thus making a natural division into a North, Center and South sector. General strike is about N15 (in the local reference system) but, like in Wona, it varies from south to north with a N25 in Nyafe south, a N5 in Nyafe Center and a N15 in Nyafe north. In the Nyafe South, Nyafe Center and the south of Nyafe North, the geometry of mineralized zones is rather simple with a single structure strongly dipping to west and locally some satellite structures with about the same orientation or much flatter. To the north of 24600N and up to 25250N, the orebody is characterized by several oblique structures within a corridor delimited by two main zones: to the west, a generally thin zone with a N10 strike and a strong dip to west (about 80°) and to the east a generally thick zone with a N20 strike and a lower dip (about 60°) to the west. In the same way as they do it on surface at 24600N, those two zones may merge at depth. Because of the different orientation, the distance between the two zones on surface is increasing to the north to reach about 90m at 25200N. While the west zone shows some interruptions, the east is visible all along its strike length. It also has several appendices or satellites with about the same orientation. Between those two limiting structures, we have some oblique zones of particular interest. All those structures with different orientations generate a “losangic” pattern when intersected by the same level between 25000N and 25200N and above Z=5350.

The Filon67 or F67 orebody lies almost parallel to the Nyafe orebody, about 300m to the east (local grid). It strikes almost NS over a length of about 500m. It is made of two main zones with about the same dip (60° to 70°) to the west. In the center (24100N and 24200N), those 2 structures are very close and they may merge at depth. Toward both extremities, there are further apart, leaving room for flatter satellites.

Mineralization

The Wona mineralization occurs as disseminated pyrite and arsenopyrite in highly deformed and silicified meta-sedimentary of meta-volcano-sedimentary rocks. Locally, silicification is so intense as to form massive quartzitic bodies, even in the saprolitic horizon, which necessitates some blasting to mine the ore at those places.

The mineralization is often associated with carbonates (siderite, ferruginous dolomite) which turn brown when exposed to air whereas those carbonates are more like orange and then yellow as we move away from the mineralization over about 10m. That change of color is likely linked to a change in Fe, Mg and Mn composition of carbonates. Carbonates tend to follow the schistosity plans. It is suggested that the pervasive carbonatization may have favored the gold mineralization by impermeabilizing the deformation corridor and thus concentrating the mineralization fluids within that corridor.

In addition to quartz and carbonates, other hydrothermal alteration minerals found at Wona are ferriferous chlorite and sericite. As mentioned above, sulphide minerals associated to the mineralization are pyrite (which may reach 10% in modal composition) and arsenopyrite. Magnetite as small millimetric prisms along schistosity plans is found in the walls of mineralized zones. Transition of magnetite to pyrite is gradual. Graphite is also associated to

mineralization. Its role in the mineralizing process is both chemical (reduction of sulphide compounds into pyrite and precipitation of gold) and physical (weak zone favoring shearing).

Gold at Wona shows as: (1) pure gold in hematite (from pyrite oxidation) with 1-2 microns size (2) native gold (92%Au+8%Ag) in pyrite with 5 microns size (3) free native gold in quartz with 1-10 microns size (4) gold in the petzite telluride (Ag_2AuTe). Gold grain size analysis by Mintek on a 300kg metallurgical sample indicates that most gold particles are in the 0-5/5-10/10-15 microns size classes but they also found one coarse gold grain of 64 microns size (which accounted for 62% of the gold in all retrieved particles).

The Nyafe mineralization is also associated to pyrite and arsenopyrite disseminated on the edge of millimetric veinlets of microcrystalline grey quartz. Folded carbonate veinlets cross the mineralization

Exploration

As a result of past experience and the discovery of Nyafe and Wona deposits, exploration on Mana permits generally starts with stream sample geochemistry on a large scale followed by soil sample geochemistry (and some rock sample geochemistry) on fixed grids of decreasing size. Ground geophysics (IP profiling) is also used to test extensions of known large scale structures. The next step is auger or RAB drilling on fixed grids in order to reach the saprolite below the generally transported lateritic cover. Ultimately, RC drilling will test anomalies at depth.

In 2009, several Auger drilling programs have been completed on geochemical or geophysical anomalies in the Mana mining permit and several exploration permits (Mana West and Mana East, Massala and Fobiri). Trenches have been dug over anomalous Auger drilling result in Fobiri permit.

A helicopter borne low altitude high resolution geophysical survey (magnetic+radiometry) has been completed by Fugro over a 1015 km² area covering all permits except Massala. A total of 11,520km have been flown in August and September 2009. The interpretation of the results of this survey were not available at the time of this writing

Drilling

The drilling method of choice at Mana is reverse circulation. According to information in the drill hole database at the end of 2009, there has been at least 1645RC holes totalling 112,805m (711 and 55,285m on Wona deposit and 934 and 57,520m on Nyafe and F67 deposits) which have been drilled on the Mana property by Semafo. They are normally drilled at 50 -60° dip angles to intersect the sub-vertical mineralized structures. There was no RC drilling on Mana grounds in 2009.

Core drilling provides geological information not available on RC chips. It also provides with material for metallurgical testing as well as reference material for checking RC sample grades around. According to information in the drill hole database at the end of 2009, there has been 227 core holes totalling 66,240m (185 and 59,920m on the Wona deposit and 42 and 6320m on Nyafe and F67 deposits) which have been drilled on the Mana property by Semafo. Most of those holes are of NQ core diameter (generally starting with HQ diameter). Like for reverse circulation holes, they are normally drilled at 50-70° dip angles to intersect the sub-vertical mineralized structures.

Core drilling in 2009 on the Mana mining permit concentrated on the deep NE sector of Wona with the aim of a 50x50m grid of intercepts on the N-S long section between 16600N and 17200N. A total of 106 holes totalling 37,350m have been drilled from section 15,500N to 18,900N including 4 holes on Kona permit

Sampling, sample preparation, analysis and security

As a general rule, RC holes are sampled at systematic 1m intervals while core holes are sampled according to intervals corresponding to intersected lithologies or structures. The length of the 12,837 assay intervals in the 106 core holes of 2009 varies from 0.20m to 6m with 10756 exactly 1m long. (84%) for an average length of 0.94m.

Each 1m RC sample of approximate 8kgs weight is reduced in a multistage riffle splitter to get a split of about 1kg which is packed and sent to the ALS Chemex (formerly Abilab) lab in Ouagadougou. Another split of the same size is kept on site for reference and the rest of the RC sampled material is discarded. Trench samples are processed in the same way. Core samples are sawed in half with the first half packed and sent to ALS Chemex and the other half kept in the core-shack.

At ALS Chemex, all samples (RC, trench and core) are dried, crushed to –10 mesh (1.5mm) and quartered to get a first 500g split of crushed material. That material is pulverized to 200 mesh and quartered to get a second 50g split which is fire-assayed with AA (Atomic Absorption) finish.

The lab at Mana processes the grade control pit channel samples. Chips from 1m intervals along channels weight about 1-2kgs. Each sample is dried and crushed to –10 mesh. The crushed sample is processed through a riffle splitter to get a 500g split which is pulverized to –200 mesh (in a ring mill). A second split of 50g is taken from the pulverized material and it is fire-assayed with an AA finish.

No special security measures are enforced for samples. They are transported from the drilling site to the core shack and preparation area (at the Bana exploration camp, near Nyafe) in plastic bags (RC, trench and channel) or wooden core boxes. Bagged RC or trench sample splits are momentarily stored in the sample preparation yard until their shipment by truck to Bamako. Once processed, core boxes are stored in a roofed core shack.

Data verification – Check assay data

Check samples in the form of standards, blanks and duplicates are regularly sent to the ALS Chemex lab in Ouagadougou together with the regular RC and core samples.

Semafo uses standard powders from Rocklabs with grades from 0.6 to 18.1 g/t. From data supplied by Semafo, 299 standard samples have been sent to ALS Chemex in 2009 and early 2010. Only 6 (i.e. 2% compared to 5% last year) of the returned values are obvious outliers, generally on the low side, which may result from sample numbers mix-up or the lab wrongly guessing the value of an obvious standard. As a general rule and like observed before, ALS Chemex tends to understate the set value of standards (percentages of reported values below the set value is generally more than 50%). The percentage of values within the theoretical 95% confidence interval is much better than last year, i.e. above 80% for four of the five standards used (although part of that improved performance is originating from higher standard deviations than before for the same standard). Also, unlike last year, it looks like abnormal values returned for standards (i.e. deviation from set value more than three times the standard deviation) have led to a re-assay of samples in the same batch. We have a definite improvement of the results from standards in 2009 compared to 2008.

Duplicates of the RC and core samples are also sent to ALS Chemex lab in a regular fashion. According to duplicate data provided by Semafo, up to 297 core sample duplicates have been sent to the ALS Chemex lab in 2009 and early 2010. All those samples are from 1m intervals in holes drilled in the Deep Wona sector. As usual, the majority of those samples are zero or very low grade. If we concentrate on the 125 samples above 0.5g/t (average of original and duplicated value), the scatter of points around the first diagonal (duplicate=original) is surprisingly low. It translates into an average relative difference of only 5.3% vs. 18.1% in 2008. Obviously, this is excellent and can only be achieved with pulp duplicates. Even with pulp duplicates, average relative differences are above 10-15% in most gold deposits.

In early 2009, 900 pulp rejects initially assayed at ALS-Chemex have been submitted to the SGS lab in Ouagadougou for fire assaying. If we concentrate on the 623 pairs with an average (ALS original and SGS duplicate) above 0.5 g/t, we can see a reasonable correlation ($R=0.97$) with a high scatter on just a few pairs. However the mean ALS value of 2.87 g/t is significantly higher than the mean SGS value of 2.70 g/t as shown from a T-test of paired data ($T=5.33$ vs. limit T of 1.96). This 5.7% significant difference is confirmed by a sign test with 72.2% of pairs showing an ALS value higher than the SGS value (with 623 pairs, proportion should be between 46 and 54%).

A total of 295 blanks have been sent to the ALS Chemex lab in 2009 and early 2010. The exact nature of the blank material is unknown. All blanks have returned acceptable grade values (less than 0.07 g/t Au) except one with a 2.4 g/t Au.

Adjacent properties

The situation does not seem to have changed much since the end of 2008. According to the web site of Riverstone Resources Inc. which holds a 224 km² exploration permit (the Yamaroko project) just south of Mana permits, they have completed a soil geochemistry survey which led to the delineation of of 3.5x0.5km anomalous zone as well as a 2000m RC drill program (in November 2007) with some promising results (2.04 g/t over 14m and 1.88 g/t over 6m).

Mineral processing and metallurgical testing

Gold from the Mana deposit is recovered by a state-of-the-art metallurgical plant which has a nominal capacity of 4,000 mtpd. An expansion of the process plant is currently underway to upgrade the capacity up to 6,000 mtpd. The major areas concerned are: construction of a new primary crushing facility, addition of a SAG mill, addition of 4 new GenSets at the power plant, addition of 2 extra CIL reservoirs, replacement of various equipment such as vibrating screens, hydrocyclones cluster, pumps as well as upgrading all services (process water, raw water, air) in the mill. Most of the Mill's expansion should be completed by mid-year (June 2010) but some work will be carried out until year-end.

Results of pre-production testing of metallurgical samples of Wona and Nyafe ore indicate a gold recovery of 94% for Wona saprolitic ore, 76% for Wona bedrock ore, 87% for Nyafe oxidized ore and 71% for Nyafe sulphide ore. In the year 2009, the mill has processed 1,401,738t ore (dry basis) with a reconstructed average grade of 3.49 g/t, equivalent to 4892.kgAu or 157,301 ozAu. Given gold poured of 153,542 oz, an estimated gold in circuit differential of 6114-9691 = -3577 oz and an estimated gold in solid and liquid rejects of 8967 and an input gold in process water from tailing pond of 1150oz, it gives an average metallurgical recovery for the year 2009 of 94.3% in accordance with forecast recoveries (or even better given the significant proportion of ore from Nyafe+F67 processed in 2009).

Mineral resources and ore reserve estimates

Like most computerized resource block models, those for Mana deposits (i.e. Wona, Nyafe and F67) start with drill hole data, which serve as the basis for the definition of 3D mineralized envelopes with resources limited to the material inside those envelopes. The next step is the selection of drill hole data within the mineralized envelopes in the form of fixed length composites and then the interpolation of the grade of blocks on a regular grid and filling the mineralized envelopes from the grade of composites in the same envelopes. All the interpolated blocks below the topo or pit bottom surface as of Dec. 31, 2009 make the mineral resources at that date and they are classified according to proximity to composites and corresponding precision/confidence level.

Modifying factors in the form of metal recovery and dilution are applied to the resource blocks. Those modified resources are then loaded into a pit optimization program to calculate a final pit limit taking into account metal recovery, updated price and costs as well as maximum pit slope angles. The calculated final pit is smoothed and adjusted for access ramps. Reserves are modified resources above operational cut-off in those adjusted final pit limits

RR Estimation – Drill hole and sample database

The Wona drill hole database used to estimate resources at the end of 2009 has data from 921 holes and trenches with the following distribution: 23 trenches, 185 core holes, 426 RC holes, 285 fill-in ("préparation géologique") RC holes and 2 special holes. With respect to the drill hole database at the end of 2008, we have 106 more holes and they are all core holes on the Wona Deep Extension on sections 15500N, 15900N, 16150N to 18100N, 18500N and 18800N-18900N (Holes WDC80 to WDC177 totalling 37,374m). A total of 78,138 assay intervals with a gold value are available along the 921 holes and trenches. This is 13,158 more than what we had at the end of 2008. Most of the new intervals (12,837) are in the 106 new core holes but some of them (321) are in low priority portions of old core holes with assays not available at the end of 2008. They are mostly 1m long. Wona holes are distributed over an area 1.425kmx7.580km from 11,781E/13805N to 13,206E/21388N in the local coordinate system with a NS axis corresponding to the SW-NE axis of the regular UTM system. They are on E-W sections with a maximum spacing of 50m from 14,200N to 18100N i.e. 79 master sections. That spacing is reduced to 25m from 15,700N to 16,700N and to 12.5m from 14,200N to 15,700N.

Drill hole data from Nyafe are basically the same as at the end of 2008 i.e. 995 holes and trenches with the following details: 75 trenches, 42 core holes, 541 RC holes, 335 fill-in ("préparation géologique") RC holes and 2 shallow wells. Up to 55,218 assay intervals, mostly 1m long are available along the 995 holes and trenches. Nyafe holes are distributed over an area 0.885kmx2.515km from 14,391E/22,989N to 15,277E/25,505N in the local coordinate system with a NS axis corresponding to the SW-NE axis of the regular UTM system. They are on E-W sections with a spacing of 12.5m in the three mineralized sectors of Nyafe i.e. Nyafe North from 24250N to 25225N (a 975m span i.e. 79 sections), Nyafe Center from 23,600N to 24075N (a 475 span with 39 sections) and Nyafe South from 23,100N to 23,425N (a 325 span with 27 sections). Between sectors and north of Nyafe North, drilling is on sections with a maximum spacing of 50m.

Drill hole data from Filon67 are basically the same as at the end of 2008 i.e. 58 RC holes with 3727 1m assay intervals. Those RC holes are on sections at about 25m spacing from 23,925m to 24,425N i.e. a 500m N-S span.

RR Estimation – Resources in the open-pit sectors

All the 2009 drilling took place in the deep part of the Wona deposit north of 15,500N. As the result, the resource models for the F67, Nyafe and the top part of the Wona deposits have not changed since the end of 2008.

In all three deposits (Wona, Nyafe and F67), resource models use sub-blocks within master blocks of 5x5x3.33m size. Each sub-block is tagged according to mineralized solids and ore type. Mineralized solids are sub-vertical structures the outline of which are first interpreted on drill sections using a low cut-off of generally 0.5 g/t Au applied to original (i.e. 1m) assay intervals, down to 0.3 g/t in some places. Also mineralized bands may include some internal waste material i.e. assay intervals with a grade less than 0.3 g/t Au. Interpreted sectional outlines are connected through tie-lines to create mineralized solids. The ore type of each sub-block is derived from its position with respect to interpreted contact surfaces between, from top to bottom, saprolite, saprock and bedrock in Wona, oxide and sulphide in Nyafe and F67. The ore type of a sub-block defines its density i.e. respectively 2.3, 2.4 and 2.7 t/m³ in the saprolite, saprock and bedrock of Wona and respectively 2.4 and 2.8 t/m³ in the oxide and sulphide of Nyafe and F67.

The average gold grade of each sub-block is interpolated from capped grade of hole composites around the sub-block and in the same mineralized solid (but possibly in a different ore type). Composite length is 3m in Wona, 2m in Nyafe and 1m in F67. Prior to compositing, original assay intervals (mostly 1m) are capped to 30 g/t in Nyafe and 15m g/t in Wona and F67. This amounts to gold loss of respectively 4.8% in Wona, 3.6% in Nyafe and 6.0% in F67. Block grade interpolation is by ordinary kriging using variogram models fitted on experimental correlograms computed from composites in each deposit. In a typical Datamine fashion, the procedure is run in several passes with search conditions (size of search ellipsoid, minimum data in search ellipsoid) relaxed from one pass to the next until all blocks within the mineralized solid are interpolated.

The interpolation run in which a sub-block is interpolated defines the category of the sub-block resources with measured resources for blocks interpolated in the first run (SVOL=1) and indicated resources for blocks interpolated in the second run.

Resources available in all those sectors at the end of 2009 are simply obtained by cutting those models with the topo surface (pit bottom + natural surface) in the same sectors as surveyed by Mana personnel. Like before, resources are given at the low 0.6g/t cut-off which corresponds to the lower limit for material currently sent to the mill. This cut-off is applied to the average grade of mineralized material in each block 5x5x3.33m (i.e. after re-blocking all sub-blocks within the same block).

RR Estimation – Modifying factors and reserves in the open-pit sectors

In the conversion of resources into potential reserves, “modifying factors” need be applied to “in-situ” block tonnage and grade estimates to reflect the expected mining loss (applied to both metal and tonnage) and mining dilution (applied to both tonnage and grade). The accuracy of those “modifying factors” can be checked through reconciliation of mine production with projected resources and reserves within the same mining limits for any given time period, typically a full year.

For 2009, the mine production is the reconstructed mill input (1,401,738t @ 3.49g/t i.e. 157,301) plus a stockpile differential estimated at 131,533t @ 1.44 g/t or 6,096 oz hence a total mine output of 1,533,271t @ 3.31 g/t or 163,397oz. Using truck records and production sampling, that total is split between the three pits i.e. Wona (88% of tonnage and 78% of metal), Nyafe (8% of tonnage but 16% of metal) and F67 (4% of tonnage and 6% of metal). From mining limits at the beginning and end of 2009, it is possible compare those pit productions with estimated resources within the same limits from the long term resource model at the end of 2008. Those comparisons provide actual “modifying factors” to convert resources into reserves.

In Wona, there is a metal loss of 8.5% but also a negative dilution (ore mined is less than ore in situ) of 7.5%. As a result, the production grade is about the same as the predicted grade from the resource model without any dilution. This loss of tonnage and metal is explained by a misplacement of the laterite-saprolite contact surface in the top benches which have been mined in 2009, resulting in a shortfall of ore compared to the model.

The situation is exactly the opposite in Nyafe: ore mined is about 35% higher than predicted from the resource model, both for tonnage and metal (hence, here again, the average grade of the ore mined is about the same as the

resource grade). Similarly in F67, we have 34% more metal but only 15% more tonnage hence an average grade better than anticipated from the resource model. In both cases, the explanation for that ore gain by Mana geologists is the discovery of satellite sub-horizontal mineralized structures not accounted for in the resource model at the end of 2008.

Globally with the ore loss in Wona and the ore gain in Nyafe and F67, the mine has produced only 2% less metal than predicted from the resource model and about 4% more tonnes.

Those 2009 reconciliation results suggest that the same modifying factors as at the end of 2008 be used to convert resources into reserves at the end of 2009 i.e. a 97.5% mine recovery factor (i.e. 2.5% loss) for metal and tonnage and a 5% mining dilution for tonnage and grade in the saprolite of Wona. Just from the lower average width of mineralized structures, that dilution is raised to 10% in the oxide of Nyafe and 15% in the oxide of F67. For the other types of material, we do not have yet any reconciliation data to figure out the dilution but we can expect that it is likely more than in saprolite/oxide hence a 10% for saprock/bedrock of Wona, a 20% for sulphides of Nyafe and a 30% for sulphides of F67.

Mostly because the resource models are the same and the technical+economic conditions have not changed much between the end of 2008 and the end of 2009, no new pit optimization and final design has been conducted on resources left at the end of 2009. As a result, the final pits are those of the end of 2008 and reserves are the “modified” resources left in those final pits. More precisely, they are the sum of recovered +diluted resources in 5x5x3.33m blocks within the final pit shell with a diluted grade above the corresponding marginal cut-off .

RR estimation – New mineralized lenses in the Wona Deep sector

The so-called Wona Deep sector can be viewed at the extension to depth of the Wona mineralized zones beneath the northern part (north of 15,800N) of the main Wona pit and the north pit. It also includes some mineralization closer to surface and north of the Wona north pit, in the Kona permit, up to 19,000N north. This sector has been intensively drilled in 2009 with 106 core holes and close to 37,375m of drilling

As usual, the estimation of resources in the Wona Deep sector starts with the interpretation of the limits of mineralized bodies or lenses on drill sections and the connection of those limits from one section to the next to define mineralized solids. Up to 13 different solids have been interpreted by the project geologist in the Wona Deep sector. On the south side, from 15,900N to 16,500N, we have a single mineralised zone which corresponds to the main unit which is being mined in the Wona main pit above. However this zone is split into two separate lenses i.e. a high grade core dubbed len A and a lower grade envelope or len B. Like other high grade core lenses, len A is defined using a cut-off of about 2 g/t while the lower grade envelope or len B is defined at the same low cut-off as the mineralized zones of the Wona open pit sectors i.e. about 0.5 g/t.

On section 16500N another high grade structure, len C, appears on the west side of the mineralized zone and then, on section 16,600N, another one, len D shows up on its east side. Hence on section 16,800N, we have three high grade lenses i.e., from west to east, C, A and D and all three are within the lower grade envelope of len B. A fourth high grade structure, len E, is defined on the east side of the mineralized zone on section 16900N. Since len A had disappeared on section 17,000N, on section 17,100N we are left with len D on the west side of the mineralized zone and len E on its east side. Like before, both are contained within the low grade envelope of len B. That low grade envelope stops on section 17300N; hence on sections 17,400N, we are just left with len D which continues until section 17,800N. North of 17,800N, the geometry of mineralized structures starts to be more difficult to interpret due to the lack of drill hole information. Nevertheless, len D is relayed as lenses S-T to the west and len R to the east. North of 18,000N, we are just left with the broad len V that continues on Kona permit until 19,000N. In addition to those main lenses, we have a few satellite lenses of very limited extent on both sides of the mineralized zone (lenses F, G, H, K and P).

Mineralized solids are discretized by blocks 2.5m (EW) x 5m (NS) x 5m (Z). Blocks might be subdivided into sub-blocks as low as 1.25m (NS) x 1.25m (Z) x a few millimetres along EW to better follow the limits of mineralized solids. Volumes are converted into tonnages using the usual Wona density values i.e. respectively 2.3, 2.4 and 2.7 t/m³ in the saprolite, saprock and bedrock. Most of the material of Wona Deep is in bedrock.

RR estimation – Samples and composites in the new mineralized intercepts of the Wona Deep sector

We have a total of 1045 intercepts of drill holes north of 15800N with the newly defined mineralized lenses of Wona Deep. A large fraction of those intercepts are actually in shallow RC holes in the north part of the main Wona pit as well as in the north pit. Statistics of the length of mineralized intercepts show that it ranges from less than a meter to more than 50m with averages around 9m. Given that intercept angles are generally rather low, corresponding ore lenses thickness are much lower.

We have 10,115 original assay intervals within the 1045 mineralized intercepts. Most of those assay intervals are 1m long although, in the core holes, the high grade intervals tend to be shorter. Statistics of the reported grade of those assay intervals show averages between 3.0 and 3.5 g/t, in the high grade lenses A, C, D and E while the average grade of core samples in len B is less than 1 g/t. Average grade of the four small satellite lenses (F, G, H and K) is generally high which is the reason why those lenses were defined in the first place. The northern lenses P, R, S-T and V are generally low grade. The capping limit applied to the gold grade of original assay intervals is the same 15 g/t as the one used in the Wona open pit sectors and applied mostly to the grade of 1m RC intervals in those sectors. It caps the grade of 79 samples including 43 core samples (respectively 0.8% and 0.7% of total) and reduces the gold quantity by a mere 2.9% (2.1% for core samples).

Capped assay intervals within mineralized intercepts are composited according to 2m intervals before they are used in the interpolation of the average gold grade of nearby sub-blocks in the same len. That compositing is necessary in order to standardize the length of intervals (generally 1m but often less than that in core holes). The selected 2m corresponds to the selected thickness of 2.5m for the parent blocks.

Correlograms have been computed along several directions from composites in the four principal high grade lenses (A+C+D+E) and composites in the low grade len B. In the high grade lenses, relative nugget effect is 30% and best continuity (with a practical range of 50m) is along any direction of the N-S vertical long section (with nothing better along the direction dipping north in that plane). The practical short range is just 5m along EW. In the low grade len, relative nugget effect is slightly higher (40%) and anisotropy is milder with a practical long range of 40m along NS and a practical short range of 25m along vertical and EW.

RR estimation - Block grade interpolation and validation of block grade estimates in the Wona Deep sector

The average gold grade of any sub-block within a given len is interpolated by ordinary kriging from the capped grade of nearby 2m composites in the same len. Variogram model used are that of high grade lenses in all lenses except len B with its own particular variogram. As usual, this interpolation is done in up to three successive runs with a relaxation of minimum search conditions from one run to the next.

The first run (SVOL=1) uses a 45x37.5x9m ellipsoid with the 45m long radius along vertical and the 37.5m intermediate radius along the average N-S strike. Minimum number of composites is 3 and minimum number of holes with composites is 2. The second run (SVOL=2) uses a 75x62.5x15m ellipsoid with the same orientation. Minimum number of composites is 2 in at least 2 holes. The third and last run (SVOL=3) uses a 150x125x30m ellipsoid with a minimum of 1 composite. Maximum number of composites in the search ellipsoid used in the sub-block kriging is 25 in all the runs.

As a way to validate the interpolated sub-block grade data, in each len we have compared the grade of any given composite with the estimated grade of the block (after merging all sub-block of the len of interest in the same block) which holds the center point of that composite. As expected, the correlation is far from perfect (R around 0.8) with a good deal of smoothing in the block grade estimates. What is important however is the good agreement between average composite grade and average estimated block grade at the same place.

RR estimation – Resource classification in the Wona Deep sector

Resources in each block are first classified in an automatic manner based on the interpolation run number (SVOL) when the block grade was interpolated. Like before and despite the additional drilling on the Wona Deep sector in 2009, the best category (SVOL=1) is an Indicated 1 although in some places the grid of intercepts on the long section is as tight as 25x25m which may warrant a measured category. Given the size of the search ellipsoid for that run (45x37.5m on long section), blocks in that category are those surrounded by intercepts on at least 50x50m. Also like before, the next category (SVOL=2) is an Indicated 2 with blocks surrounded by intercepts on an incomplete 50x50m grid (e.g. 100x50m). The last category (SVOL=3) is for the inferred resources.

This automatic classification has the limitations of any automatic classification i.e. : (1) in the same bench and section, we may have blocks in the indicated and inferred category which may pose a problem when defining reserves in potential underground stopes (2) isolated intercepts are generating “rims” of indicated1, then indicated 2 and finally inferred resources, also something not desirable in mine planning exercises.

The automatic classification serves as a guide for a final classification based on the density of hole intercepts in any given len as it appears on NS long sections. As noticed before, in some sectors like between sections 16,800N and 17,000N, we have holes on sections at 25m spacing with a grid of intercepts on the long section almost 25x25m. We think that the Indicated 1 category should be restricted to those sectors where there is obviously no need for additional drilling from surface. Then the Indicated 2 category would be for sectors with the standard spacing between 50 and 100m between intercepts while the inferred category is for all the material around isolated intercepts (generally at depth) as well as extensions beyond 50m from the last intercept.

RR estimation – Final resources of the Wona Deep sector at the end of 2009

They are given on the next table at the high 1.5 g/t cut-off (given the potential for underground rather than open-pit reserves). The cut-off is applied to the reconstructed average grade of all the material of the same len in the same parent block. Sub-blocks from different lenses in the same parent block are not merged to avoid dilution of high grade lenses (A, C, D and F) with surrounding low grade len B. The category (and ore type i.e. saprolite, saprock or bedrock) of the reconstructed block is selected as the dominant one in all the sub-blocks in the parent block. Those estimated resources apply to all the mineralized structures recognized in the Wona deposit north of 15,800N and below the current South and North final pits.

Sector	Cut-off (g/t)	Type	Category	Tonnes	g/tAu	OzAu
Wona Deep	1.5	Saprolite	Indicated1	9,000	2.1	600
Wona Deep	1.5	Saprolite	Indicated2	319,000	2.6	26,600
Wona Deep	1.5	Saprolite	Indicated	328,000	2.6	27,100
Wona Deep	1.5	Saprolite	Inferred	25,000	1.7	1,400
Wona Deep	1.5	Saprock	Indicated1	20,000	2.5	1,600
Wona Deep	1.5	Saprock	Indicated2	136,000	2.5	10,900
Wona Deep	1.5	Saprock	Indicated	157,000	2.5	12,500
Wona Deep	1.5	Saprock	Inferred	13,000	1.9	800
Wona Deep	1.5	Bedrock	Indicated1	3,582,000	3.6	410,500
Wona Deep	1.5	Bedrock	Indicated2	6,871,000	3.2	704,400
Wona Deep	1.5	Bedrock	Indicated	10,454,000	3.3	1,114,900
Wona Deep	1.5	Bedrock	Inferred	6,978,000	2.8	630,400
Wona Deep	1.5	All	Indicated1	3,611,000	3.6	412,700
Wona Deep	1.5	All	Indicated2	7,327,000	3.2	741,900
Wona Deep	1.5	All	Indicated	10,938,000	3.3	1,154,600
Wona Deep	1.5	All	Inferred	7,017,000	2.8	632,600

Estimated resources (before reserves) of the Wona Deep sector at the end of 2009

Resources given at the 1.5 g/t Au cut-off. Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

RR estimation – Resource summary (before reserves)

Once resource blocks or sub-blocks in a given deposit have been interpolated and properly classified, the resource statement for that deposit is simply the tally of all blocks and sub-blocks by ore type and category below the topo (or mining) surface at the cut-off date (December 31, 2009). Overall resources continue to be defined at the low cut-off of 0.6 g/t Au which corresponds to the lower limit for material currently sent to the mill from the open-pit operations. This cut-off is applied to the average grade of mineralized material in each block 5x5x3.33m of the open-pit sectors and 2.5x5x5m of the Wona Deep

Deposit	Type	Category	Tonnes	g/tAu	OzAu
F67	All	Measured	98,000	3.6	11,400
F67	All	Indicated	46,000	2.9	4,300
F67	All	M+I	144,000	3.4	15,700
F67	All	Inferred	51,000	2.7	4,400
Nyafe	All	Measured	1,083,000	5.6	193,600
Nyafe	All	Indicated	369,000	3.8	45,200
Nyafe	All	M+I	1,451,000	5.1	238,700
Nyafe	All	Inferred	676,000	3.4	74,200
Wona	All	Measured	6,568,000	2.5	536,600
Wona	All	Indicated	21,194,000	2.3	1,567,400
Wona	All	M+I	27,762,000	2.4	2,104,000
Wona	All	Inferred	12,018,000	2.1	830,500
Mana All	All	Measured	7,749,000	3.0	741,600
Mana All	All	Indicated	21,608,000	2.3	1,616,900
Mana All	All	M+I	29,357,000	2.5	2,358,500
Mana All	All	Inferred	12,744,000	2.2	909,100

Estimated resources (before reserves) of the Mana deposits at the end of 2009

Resources given at the 0.6 g/t Au cut-off. Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

RR estimation – Reserves

Mana reserves at the end of 2009 are simply the “modified” resources left in the final pits at the end of 2009. More precisely, they are the sum of recovered + diluted resources in 5x5x3.33m blocks within the final pit shell with a diluted grade above the corresponding marginal cut-off.

Deposit	Type	Category	Tonnes	g/tAu	OzAu
F67	All	Proven	77,000	3.7	9,100
F67	All	Probable	17,000	3.5	1,900
F67	All	Total	94,000	3.7	11,100
Nyafe	All	Proven	958,000	5.3	164,700
Nyafe	All	Probable	87,000	4.0	11,400
Nyafe	All	Total	1,045,000	5.2	176,000
Wona	All	Proven	5,934,000	2.5	482,800
Wona	All	Probable	988,000	2.8	87,500
Wona	All	Total	6,921,000	2.6	570,200
Mana All	Rompad	Proven	260,000	1.5	12,400
Mana All	All	Proven	7,228,000	2.9	668,900
Mana All	All	Probable	1,092,000	2.9	100,800
Mana All	All	Total	8,320,000	2.9	769,700

Estimated reserves of the Mana deposits at the end of 2009

Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

RR estimation – Remaining resources (or resources in addition to reserves)

In order to calculate the remaining resources in the open-pit sectors, we separate the overall resources (blocks 5x5x3.33m of the resource model below the topo surface at the end of 2009 and with an estimated gold grade of its mineralized fraction above 0.6 g/t Au) into resources within the final pit surface and resources outside that final pit. To the latter, we add blocks of the former with a diluted grade of their mineralized fraction below the reserve cut-off and the blocks with inferred resources (inside and outside the final pit). In the Wona Deep sector, the remaining resources are the resources before reserves (no reserves in that sector for the moment).

Deposit	Type	Category	Tonnes	g/tAu	OzAu
F67	All	Measured	30,000	2.2	2,100
F67	All	Indicated	31,000	2.3	2,300
F67	All	M+I	60,000	2.3	4,400
F67	All	Inferred	51,000	2.7	4,400
Nyafe	All	Measured	222,000	3.5	24,700
Nyafe	All	Indicated	292,000	3.6	33,500
Nyafe	All	M+I	514,000	3.5	58,300
Nyafe	All	Inferred	676,000	3.4	74,200
Wona	All	Measured	786,000	1.6	41,500
Wona	All	Indicated	20,241,000	2.3	1,477,700
Wona	All	M+I	21,028,000	2.2	1,519,200
Wona	All	Inferred	12,018,000	2.1	830,500
Mana All	All	Measured	1,038,000	2.0	68,300
Mana All	All	Indicated	20,564,000	2.3	1,513,600
Mana All	All	M+I	21,602,000	2.3	1,581,900
Mana All	All	Inferred	12,744,000	2.2	909,100

Estimated resources (after reserves) of the Mana deposits at the end of 2009

Resources given at the 0.6 g/t Au cut-off. Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

Interpretations and conclusions

Reserves of the Mana deposits at the end of 2009 are estimated to be 8.32Mt @ 2.9 g/t or 770koz. Those reserves are distributed among six different pits plus the Rompad. Most of those reserves are in the Wona South pit with 6.49Mt @ 2.5g/t or 521koz. This is followed by the Nyafe North pit with 0.50Mt @ 5.8 g/t or 93koz. Both pits entered into production in 2008 and reconciliation numbers for 2009 indicate that the proposed average grade estimates for reserves in those two pits are realistic. The third pit that went into production in 2008 is the small Filon 67 (or F67) pit, next to Nyafe north, with remaining reserves estimated at 0.09Mt @ 3.7 g/t or 11koz.

The balance of reserves is spread between the Wona North pit (0.43Mt @ 3.6 g/t or 49koz), the Nyafe Center pit (0.33Mt @ 5.3 g/t or 56koz) and the Nyafe South pit (0.21Mt @ 3.9 g/t or 27koz). Those three pits have not been exploited in 2009 and their reserve numbers are the same as at the end of 2008.

With a large fraction of resources recognized by drill holes on sections at 12.5m spacing, most of the above reserves are in the proven category (a total of 6.97Mt @ 2.9 g/t or 696koz not including the Rompad reserves). Proven reserves dominate probable reserves in all the pits except the Wona North pit which is all probable with its drill holes on sections at 50m spacing.

No new open pit reserves have been declared in 2009, hence the reserves at the the end of 2009 are those at the end of 2008 less the production of 2009 in the Wona South, Nyafe North and F67 pits with adjustments from reconciliation (see section 18-2-2).

Remaining resources at the end of 2009 are estimated to be 21.6Mt @ 2.3 g/t or 1580koz in the M+I category and 12.7Mt @ 2.2 g/t or 910koz in the inferred category, both at the 0.6 g/t cut-off. This represents a significant increase from the remaining resources at the end of 2008 i.e. 12.9Mt @ 2.5 g/t or 1020koz in the M+I category and 7.2Mt @ 2.2 g/t or 510oz in the inferred category, always at the 0.6g/t cut-off. This increase of 560koz in the M+I category and 400oz in the inferred category is mostly the result of the 2009 surface core drilling (about 37,500m in 106 holes) on the Wona Deep sector i.e. from 15,800N up to 19,000N. Resources above 0.6 g/t of that Wona Deep sector now stand at 19.0Mt @ 2.3 g/t or 1390koz in the M+I category and 11.1Mt @ 2.1 g/t or 760koz in the inferred category. Metal wise, the part of Wona Deep in the overall remaining resources at 0.6 g/t cut-off is 88% for M+I resources and 84% for inferred resources. Given the underground reserves potential of the Wona Deep sector, a more significant resource estimate would be at the higher cut-off of 1.5 g/t i.e. 10.9Mt @ 3.3 g/t or 1150koz for M+I.

Recommendations

Most of the recommendations that we had at the end of 2008 have been followed, in particular those dealing with the drill hole database in Access, the QA/QC samples, the reconciliation of production and projected reserves to adjust modifying factors and the classification of resources beyond the purely automatic approach. Some are still pending hence we would like to take the opportunity of this report to re-iterate them:

+ Additional drilling to firm up probable reserves at the bottom of the Wona south pit: a significant fraction of the reserve blocks at the bottom of the Wona South pit are in resource blocks with bedrock material the grade of which is extended from the last (deepest) hole on the drill sections. It is suggested to add one additional RC hole about 25m below the currently last (deepest) hole on sections at 25m spacing in order to firm up the grade estimates of those resource blocks which have some significant influence on the profile of the final pit on most sections of this South Wona sector.

+ Test mining and milling of saprock and bedrock ore: since more than 60% of the open-pit reserves (metal-wise) at the end of 2009 lies in saprock and bedrock, it is important to start a test program to verify the mineability (blast hole patterns, blasting efficiency...) and millability (throughput, recovery) of that type of ore. That program would also allow verifying the validity of the cost factors applied to that type of ore in the optimization studies, hence the derivation of their reserves.

Obviously, the next big effort in 2010 is to try and convert some of the new M+I resources of the Wona deep sector into underground reserves. We understand that a positive scoping study was completed in the summer of 2009 with a resource model derived from core hole results up to WDC99 and that a prefaisability study based on the resource model presented in these pages has been launched.

2- Introduction and terms of reference

Semafo Inc. (hereafter “Semafo”) is a Canadian mining and exploration company listed on the Toronto Stock Exchange (SMF) and with head offices in Montreal. Through wholly owned national subsidiaries, it has been operating the Kiniero gold mine in Guinea since 2002 and the Samira Hill gold mine in Niger since 2004. It also started the production of the Mana gold mine in Burkina Faso in early 2008.

Semafo has retained SGS Geostat Ltd (hereafter “Geostat”) of Blainville, Quebec, Canada to complete an independent technical review of the resources and reserves of the Mana gold deposits at the end of 2009. Geostat’s review was carried out and the report was prepared in compliance with the standards of the Canadian Securities Administrators’ National Instrument 43-101 (“NI 43-101”). Geostat is already the author of the NI43-101 Technical Report on the Ressources and Reserves of the same property at the end of 2008. This report was published in March 2009 and it is available on the Sedar site. Previous NI 43-101-compliant technical reports on the property have been produced on a yearly basis by Michel Cormier and by Michel Crevier, both Geology Directors for Semafo (see references).

In conducting this study, Geostat relied on unpublished internal reports and data supplied by Semafo.

Michel Dagbert, Geostat senior consultant, made a site visit of the Mana operations from November 10 to November 15, 2008.

Geostat received the full cooperation and assistance of Semafo personnel during the site visit and in preparation of this report.

A list of the material reviewed is provided in the "References" section at the end of this report.

3- Qualifications

The Qualified Person (QP) of Geostat for this technical review is Michel Dagbert.

Michel Dagbert has been associated with Geostat since the beginnings of the company in 1981. He has 35 years experience in resource and reserve estimation of mineral deposits using standard geometrical methods or more sophisticated geostatistical techniques. His experience with gold covers many types of deposits. He has participated as QP for resources in NI43-101 technical reviews of the Hope Bay deposits of Miramar in the Nunavut Territory of northern Canada in 2006 as well as the Joanna property of Aurizon Gold in the Abitibi region of Quebec in 2007-2009 and the Detour Lake deposit of northern Ontario in 2009. He is also the co-author of a Technical Report on the Resources and Reserves of the Kiniero gold deposits in Guinea at the end of 2007 for Semafo. His experience in estimating resources for saprolitic gold deposits of the Mana type includes Omai in Guyana for Cambior, Kiniero in Burkina Faso for Semafo, Bagama in Mali for New Mali Gold, Bakoudou in Gabon for Managem and Essakane in Burkina-Faso for IAMGold.

4- Disclaimer and reliance on other experts

Geostat prepared this study using the data, reports and documents as noted in the text and "References" at the end of this report. Geostat conducted an audit of the methods, parameters and documentation used by Semafo in the preparation of its Mineral Resource and Reserve estimates for the Mana gold deposits at the end of 2009.

Geostat did not prepare independent Mineral Resource and Reserve estimates for the Mana deposits. However, it is satisfied that those persons who prepared the estimates were qualified to do so and that the estimates are reliable. Geostat has performed punctual checks of the resource model by Semafo. In the end, Geostat accepts the estimates as supplied by Semafo.

Geostat has not verified title to the property, nor has it verified the status of Semafo's exploration agreements, but has relied on information supplied by Semafo in this regard. Geostat has no reason to doubt that the title situation is other than that which was reported to it by Semafo.

This report or portions of this report are not to be reproduced or used for any purpose other than to fulfill Semafo's public disclosure obligations. Geostat does not assume any responsibility or liability for losses occasioned by any party as a result of the circulation, publication or reproduction or use of this report contrary to the provisions of this paragraph.

5- Property description and location

5-1 Property location

The Mana gold deposits and mine are located in the southwest of Burkina Faso, in the provinces of Balé and Mouhoun at about 200km by road from the capital of Ouagadougou (Figure 1). The south part (Mana East and West and Fobiri II permits) is in the departments of Bana and Yaho (province of Balé) while the north part (Kona permit) is in the department of Kona (province de Mouhoun). Burkina Faso is a land locked country of Western Africa bordered by Mali to the north and west, Ivory Coast, Ghana, Togo and Bénin to the south and Niger to east.

5-2 Claim status

The Mana gold deposits are located within the limits of eight exploration permits and one mining permit granted in 2007 (Table 1 and Figure 2). Exploration permits are granted for 3 years renewable periods to Mana Minerals SA, a 100% subsidiary of Semafo while the mining permit is granted for a 20 years renewable period to Semafo Burkina Faso SA, with a 90% shares to Semafo and a 10% share to the Burkina Faso government. .

The mining permit covers the current open pit operations of Wona to the north and Nyafe to the south. It has been delineated within the limits of the old West Mana and Kona exploration permits, the limits of which have been modified accordingly. Also the limits of the Fobiri 2 permit to the southwest have been re-oriented along the EW and NS directions

Permit	Type	Attribution Date (dd-mm-yyyy)	Surface Area (km ²)	Quadrangle	Province
Mana	Mining	20-03-2007	93.5	Houndé	Balé
West Mana	Exploration	10-10-2005	167.9	Houndé	Balé
East Mana	Exploration	19-10-2005	241.07	Houndé	Balé
Fobiri II	Exploration	05-01-2009	220.10	Houndé	Balé
Kona	Exploration	31-05-2001	106.6	Dédougou	Mouhoun and Balé
Bombouela	Exploration	08-08-2002	250.0	Dédougou	Mouhoun
Bara	Exploration	10-10-2005	117.34	Dédougou	Mouhoun
Massala	Exploration	24-04-2003	248.68	Dédougou	Mouhoun and Sourou
Oulla	Exploration	27-10-2003	249.95	Dédougou	Mouhoun
Total			1694.6		

Table 1 List of exploration and mining permits



Figure 1 Map of Bukina Faso with location of Mana deposits and mine

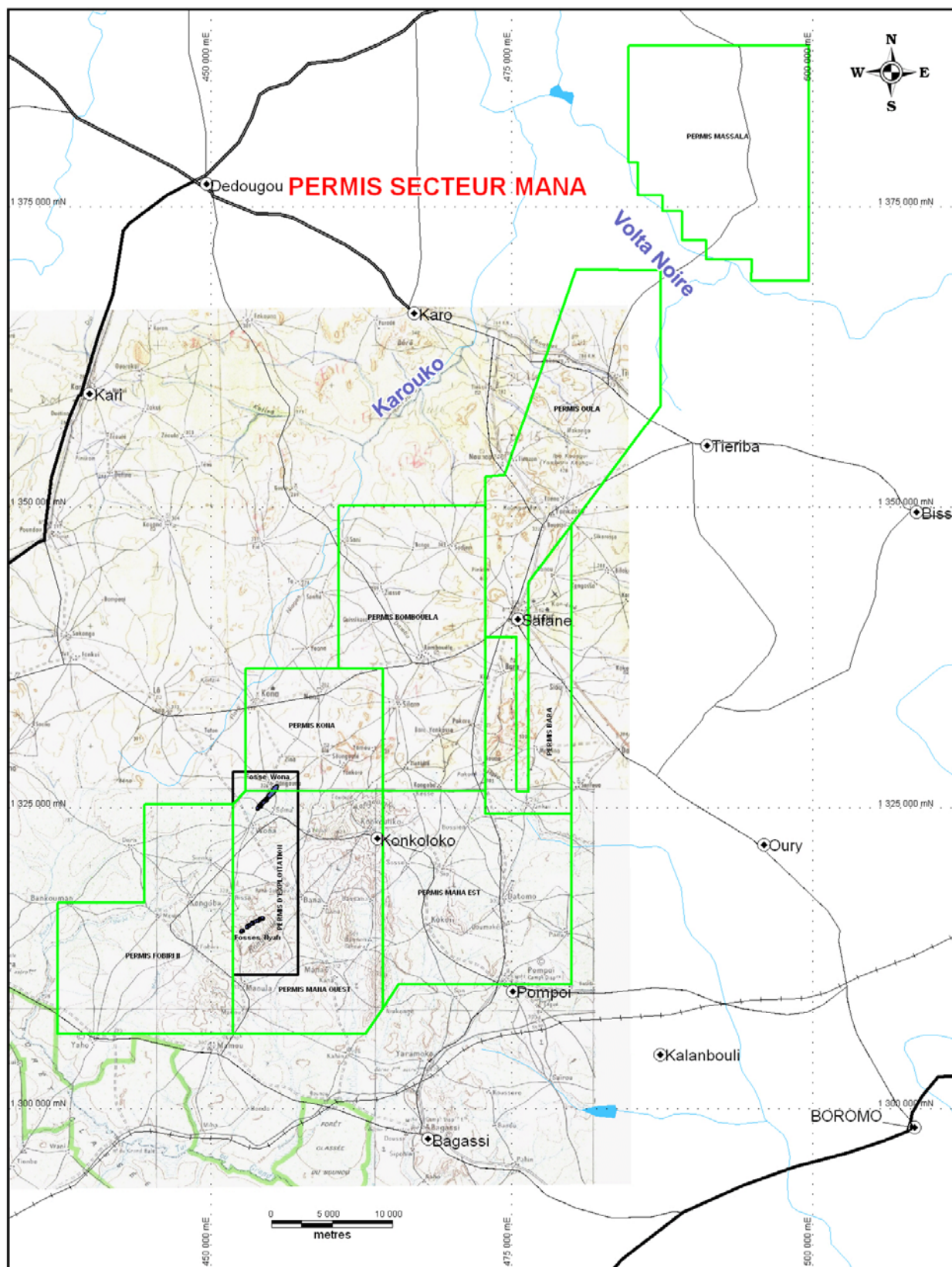


Figure 2 Map of Semafo permits in Burkina Faso

Limits of the eight exploration permits in green and those of the Mana mining permit in black

6- Accessibility, climate, local resources, infrastructure and physiography

6-1 Accessibility

The Mana deposits and mine are accessible by road from the capital city of Ouagadougou which is serviced by regular air flights to Europe and other African countries. The first 175km of the 270km trip is on the main paved road from Ouagadougou to Bobo Dioulasso. From Boromo, a rather wide and straight dirt road (R29) leads to Safane, about 60km to the NNW. At Siby, about 20km from Boromo, that road crosses the tracks of the railroad from Ouagadougou to the port city of Abidjan in Ivory Coast. That railroad has been contemplated for the transportation of heavy equipment but unfortunately traffic stopped in 2005 as a result of political troubles in Ivory Coast. Since then, it seems that it has resumed his operations but on an irregular basis and maintenance is considered poor. From Safane, a 30km stretch on another dirt road (D80) leads to the gates of the Mana mine and mill compound through towns and villages of Kona, Zina, Dangouna and Wona. Other shorter but in worse conditions dirt roads connect the site to the Ouagadougou-Bobo Dioulasso paved road i.e. through Bana, Mana, Bounou (on the railroad) and Bagassi (see Figure 2).

6-2 Climate

According to BBA (2005) and Crevier (2007), the climate is divided into a rainy season, from June to September and with most of the average annual 830mm rainfall, and a dry season from October to May. Dust winds from the north are frequent in February and March. Minimum and maximum temperatures are about 15°C and 40°C.

6-3 Local resources

Most of the national workforce (about 300 people) for the Mana operation lives in the nearby villages of Bana, Wona, Somona (moved to another location since too close to the mill), Yona, Fafina and Bissa in the Province of Bale to the south and those of Kona and Dangouna (partially moved since bordering the Wona pit to the north) in the Province of Mouhoun to the north.

6-4 Infrastructure

Since the opening of the Mana mine in March of 2008, Semafo has operated a 2000tpd and then (July 2008) a 4000tpd carbon in leach mill with crusher, ball mill, reactive cells, gold room and ancillary services (Figure 3). Mill capacity is being expanded to 6000tpd (planned for mid 2010). Close to the mill is the office building with computer, Internet and satellite phone facilities. About half a kilometre away to the east, Semafo has established a living camp for expatriates with mess, club etc.. Power is from diesel generators.

6-5 Physiography

Most of the area lays at elevations of about 350m with highs of 450m on several “lateritic” hills that dot the landscape. Those hills are mostly found to the southeast of the Fobiri 2 permit, the south of the Mana mining permit (with the Nyafe and F67 deposits) and most of the West Mana permit. The north part of the mining permit with the Wona deposit and mill compound is on fairly flat ground.

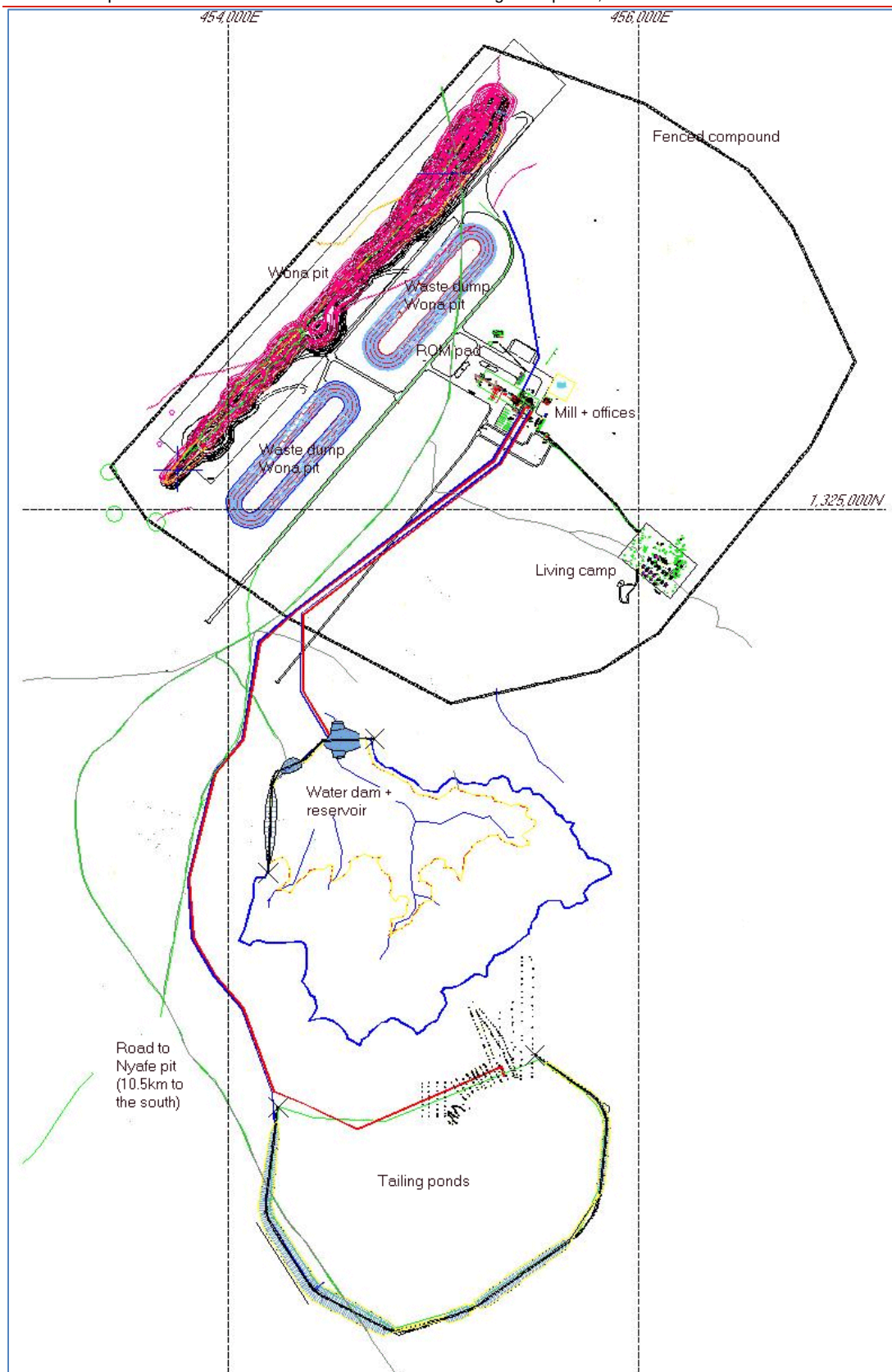


Figure 3 Map of the Mana mine and mill infrastructures in the Wona sector

7- History

According to Crevier (2007), exploration work by Semafo on Mana grounds started in October 1997. Work in 1998-1999 led to the discovery of the Nyafe deposit (to the south of the mining permit – see Figure 2). It included stream sediment and soil sampling of the BLEG (bulk leach extractable gold) type and lithogeochemical sampling in 62 trenches totalling 2078m, 37 RC (reverse circulation drilling) totalling 3198m and 5 core holes totalling 420m.

After acquiring the Fobiri permit in July of 1999, geochemical and geophysical (gradient induced polarization or IP and magnetometric) prospecting on the Mana and Fobiri permits help identify other anomalous zones i.e. the so-called 67 zone to the SE of Nyafe, the Maoula zone to the south and the Wona zone to the north. All those zones were elongated along the same NW-SE direction of the Nyafe zone. During that time (1999-2000) continuing detailed work on Nyafe (trenching, RC drilling, mapping, IP) helped delineate the extension of that zone toward depth (down to -130m with a network of thin parallel structures) and to the SW.

Detailed work on the Wona anomaly started in 2000-2001 with gradient IP on 16.9km of profiles, 22 trenches totalling 5826m, 35 RC holes totalling 2851m, 28 RAB (rotary air blast) holes totalling 1096m, CIL (carbon in leach) tests on RC hole material and a first resource estimate. Results confirm the extension of the Wona structure over a 1600m strike length with opening at both NE and SW extremities. As a result, an application for the Kona permit to the NE was filed in 2001.

In 2002, exploration work started with 2678m of RC drilling on both Nyafe (1332m) and Wona (1346m) in February and March of that year. Results from those holes as well as some additional CIL tests on drilled material led to an updated resource estimate. Additional work in June-July of that year concentrated on the search for extensions of the Wona (26 RCs totalling 1924m) and of Nyafe structure. A BUMIGEB aeromagnetic survey over the Kona permit was also completed. Its interpretation showed that the Wona lineament could extent over a 15km length, which led to the filing of an application for the Bambouela permit to the NE of the Kona permit.

Certification of the Wona and Nyafe resources (audited by M. Vallée in September of 2002) with holes on sections at 50m and then 25m spacing started in 2003 with 17,301 m of RC and 1319m of core drilling on Wona. In Nyafe search for SW and NE extensions continued and another 114 CIL tests were performed with RC hole material. A ground control of the aeromagnetic survey over the Kona permit was conducted with magnetometric prospecting and geochemistry with a 100x100m grid. Bleg prospecting was carried on the Bambouela permit.

A formal feasibility study and environmental impact study were initiated in 2004. Results of the feasibility study were made public in August of 2005 while the environmental impact study was completed in the third quarter of 2006.

In 2006, Genivar was awarded the detailed engineering and construction management contract. Mine construction started in the second quarter of 2006. Drilling continued in 2006m, mostly RCs but also 24 core holes to confirm the RC intersections.

A public hearing on environmental impact in the third quarter of 2006 led to a positive decision by the Ministry of Environment of Burkina Faso and the mining permit was granted in February of 2007. Mill start-up took place on February 15, 2008 with a 2000tpd ball mill and a first doré bar was poured on March 31, 2008. The 4000tpd ball mill started operation On July 29, 2008. In its first year of operation (2008), the Wona mill processed 773,670t ore with a reconstructed average grade of 3.63 g/t, equivalent to 2805.kgAu or 90,196 ozAu.

8- Geological setting

8-1 Regional geology

The Mana property is mostly covered by sedimentary, volcano-sedimentary and volcanic rocks of Birrimian age (paleo-proterozoic) from the so-called NNE-SSW Houndé belt (or syncline) within the West African craton which occupies most of Burkina Faso. Throughout the country, several of those greenstone belts dissect the craton and they play host to recognized gold deposits. Sedimentary, volcano-sedimentary and volcanic rocks in the belts are metamorphosed in the greenschist facies and they have been subject to a least two deformation phases (a syn – and a post-schistous). Limits of belts with contiguous plutonic rocks correspond to shears of generally NE-SW direction associated to those phases. A cover of flat lying neo-proterozoic and cenozoic sediments appears a few kilometres to the west of the Houndé belt western limit.

8-2 Local geology

Material for that section is originating from Gaboury (2007 + 2008) as well as Semago (2010) and supported by a field visit with inspection by the author in November 2008, of outcrops in the Wona, Nyafe and F67 pits as well as cores from holes drilled in the Wona Deep sector.

The Wona deposit is hosted in a series of highly deformed sedimentary (black pelites), volcano-sedimentary and meta-volcanic rocks. The gold mineralization has developed along a major NE-SW sub-vertical fault zone of regional extension. Thickness of that zone is about 200m in the Wona South pit sector. The original stratigraphic sequence (Figures 4 and 5) is a succession of pelitic sediments with graphitic horizons and volcanoclastics. They have been affected by a pervasive S1 schistosity which would be associated to vertical movements along the fault (the east block raising with respect to the west one) as well as sinistral lateral movements. Those foliated rocks are cut by mafic to intermediate dikes, themselves foliated (S2 schistosity parallel to S1). The mineralization itself would be associated to a posterior lateral movement along the fault with hydrothermal fluid circulation and intense silicification.

The Nyafe deposit is hosted in a purely volcanic sequence with basalt and mafic to intermediate tuffs. From the observed morphology of pillows, the original stratigraphic sequence is sub-horizontal but upside-down with pillow lava at the bottom, then pillow breccias and finally massive lava at the top. Pillows show a dark ferrous chloritic border suggesting some hydrothermal alteration of volcanogenic origin similar to what can be observed in the Kiniero deposit mined by Semafo in Guinea (Geostat, 2008). Several sub-vertical decametric dikes cross the volcanic sequence, in particular a N-S dike of felsic porphyric nature (with quartz phenocrysts) and two mafic dikes on both sides of the pit and parallel to the mineralization.

The Filon67 deposit, next to Nyafe (see next section) is made of typical quartz veins associated to shear zones with dextral motion within a package of greenschist rocks. Those composite veins show texture of several successive fillings.

Like it is usually the case for outcropping mineral deposits under a tropical climate in general and western Africa in particular, the rock package hosting both Wona and Nyafe deposits has been subjected to intense meteoritic alteration with the development of a saprolitic zone near the surface. Saprolite is a multicolored soft material, which results from the kaolinization of original feldspars in volcanic rocks. In the saprolite, iron sulfides are also generally transformed into iron oxides or hydroxides hence the generally yellow-brown color of the mineralized saprolite.

Thickness of the saprolite is quite variable from just a few meters down to more than 50m. In Wona, the transition between the saprolite and the fresh rock has been made as a specific horizon of so-called sap-rock, with preserved original structures and sulfides but which can be scratched the blade of a knife.

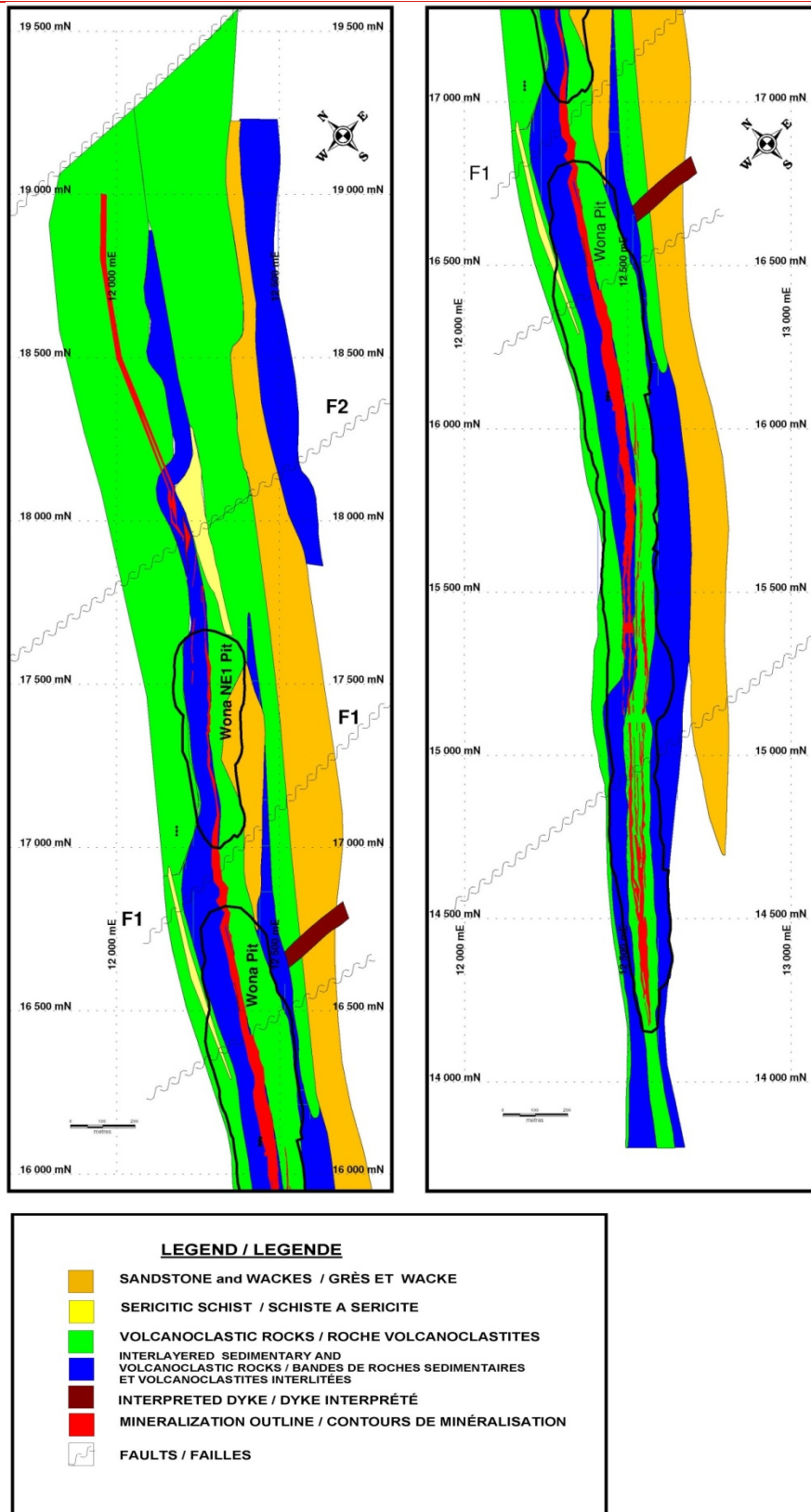


Figure 4 Surface geology of Wona

From Semafo (2010).

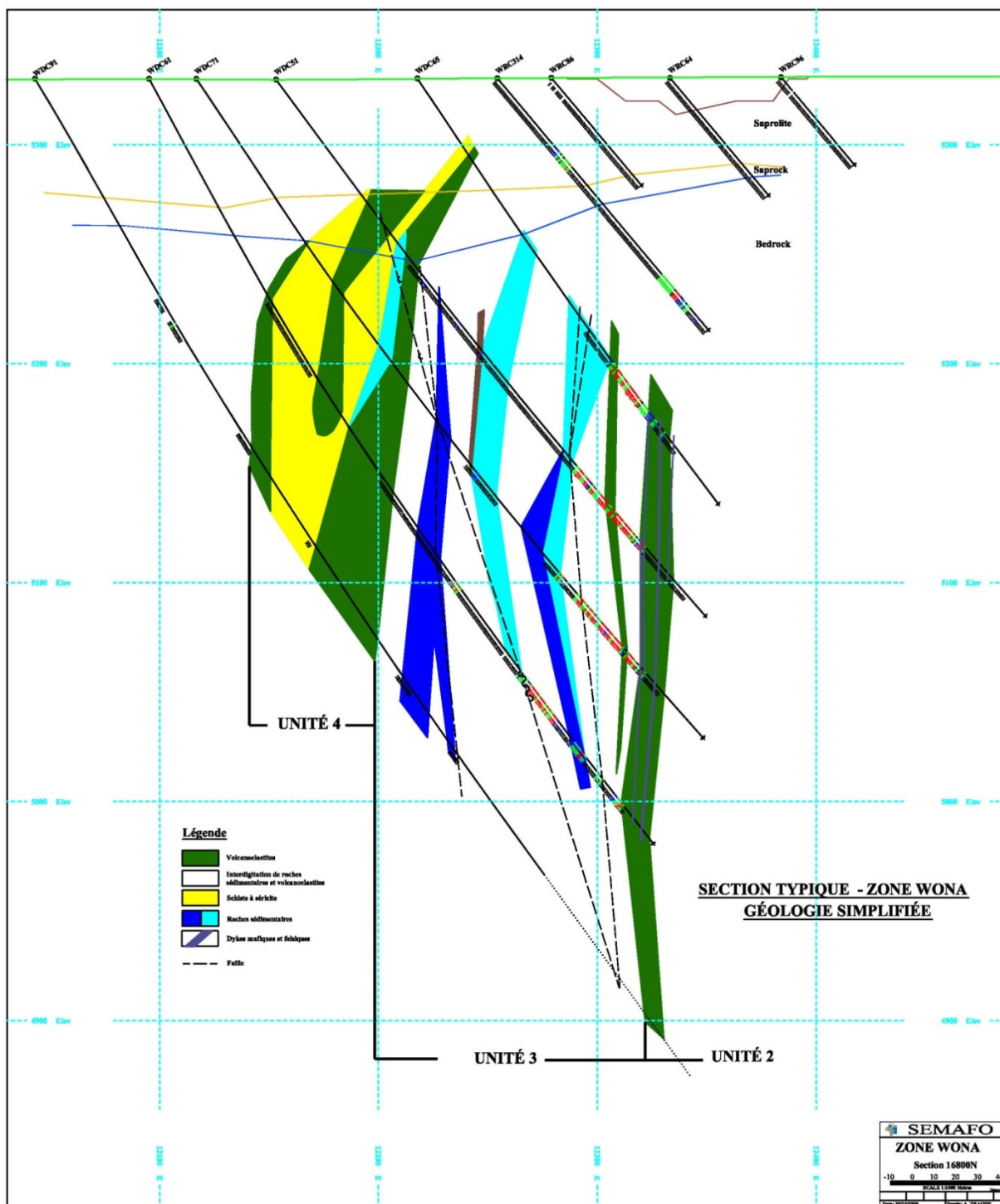


Figure 5 Simplified geology of Section 16800N of Wona

From Semafo (2010). Units (“Unités”) 2 and 4 are green volcanoclastics. Unit 3 is a sequence of volcanoclastics and sediments (grey graphitic shales in blue). The top? volcanoclastic unit 4 is cut by a body of sérinite schists (in yellow) dipping to west. Unit 1 to the east (not showing on the section) is a sequence of highly schistosed sandstones and greywackes. The gold mineralization is concentrated around the contact of unit 2 and 3

9- Deposit type

Three separate deposits have so far been recognized on the Mana property (Figure 2). To the north and next to the processing plant, we have the Wona deposit. About 10km south of Wona, we have the Nyafe deposit. Next to Nyafe and about 300m to the southeast, we have the so-called Filon67 deposit.

The Wona deposit has been traced over a distance of 4.7km along the N46 direction (from N14200 to N18900 of the local grid with the same N46 azimuth for the local NS axis). The plan view of the modeled mineralized zones (Figure 6) shows some changes in the strike direction of the orebody i.e. almost N-S (local grid) from 14200N to 16000N, then N352 (local grid) from 16000N to 17000N, again N-S (local grid) from 17000N to 18000N and finally N352 (local grid) again north of 18000N. Cross-sections at regular 400m N-S spacing from 14600N to 18200N (Figure 5) show that interpreted mineralized zones are sub-vertical with a slight dip to east at the south extremity (14600N) and then a slight dip to west from 15800N to 16600N. The major mineralized zone (Zone 9 in Datamine internal nomenclature or len A on Figure 6) runs along most of the full strike length of the deposit. It can be fairly thick (up to 35-40m) in the north part (section 15800N and 16200N), especially close to the surface or at the south extremity (section 14600N). More to the south, as this main zone gets thinner, additional parallel zones appear to the east of the main zone. Those satellite zones are generally just a few meters thick. On some sections (14600N), we can have up to 4 satellite zones in addition to the main zone to the west. To the north and at depth (Wona Deep sector), Mana geologists have identified several high grade lenses in addition to the high grade core of Zone 9 called len A. They are lenses C,D and E. All those high grade lenses are sub-parallel and within the same low grade halo dubbed len B. This package extends north of 17,800N with new lenses dubbed R, S-T and finally V on Kona grounds.

The Nyafe deposit has a 2.4 km extension along the N-S of the same local grid as Wona (i.e. a real N46). However, it looks interrupted in two places (around 23600N and 24200N) thus making a natural division into a North, Center and South sector (Figure 8). General strike is about N15 (in the local reference system) but, like in Wona, it varies from south to north with a N25 in Nyafe south a N5 in Nyafe Center and a N15 in Nyafe north. In the Nyafe South, Nyafe Center and the south of Nyafe North, the geometry of mineralized zones is rather simple with a single structure strongly dipping to west (tagged as Zone 18 in the South, Zone 2 in the Center and Zone 11 in the north – see Figures 9 and 10) and locally some satellite structures with about the same orientation (Zone 39) or much flatter (Zone 42). To the north of 24600N and up to 25250N, the orebody is characterized by several oblique structures within a corridor delimited by two main zones: to the west, a generally thin zone (continuation of the Zone 11 further to the south) with a N10 strike and a strong dip to west (about 80°) and to the east a generally thick zone (Zone 9) with a N20 strike and a lower dip (about 60°) to the west. In the same way as they do it on surface at 24600N, those two zones may merge at depth. Because of the different orientation, the distance between the two zones on surface is increasing to the north to reach about 90m at 25200N. While the west zone 11 shows some interruptions, the east Zone 9 is visible all along its strike length. It also has several appendices or satellites with about the same orientation (Zones 1, 4, 17 and 25). Between those two limiting structures, we have some oblique zones of particular interest. Zone 3 is a rather thick structure striking N40 and dipping 60° to NW. It connects Zone 11 and Zone 9 in the sector between 25000N and 25100N. Zone 6 is a thinner structure with a N350 strike and 55° dip to west. It looks like cut (and displaced) by the previous Zone 3. All those structures with different orientations generate a “losangic” pattern when intersected by the same level (Figure 10) between 25000N and 25200N and above Z=5350.

As indicated before, the Filon67 or F67 orebody lies almost parallel to the Nyafe orebody, about 300m to the east (local grid). It strikes almost NS over a length of about 500m. It is made of two main zones (Zone 10 to the west and Zone 9 to east) with about the same dip (60° to 70°) to the west (Figure 11). In the center (24100N and 24200N), those 2 structures are very close and they may merge at depth. Toward both extremities, there are further apart, leaving room for flatter satellites (Zones 53 and 6).

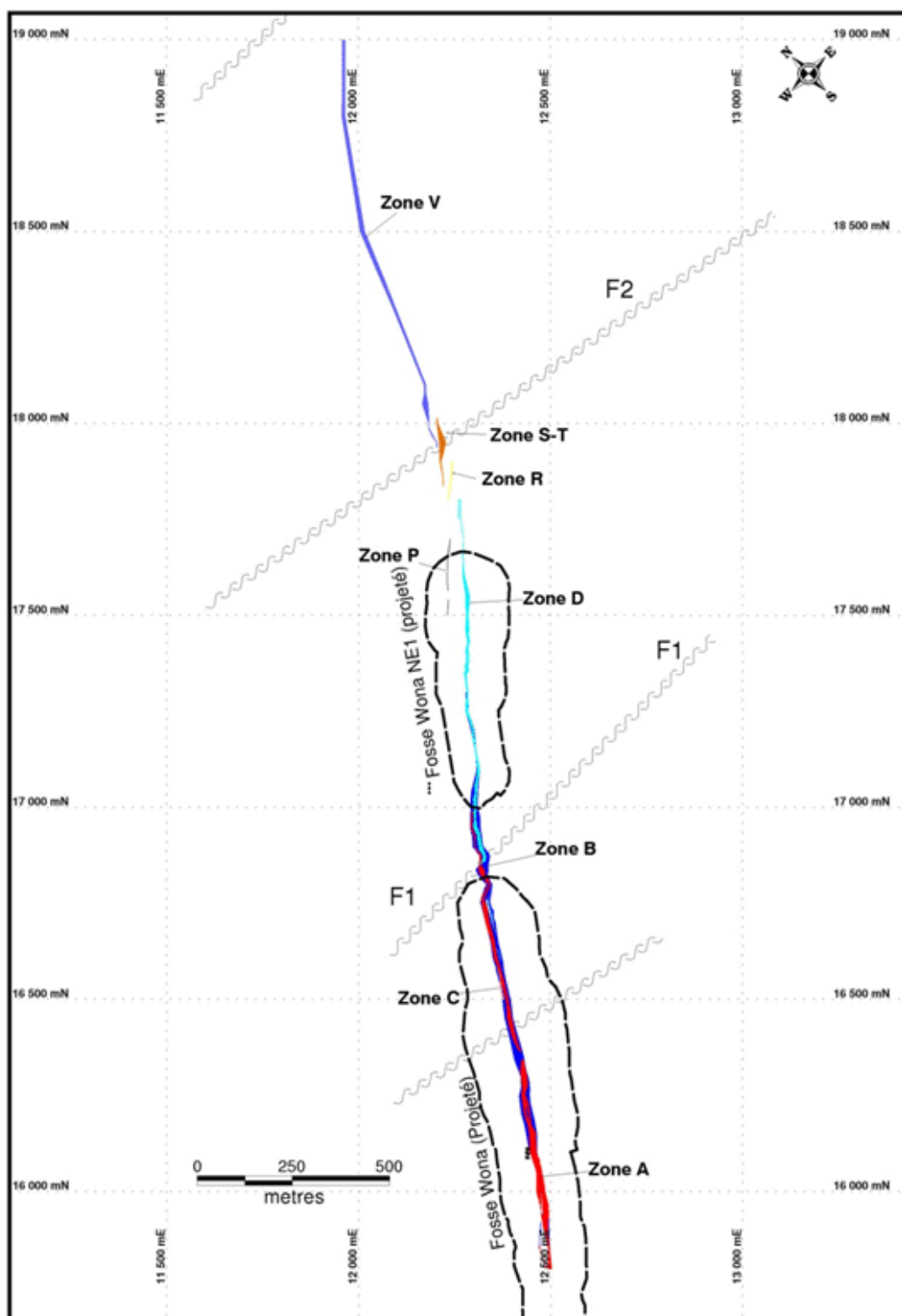


Figure 6 Mineralized lenses of Wona in level at Z=5250 (80m below surface)

From Semafo (2010).

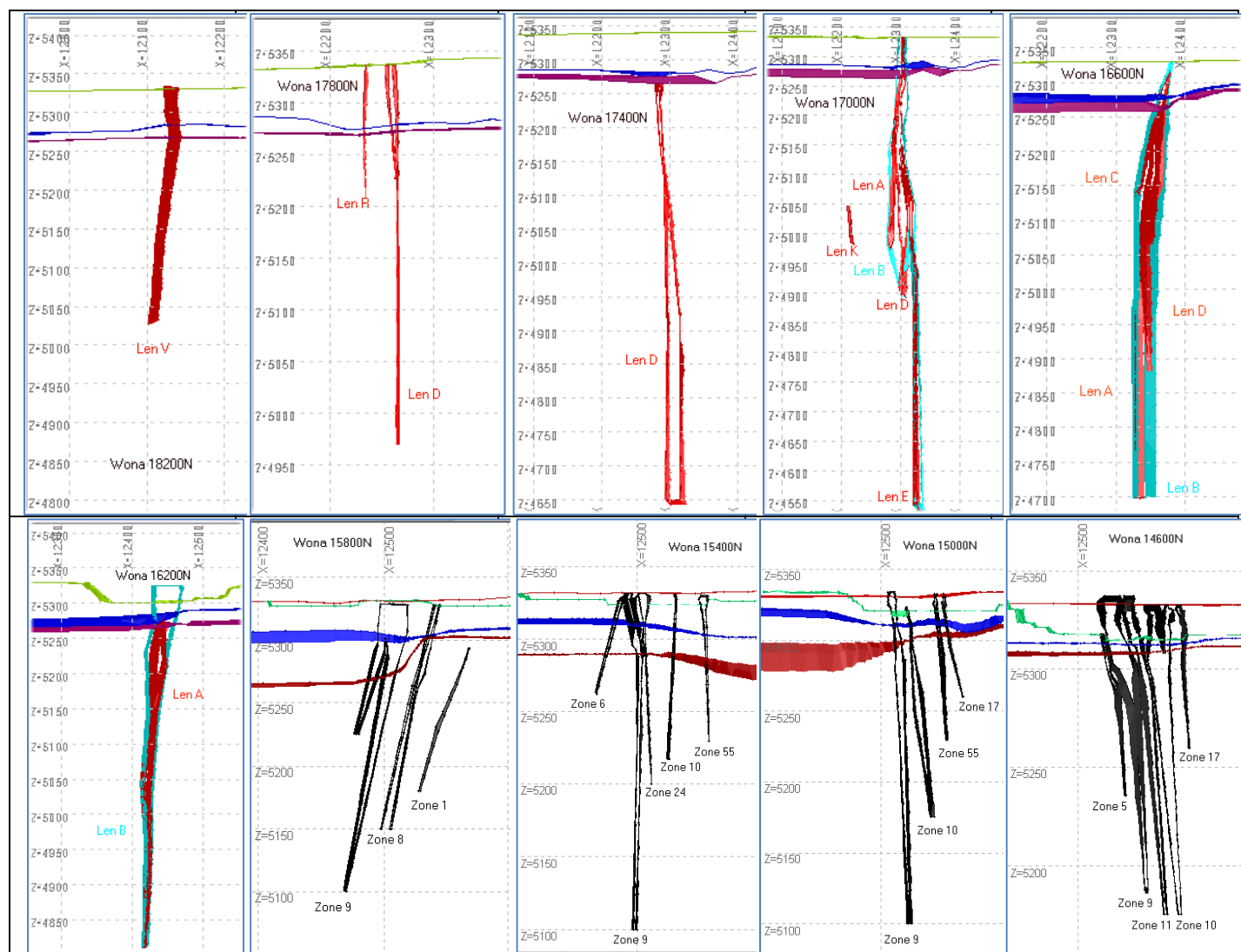


Figure 7 Cross-sections (EW local) through Wona zones and surfaces

Section corridors = ± 25 m. Mineralized zones or solids outlined in black (south part) and red/blue (north part). Surfaces : green = pit bottom at the end of 2009, red = laterite/saprolite contact (south part only), blue = saprolite/saprock contact, brown = saprock/fresh rock contact

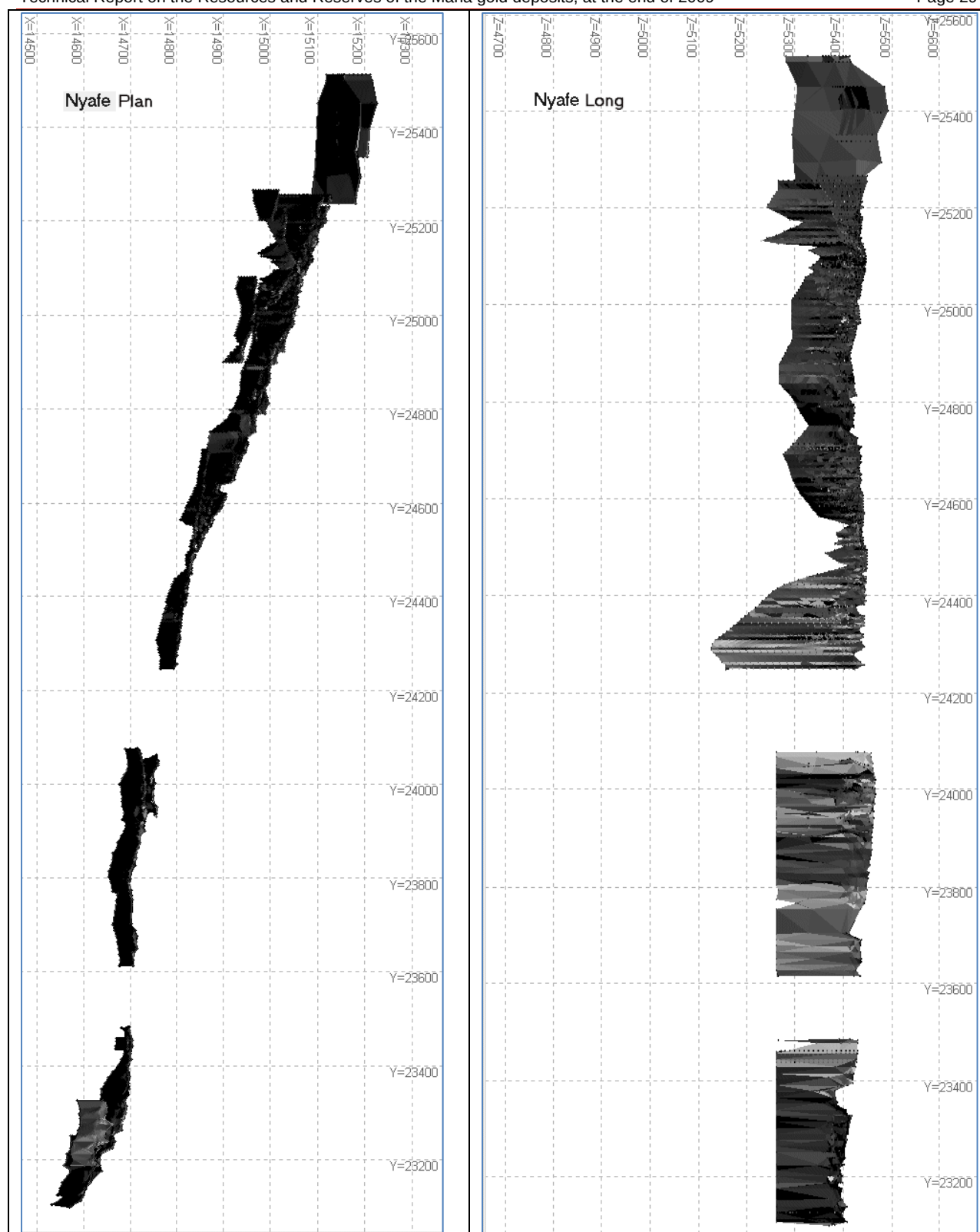


Figure 8 Planview and long section of mineralized zones in the Nyafe deposit

Section corridors = +/- 6.25m. Mineralized zones or solids outlined in black. Surfaces : green = Original topo and pit bottom at the end of 2008, blue = oxide/sulfide contact

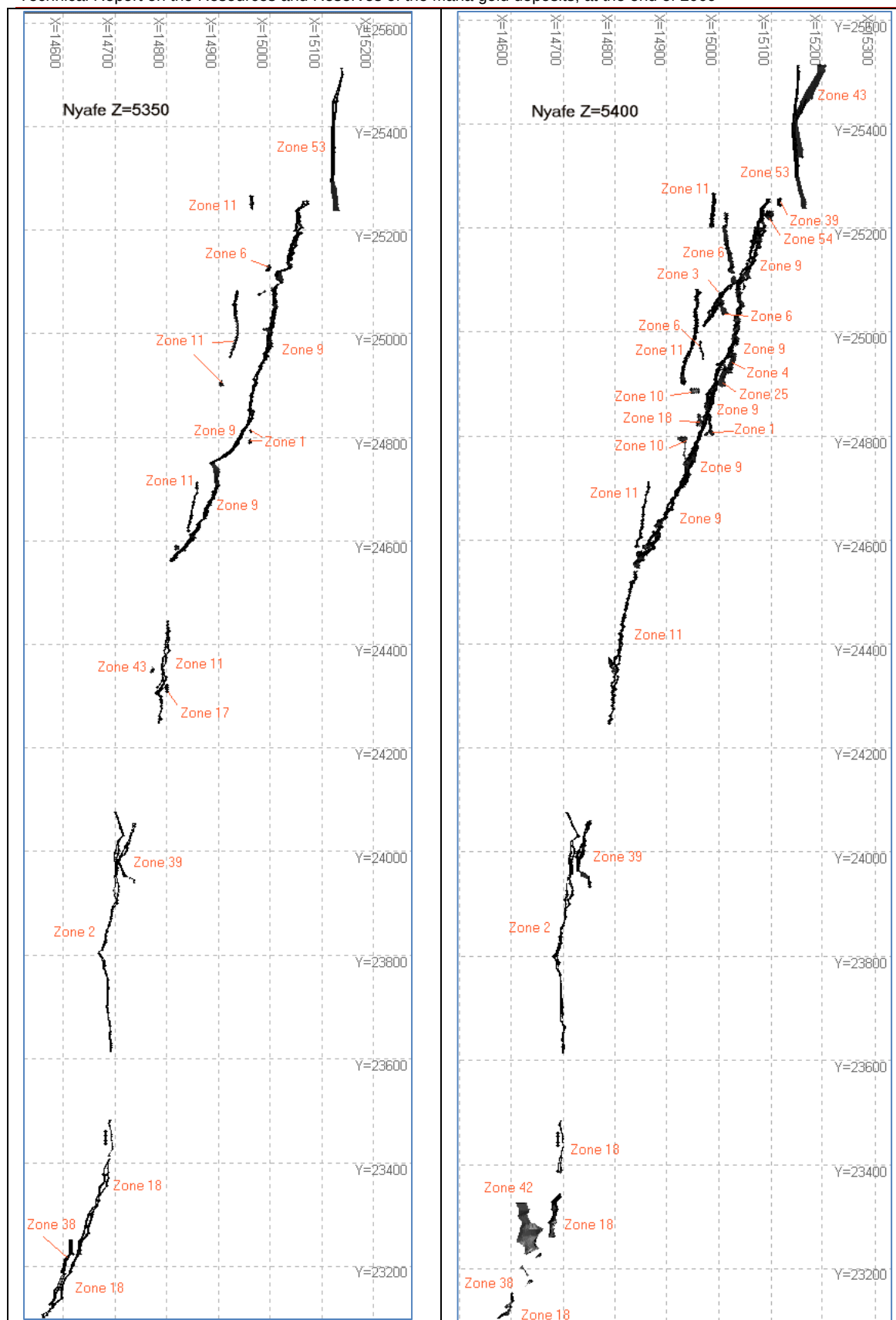


Figure 10 Trace of the mineralized zones of Nyafe on two levels

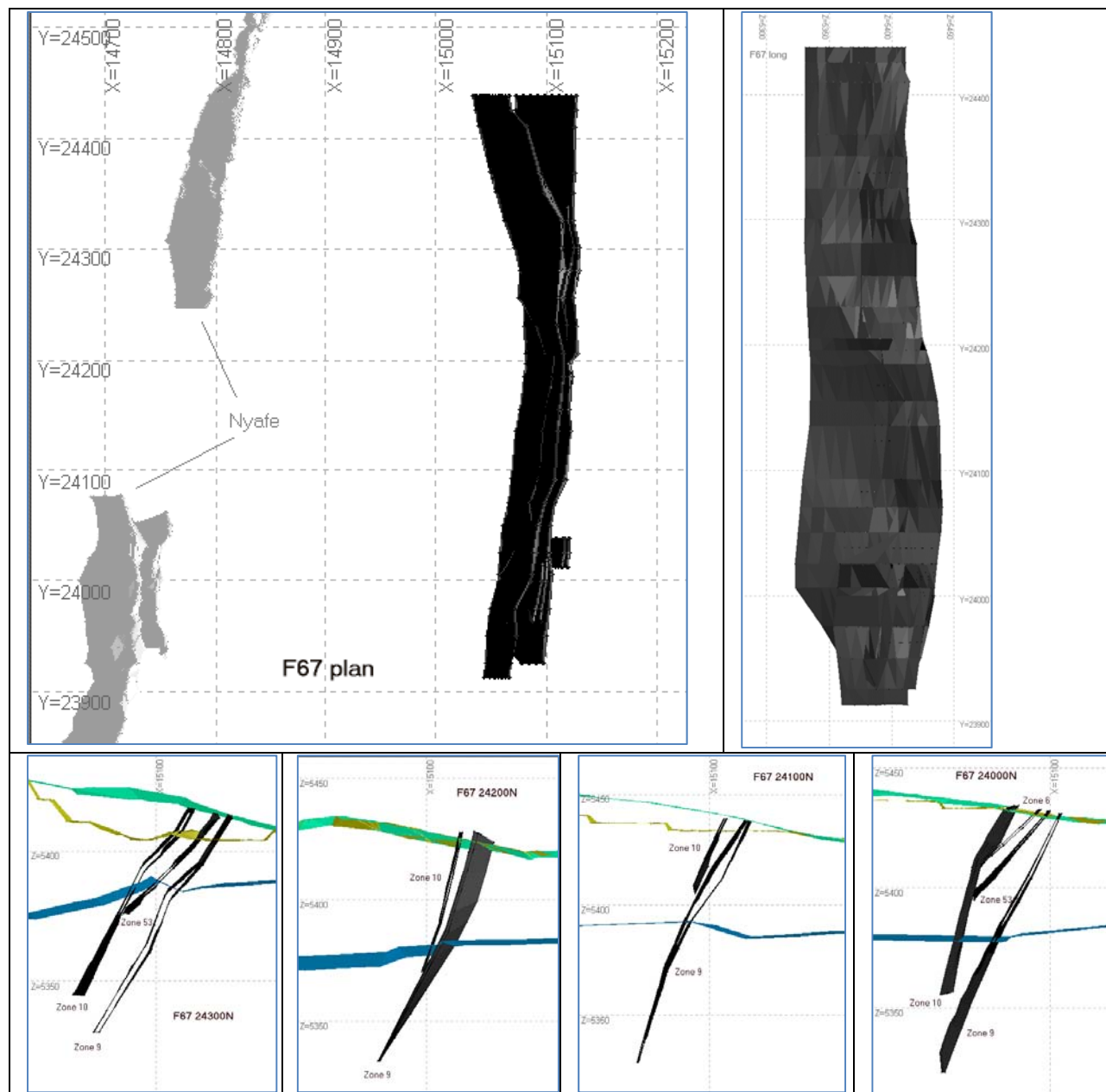


Figure 11 Planview, long section and cross-sections (EW local) of the Filon67 deposit

Section corridors = $\pm 6.25\text{m}$. Mineralized zones or solids outlined in black. Surfaces: green = Original topo and pit bottom at the end of 2008, blue = oxide/sulfide contact

10- Mineralization

According to Gaboury, 2007, the Wona mineralization occurs as disseminated pyrite and arsenopyrite in highly deformed and silicified meta-sedimentary of meta-volcano-sedimentary rocks. Locally, silicification is so intense as to form massive quartzitic bodies, even in the saprolitic horizon, which necessitates some blasting to mine the ore at those places.

From the observation of cores in fresh rocks, Gaboury, 2008 noted that the mineralization is often associated with carbonates (siderite, ferruginous dolomite) which turn brown when exposed to air whereas those carbonates are more like orange and then yellow as we move away from the mineralization over about 10m. That change of color is likely link to a change in Fe, Mg and Mn composition of carbonates. Carbonates tend to follow the schistosity plans. Gaboury, 2008 suggests that the pervasive carbonatization may have favoured the gold mineralization by impermeabilizing the deformation corridor and thus concentrating the mineralization fluids within that corridor.

In addition to quartz and carbonates, other hydrothermal alteration minerals found at Wona are ferriferous chlorite and séricite (Figure 12). As mentioned above, sulphide minerals associated to the mineralization are pyrite (which may reach 10% in modal composition) and arsenopyrite. Magnetite as small millimetric prisms along schistosity plans is found in the walls of mineralized zones. Transition of magnetite to pyrite is gradual. In general, there is correlation between sulphide concentrations and gold values.

Graphite is also associated to mineralization. Its role in the mineralizing process is both chemical (reduction of sulphide compounds into pyrite and precipitation of gold) and physical (weak zone favouring shearing).

According to Crevier, 2008, gold at Wona shows as : (1) pure gold in hematite (from pyrite oxidation) with 1-2 microns size (2) native gold (92%Au+8%Ag) in pyrite with 5 microns size (3) free native gold in quartz with 1-10 microns size (4) gold in the petzite telluride (Ag_2AuTe). Gold grain size analysis by Mintek on a 300kg metallurgical sample indicates that most gold particles are in the 0-5/5-10/10-15 microns size classes but they also found one coarse gold grain of 64 microns size (which accounted for 62% of the gold in all retrieved particles).

The Nyafe mineralization is also associated to pyrite and arsenopyrite disseminated on the edge of millimetric veinlets of microcrystalline grey quartz. Folded carbonate veinlets cross the mineralization.

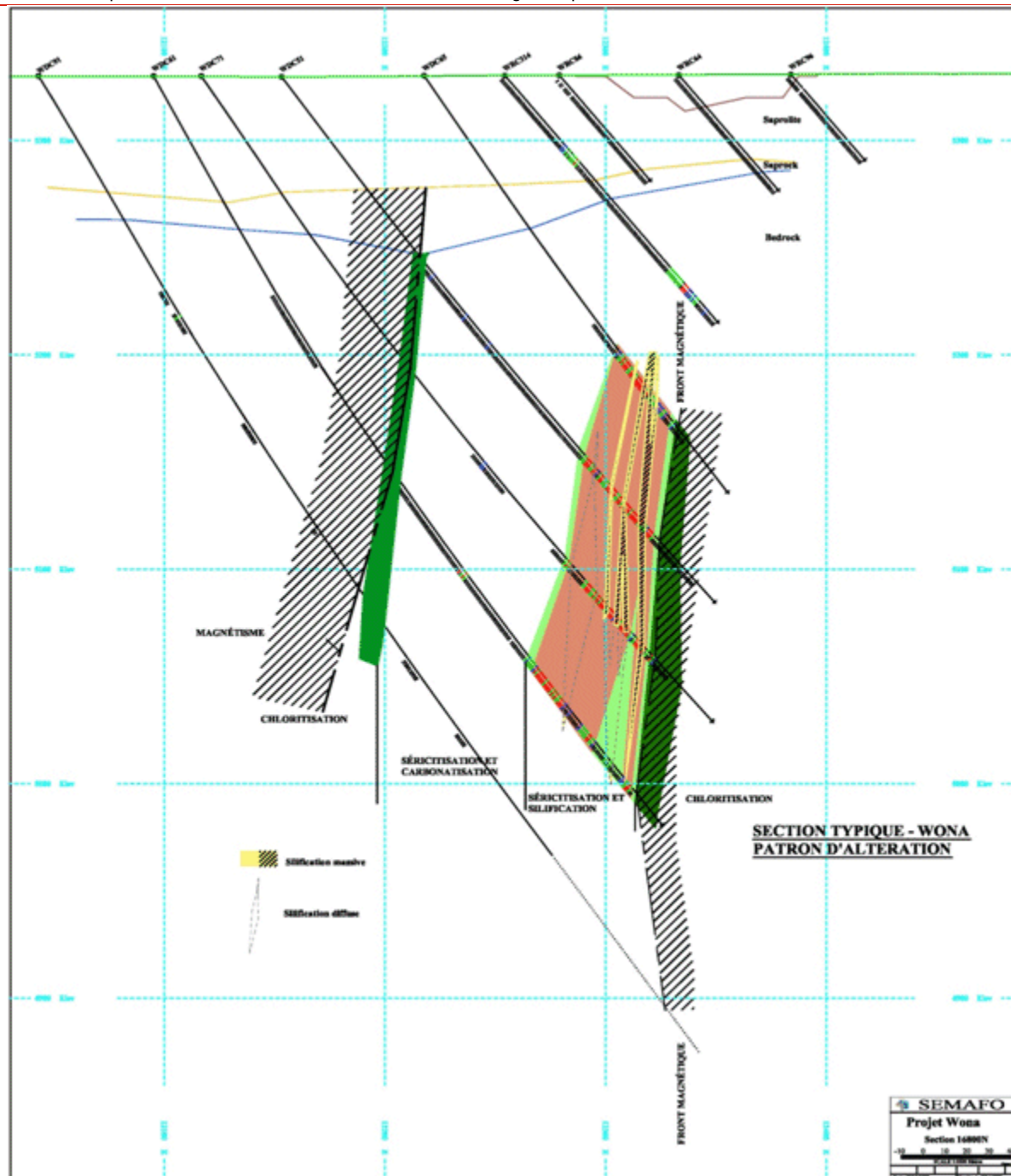


Figure 12 Alteration patterns on Section 16800N of Wona

From Semafo (2010). Chloritization is strong on both sides of the mineralized corridor i.e. units 2 and 4 of Figure 5 which are mostly volcanoclastics. It defines the limits of the hydrothermal system. In unit 3 (sediments + volcanoclastics), we have a moderate séricite+carbonate alteration on the west side going into a strong séricite+silice alteration on the east side. Epidote is also present in that corridor in variable proportion. The eastern limit of the hydrothermal system is also marked by a magnetic front.



Picture plate 1 Mana pits

Top left : view of Wona pit to the south from its northern extremity at about 16800N. Top right: band of hard ore in saprolite in the north part of Wona pit. Bottom left: channel sampling of the top of a bench in F67 pit. Bottom right: marking of a mineralized band on a Wona bench (with view to south end of Wona pit). Pictures taken by the author in November 2008.

11- Exploration

It is worth recalling that the initial discovery of the Nyafe and Wona deposits is the result of geochemical exploration. It started with a large scale stream sediment survey (spacing of about 1km along streams) with BLEG processing (2kg of sediments leached in an agitated bottle) of samples. That campaign showed two strong anomalous points (over 1000 ppb) over Nyafe but weak anomalies over Wona. This was followed by a soil sampling survey on a 200x100m grid (down to 50x25m) that showed clear anomalies on the three pieces of the Nyafe deposit (see sections above) but only a weak anomaly (62 ppb Au) on Wona which was ultimately discovered with the TW4 trench.

As a result of this past experience, exploration on Mana permits generally start with stream sample geochemistry on a large scale followed by soil sample geochemistry (and some rock sample geochemistry) on fixed grids of decreasing size. Ground geophysics (IP profiling) is also used to test extensions of known large scale structures. The next step is auger or RAB drilling on fixed grids in order to reach the saprolite below the generally transported lateritic cover. Ultimately, RC drilling will test anomalies at depth. A summary of exploration activities in 2009 (from Mana Minerals SA, 2009) is on Table 2. It also includes core drilling on the Wona deposit (on Mana mining permit and Kona exploration permit).

In 2009, several Auger drilling programs have been completed on geochemical or geophysical anomalies in several exploration permits. Auger holes are generally drilled every 25m along profiles. Two 2kg samples are taken in each hole, one at the laterite/saprolite interface and the other in the last 2m in saprolite. Their gold content is generally assayed by the BLEG bottle lixivation method at the ALS-Chemex lab in Ouagadougou. Those programs were:

- + Mana mining permit : southwest extension of Wona deposit, south of Wona village with 354 holes over two parallel aeromagnetic lineaments.
- + Mana mining permit : Fofina grid NW of Nyafe by sub-contractor Coffey Mining from Ghana with the delineation of an anomalous axis to the NE
- + Mana West permit : 5 EW and about 900m long profiles at 500m spacing across a 1.5km wide corridor with anomalous Au-As geochemical values south of Bassana village plus two 900m long SE-NW profiles over geochemical anomalies north and northwest of the same village. All assay results are negative.
- + Mana East permit : 900m long SE-NW profile over geochemical anomaly. Results are negative
- + Massala permit : two sectors with geochemical anomalies north and south of Dama village drilled on 1625m long lines at 200m spacing by sub-contractor Coffey Mining from Ghana. In the two sectors, axes with anomalous gold values have been delineated.
- + Fobiri permit : grid over the southwest extension of Nyafe with two anomalous axes delineated

A 555m long and another 450m NW-SE trench have been dug over anomalous Auger drilling result on Fobiri permit with 337 samples collected, several with grades above 1 g/t.

A helicopter borne low altitude high resolution geophysical survey (magnetic+radiometry) has been completed by Fugro over a 1015 km² area covering all permits except Massala (Figure 13). Survey lines were along N131-N221 and spaced at 100m interval. A total of 11,520km have been flown in August and September 2009. The interpretation of the results of this survey was not available at the time of this writing.

Permit	Type of work	Units	Total
Mana (Mining)	DDH	m	34,986
	Auger	m	8,844
West Mana	Auger	m	1,409
East Mana	Rock geochem	# samp.	6
	Auger	m	324
Fobiri	Auger	m	4,937
	Trench	m	1,003
Kona	DDH	m	2,363
Bombouela	Mapping	km2	14.99
	Rock geochem	# samp.	6
Massala	Auger	m	6,088
8 permits	Heli geophysics	km	11,520
Total	DDH	m	37,348
	Auger	m	21,602
	Trench	m3	1,003
	Heli geophysics	km	11,520
	Mapping	km2	14.99
	Rock geochem	# samp.	12

Table 2 Summary of exploration work in 2009

Compiled from Mana Minerals SA, 2009

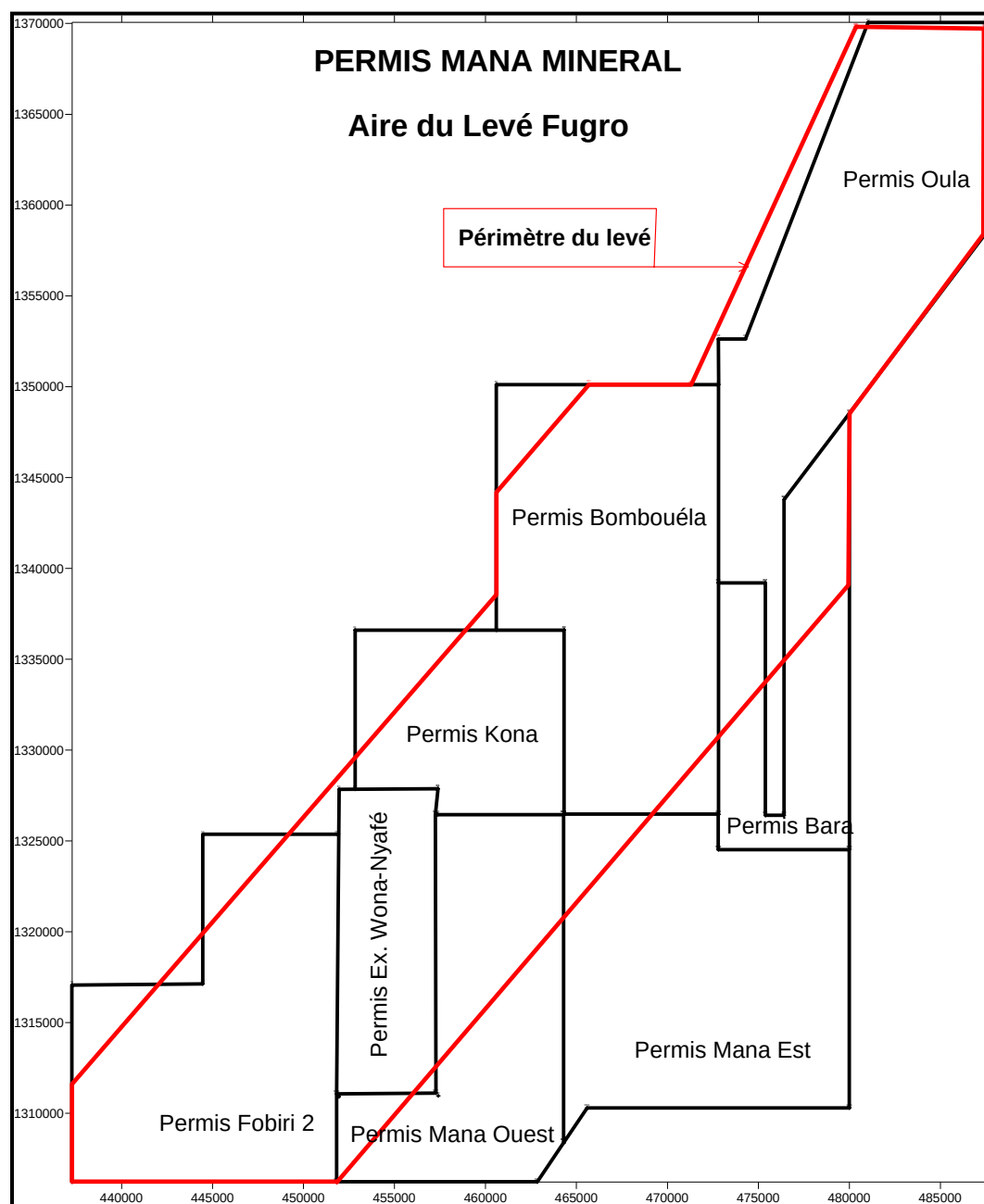


Figure 13 Limits of 2009 helicopter borne geophysical survey by Fugro

From Mana Minerals SA, 2009

12- Drilling

The drilling method of choice for the shallow sectors of the Mana deposits to be mined in open pits is reverse circulation. It is normally contracted to Forages Technic-Eau out of Ste Julie, Quebec (with a base in Burkina-Faso), West African Drilling Services (WADS), part of the Layne Christensen group out of Kansas with offices in Mali and Ghana and Boart Longyear through recently acquired St Lambert Drilling with an office in Ouagadougou.

According to information in the drill hole database at the end of 2009, there has been at least 1645RC holes totalling 112,805m (711 and 55,285m on Wona deposit and 934 and 57,520m on Nyafe and F67 deposits) which have been drilled on the Mana property by Semafo. They are normally drilled at 50 -60° dip angles to intersect the sub-vertical mineralized structures.

There was no RC drilling on Mana grounds in 2009.

Core drilling provides geological information not available on RC chips. It also provides material for metallurgical testing as well as reference material for checking RC sample grades around. It is also the drilling method of choice for the deep sectors of the Wona deposit which would eventually be mined by underground methods.

According to information in the drill hole database at the end of 2009, there has been 227 core holes totalling 66,240m (185 and 59,920m on the Wona deposit and 42 and 6320m on Nyafe and F67 deposits) which have been drilled on the Mana property by Semafo. Most of those holes are of NQ core diameter (generally starting with HQ diameter). Like for reverse circulation holes, they are normally drilled at 50-70° dip angles to intersect the sub-vertical mineralized structures.

Core drilling in 2009 on the Mana mining permit concentrated on the deep NE sector of Wona with the aim of a 50x50m grid of intercepts on the N-S long section between 16600N and 17200N. It started in April with holes WDC80-83 (1276m) on sections 16,850N and 16,950N. In May holes WDC83-90 (2410m) were drilled on sections 16000N, 16700N, 16,850N, 17050N and 17150N. In June, a second drill was added and holes WDC90-100 (3361m) were drilled on sections 16200N, 16700N, 16750N, 16800N, 16900N, 17000N, 17100N, 17150N and 17200N. In July, with now 3 drills, holes WDC99-110A were completed and holes WDC111-113 were started (total 4632m including 151m on Kona permit) on sections 16500N, 16600N, 16650N, 16700N, 16750N, 16900N, 16950N, 17050N, 17100N, 17250N, 17700N and 18100N. The 3 drills continued to operate in August with the completion of holes WDC111-127 and the starting of WDC128-130 (total 6827m including 72m on Kona permit) on sections 15500N, 16300N, 16400N, 16750N, 16850N, 16950N, 17000N, 17150N, 17200N, 17250N, 17300N, 17400N, 17600N, 17700N et 18100N. In September, holes WDC101 + 128-143 were completed and holes WDC144-146 were started for a total of 6490m (including 337m on Kona permit) on sections 16500N, 16550N, 16650N, 16700N, 16750N, 16825N, 16875N, 16900N, 16975N, 17000N, 17050N, 17100N, 17150N, 17400N, 17900N and 18100N. In October, holes WDC144-164 were completed and holes WDC163+166 were started for a total of 7194m (including 442m on Kona) on sections 16550N, 16600N, 16825N, 16850N, 16875N, 16900N, 16925N, 16975N, 17025N, 17100N and 18100N. In November, with 2 drills, holes WDC163-173 were completed for a total of 3677m on sections 15,900N, 16150N, 16250N, 16400N, 16450N, 16500N, 16750N, 16850N, 16900N and 17,100N. In December, with one drill, hole WDC173 was completed on section 16850N (120m) and four holes (WDC174-177) were drilled on the Kona permit (sections 18500N, 18800N and 18900N) for a total of 1360m.

13- Sampling method and approach

As a general rule, RC holes are sampled at systematic 1m intervals while core holes are sampled according to intervals corresponding to intersected lithologies or structures. The length of the 12,837 assay intervals in the 106 core holes of 2009 varies from 0.20m to 6m with 10756 exactly 1m long. (84%) for an average length of 0.94m.

14- Sample preparation, analyses and security

Each 1m RC sample of approximate 8kgs weight is reduced in a multistage riffle splitter to get a split of about 1kg which is packed and sent to the ALS Chemex (formerly Abilab) lab in Ouagadougou . Another split of the same size is kept on site for reference and the rest of the RC sampled material is discarded. Trench samples are processed in the same way. Core samples are sawed in half with the first half packed and send to ALS Chemex and the other half kept in the core-shack.

At ALS Chemex, all samples (RC, trench and core) are dried, crushed to –10 mesh (1.5mm) and quartered to get a first 500g split of crushed material. That material is pulverized to 200 mesh and quartered to get a second 50g split which is fire-assayed with AA (Atomic Absorption) finish.

The lab at Mana processes the grade control pit channel samples. Chips from 1m intervals along channels weight about 1-2kgs. Each sample is dried and crushed to –10 mesh. The crushed sample is processed through a riffle splitter to get a 500g split which is pulverized to –200 mesh (in a ring mill). A second split of 50g is taken from the pulverized material and it is fire-assayed with an AA finish.

No special security measures are enforced for samples. They are transported from the drilling site to the core shack and preparation area (at the Bana exploration camp, near Nyafe) in plastic bags (RC, trench and channel) or wooden core boxes. Bagged RC or trench sample splits are momentarily stored in the sample preparation yard until their shipment by truck to Bamako. Once processed, core boxes are stored in a roofed core shack.



Picture plate 2 Sample preparation and analysis at Mana

Grade control channel samples only. Top left: crushing of samples. Top right: weighting a 50g slit of pulverized material. Bottom: the two AA machines at the lab. Pictures taken by the author in November 2008.

15 - Data Verification

15-1 The drill hole data file

At the end of 2009 (more precisely as of January, 22, 2010), the Wona drill hole database had the following tables:

- + a collar table with coordinates, depth and orientation at collar of 941 holes and trenches over Wona (835 at the end of 2008) with the following distribution: 23 trenches (TW4 to TW46), 426 RC holes (WRC01 to WRC426), 285 fill-in (“préparation géologique”) RC holes, 20 RAB holes (WRB03 to WRB26), 2 special holes (WSHQ3 and WSPQ2) and 185 core holes (WDC01 to WDC177). This is the same as what we had at the end of 2008 except for core holes with 106 more (from WDC80 to WDC177 with several repeats like WDC99 and WDC99A). All collars have both local and UTM (WGS84) coordinates. Local coordinates have been checked by plotting holes on maps and sections. UTM coordinates have not been checked (we just noticed an inversion of X and Y for the collar of hole WRC403).
 - In the same table, we have the total length of each hole or trench and orientation angles at collar i.e. a bearing with respect to the north of the local grid (as well as the geographical and sometimes the magnetic north) and a dip angle.
 - + a survey table with distance, bearing and dip measured at 2423 points along holes and trenches (1426 at the end of 2008). Those survey points include collars (zero distance). True down-hole (deviation) measurements number 1501 (560 at the end of 2008). They are along core holes (1360 points) and RC holes (141 points like before).
 - + two assay tables with from-to limits, corresponding length and assay data for 80,030 intervals (72,004 at the end of 2008), generally 1m long. For each interval, we can have up to 3 gold values (duplicates, see section below) and a final value which is the average of all values available. We also have a field for the grade of composites and fields for date of analysis, date of reception and name of lab but they are seldom filled. After eliminating intervals with no data, we are left with 78,138 assay intervals with at least one gold value (64,980 at the end of 2008). We have those assay intervals up to the last core hole drilled in 2009 i.e. WDC177.
 - + a new litho table with from-to limits, litho codes and detailed logging of 5789 intervals in the core holes.
 - + a table of observed structural features in core holes with depth, type of structure and angle with core axis of 3526 features
 - + a table of alteration features in core holes with 7107 intervals
 - + a table of vein and silicification features in core holes with 2065 intervals
 - + an oxidation table in core holes with 340 intervals
 - + a saprolitization table in core holes with 372 intervals
 - + an RQD table in core holes with 15,045 intervals
 - + an “old” litho table with from-to limits, litho codes and detailed logging of 59,932 intervals in trenches, RC holes and early core holes.
- Wona location (collar + survey) and assay data was in good shape with a limited number of “orphans” (one assay interval in WR143? with no collar data) and depth slightly too short in trench TW45 and holes WDC09, WRC224, WRC421 and WRC95.

At the end of 2009 (more precisely as of December 16, 2009), the Nyafe and F67 drill hole database had the following tables (same as at the end of 2008):

- + a collar table with local coordinates and depth of 1053 RC+core holes and trenches over Nyafe and F67 deposits. F67 holes and trenches also have UTM coordinates (with real elevations for some of them) and some of those holes have a date. Distribution of holes according to type is : 58 RCs on F67 (FRC01 to FRC58), 42 core holes on Nyafe (NDD01 to NDD42), 335 fill-in (“préparation géologique”) RC holes on Nyafe (NPG01 to NPG335), 541 RC holes on Nyafe (NRC01 to NRC565), 2 shallow (3m) wells (P1 and P2) and 75 trenches (TE01 to TE91).
 - + a survey table with distance, bearing and dip at 1380 survey points along holes and trenches. Those survey points include the bearing and dip at collar of the 1053 holes and trenches leaving 373 true deviation measurements in core holes (117 measurements), RC holes (222 measurements) and trenches (34 measurements).
 - + an assay table with from-to limits, corresponding length and assay data for 58,945 intervals, generally 1m long. For each interval, we can have up to 3 gold values (duplicates, see section below) and a final value which is the average of all values available. Number of intervals with a gold value is 58,676.
 - + a litho table with from-to limits and geology descriptors of 62,732 intervals, generally 1m long and corresponding to assay intervals. Descriptors include color, oxidation, rock, alteration, litho, visual estimation of percentage of carbonate, quartz and sulphides as well as observed structures
 - + an oxidation table with from-to limits and oxidation (intensity of oxidation) for 45702 intervals.
- Nyafe location (collar + survey) and assay data was in good shape with no “orphans” (assay without location) and only minor inconsistencies (depth slightly too short in NDD34 and TE89).

15-2 Check assay data

Check samples in the form of standards, blanks and duplicates are regularly sent to the ALS Chemex lab in Ouagadougou together with the regular RC and core samples. Here is a summary analysis of results for those check samples for 2009 made available to us.

+ Standards

Semafo uses standard powders from Rocklabs with grades from 0.6 to 18.1 g/t. In addition to its certified grade, each standard is assigned a standard deviation, which is supposed to represent the normal variability of repeated assays of that standard. Semafo uses limit deviations equal to 3 times the standard deviation as the warning sign that something is not right.

From data supplied by Semafo, 299 standard samples have been sent to ALS Chemex in 2009 and early 2010 (from May 5, 2009 to January 8, 2010) with a returned value from the lab. Only 6 (i.e. 2% compared to 5% last year) of the returned values are obvious outliers, generally on the low side, which may result from sample numbers mix-up or the lab wrongly guessing the value of an obvious standard. Details on those outliers can be found in the legend of Table 3. A brief statistical analysis of the retained results for the standards is on Table 3. As a general rule and like observed before, ALS Chemex tends to understate the set value of standards (percentages of reported values below the set value is generally more than 50%). The percentage of values within the theoretical 95% confidence interval is much better than last year, i.e. above 80% for four of the five standards used (although part of that improved performance is originating from higher standard deviations than before for the same standard). Also, unlike last year, it looks like abnormal values returned for standards (i.e. deviation from set value more than three times the standard deviation) have led to a re-assay of samples in the same batch.

We have a definite improvement of the results from standards in 2009 compared to 2008.

+ Duplicates

Duplicates of the RC and core samples are also sent to ALS Chemex lab in a regular fashion. From conversation with Mana personnel, those duplicates, at least those from RC samples are field duplicates i.e. another 1kg of the cuttings from the 1m RC intervals is riffled and sent to the lab. In 2008, we thought that core sample duplicates were likely coarse duplicates but from the results of 2009 (see below), we definitely think that they are pulp duplicates (i.e. pulp rejects returned by ALS Chemex are resent to that lab with a different number)

According to duplicate data provided by Semafo, up to 297 core sample duplicates have been sent to the ALS Chemex lab from May 5, 2009 to January 8, 2010 with a returned value from the lab. All those samples are from 1m intervals in holes drilled in the Deep Wona sector. As usual, the majority of those samples are zero or very low grade. Figure 14 is a scatter plot of duplicated and original gold grade for the 125 samples above 0.5g/t (average of original and duplicated value). The scatter of points around the first diagonal (duplicate=original) is surprisingly low. It translates into an average relative difference of only 5.3% vs. 18.1% in 2008. Obviously, this is excellent and can only be achieved with pulp duplicates. Even with pulp duplicates, average relative differences are above 10-15% in most gold deposits.

In early 2009, 900 pulp rejects initially assayed at ALS-Chemex have been submitted to the SGS lab in Ouagadougou for fire assaying. If we concentrate on the 623 pairs with an average (ALS original and SGS duplicate) above 0.5 g/t, we can see a reasonable correlation (Figure 15 with $R=0.97$) with a high scatter on just a few pairs. However the mean ALS value of 2.87 g/t is significantly higher than the mean SGS value of 2.70 g/t as shown from a T-test of paired data ($T=5.33$ vs limit T of 1.96). This 5.7% significant difference is confirmed by a sign test with 72.2% of pairs showing an ALS value higher than the SGS value (with 623 pairs, proportion should be between 46 and 54%).

+ Blanks

A total of 295 blanks have been sent to the ALS Chemex lab in 2009 and early 2010 (from May 5, 2009 to January 8, 2010). The exact nature of the blank material is unknown. All blanks have returned acceptable grade values (less than 0.07 g/t Au) except one with a 2.4 g/t Au (on June 24, 2009). It is not clear if that “St John’s nugget” has led to a re-assay of all samples in the same batch.

Standard	Set grade g/t Au	Set Std. g/t Au	Number Results	Average g/tAu	Min. g/tAu	Max. g/tAu	% above	% below	%between
OxE56	0.611	0.015	10	0.60	0.54	0.66	30.0%	70.0%	40.0%
HiSiIK2	3.474	0.087	83	3.45	3.12	3.65	34.9%	65.1%	94.0%
OxN62	7.706	0.117	69	7.65	7.20	7.95	39.1%	60.9%	88.4%
OxP39	14.89	0.200	65	14.67	13.55	15.25	16.9%	83.1%	81.5%
SP37	18.14	0.380	66	17.86	17.25	18.40	19.7%	80.3%	95.5%

Table 3 Statistical analysis of results from standards sent to ALS Chemex in 2009

Set grade and set Std. (standard deviation) are standard specs. Average, Min. and Max. are mean, minimum and maximum of reported values for the standard. %below and % above are percentage of reported values below and above set grade (reported values equal to the set grade are distributed equally in the two categories). %between is the percentage of reported values between the set value +/- two standard deviations (theoretically, a 95% confidence interval). Statistics are computed without obvious outliers: 1 for OxN62 (6.87 g/tAu) and 5 for SP37 (8.06, 14.75 14.90 and 15.10 g/tAu),

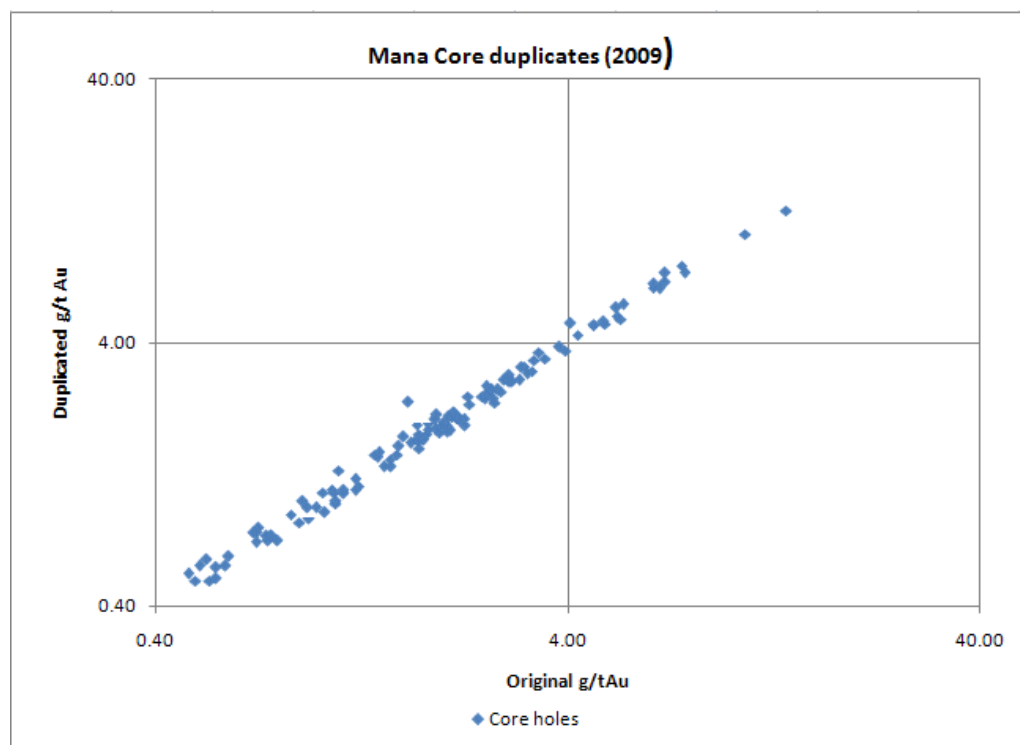


Figure 14 Correlation of duplicated and original grade for core samples in 2009

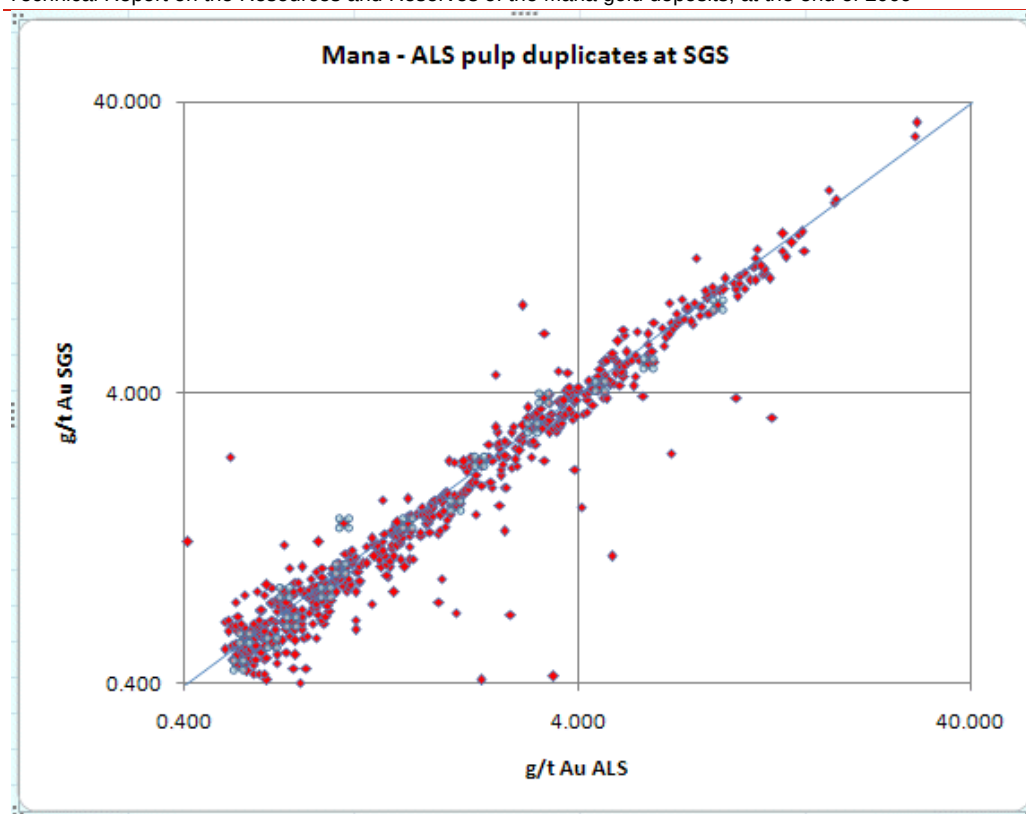


Figure 15 Correlation of pulp duplicates at SGS with ALS original values

Figure 16 is the map of adjacent properties at the end of 2009. The situation does not seem to have changed much since the end of 2008. According to the web site of Riverstone Resources Inc. which holds a 224 km² exploration permit (the Yamaroko project) just south of Mana permits, they have completed a soil geochemistry survey which led to the delineation of of 3.5x0.5km anomalous zone as well as a 2000m RC drill program (in November 2007) with some promising results (2.04 g/t over 14m and 1.88 g/t over 6m).

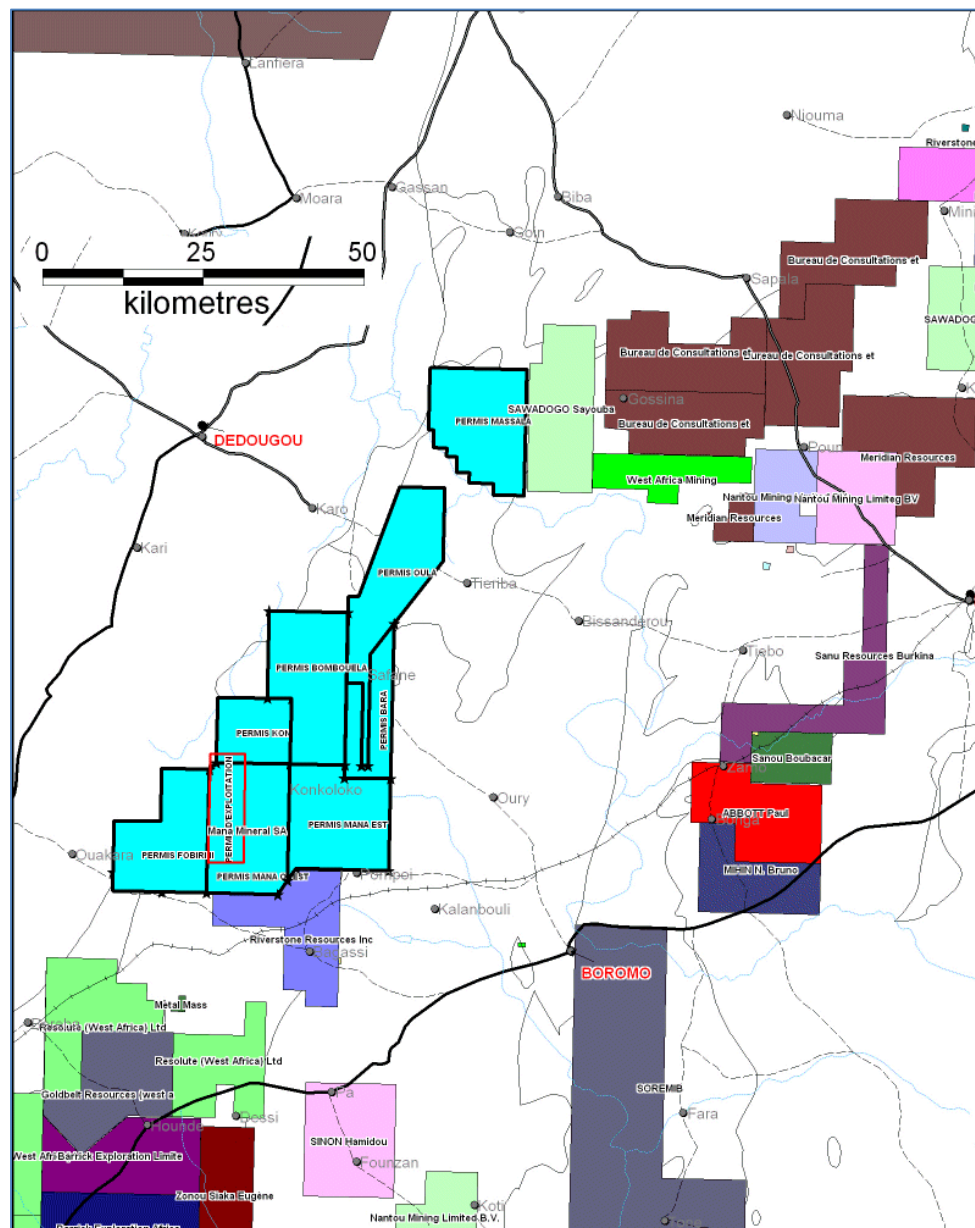


Figure 16 Map of adjacent properties to Mana at the end of 2009

17 Mineral processing

What follows is the most updated description of the Mana plant by Sylvain Duchene, Metallurgy Director. It is consistent with what was observed by the author of this report during his site visit of November 2008 (Plate 3)

17-1 Introduction

Gold from the Mana deposit is recovered by a state-of-the-art metallurgical plant which has a nominal capacity of 4,000 mtpd. An expansion of the process plant is currently underway to upgrade the capacity up to 6,000 mtpd. The major areas concerned are: construction of a new primary crushing facility, addition of a SAG mill, addition of 4 new GenSets at the power plant, addition of 2 extra CIL reservoirs, replacement of various equipment such as vibrating screens, hydrocyclones cluster, pumps as well as upgrading all services (process water, raw water, air) in the mill. Most of the Mill's expansion should be completed by mid-year (June 2010) but some work will be carried out until year-end. The major metallurgical process sectors involve the following:

17-2 Crushing

ROM ore is loaded by a WA600 front end loader onto a static grizzly screen to handle slabby material. A rock breaker reduces the oversize material that remains on the static screen below 750 mm. Finer material drops into a 150 tonne capacity ROM bin. The ore is then extracted from the bin by a primary apron feeder (1524mm X 7000mm) and fed to a vibrating scalper (1500mm X 4000mm) to separate further the fines. Coarse material from the scalper feeds directly into a 36"X48" (950 mm X 1250 mm) single toggle jaw crusher. The crusher will produce a product with a P_{80} of 100 mm, at a rate of 400 wtp/h to allow for a 17 hour per day crushing operation. This schedule allows for regular maintenance to occur on a daily basis to the crushing plant. The jaw crusher handles ROM ore with a maximum lump size of F_{100} of 750 mm. Fines from the scalper discharges directly onto the conveyor belt.

Primary crushed material discharges onto a 48" conveyor belt and is weighted by a scale to maintain a constant throughput to the crushing plant. A magnet located at the head pulley of the conveyor removes any trash steel. Ore is then transferred onto a mobile stacker conveyor who stockpiles around 8,000 tonnes of crushed ore.

Stockpiled ore is then withdrawn by 2 apron feeders in parallel (4500 mm X 900 mm each) and drops onto the mill feed conveyor. Each apron feeder can handle about 150 tph of crushed ore. Ore is weighted again to control and maintained steady throughput into the grinding circuit. Hydrated lime is added directly from a dry lime system onto the mill feed conveyor for CIL circuit pH control maintained at 10.5.

17-3 Grinding and classification

The grinding circuit consists of a Semi Autogenous Grinding mill (SAG) in close circuit with a vibrating screen. The 7.92 m diameter X 2.74 m Allis Chalmers SAG is equipped with 2,387 KW variable speed motor and operates between 5-10% ball charge depending of ore hardness. Variable speed control provides additional flexibility for processing of various ore types. The discharge from the SAG is pumped to the vibrating screen (2.1 m X 5.2 m). The material is classified by the screen with 3.2 mm slotted aperture panels. Oversize material (100 tph) returns to the SAG mill for further grinding while undersize material reports to the secondary ball mill discharge pump box. The circulating load for the SAG is around 40% and product size P_{80} is around 800 μ m.

The secondary open discharged ball mill consist of 5.30 m diameter X 7.0 m Outotec mill with a 3,500 KW variable speed motor. Variable speed control of the mill, accomplished through a liquid resistance starter and heat exchanger system provides great flexibility for processing various ore types. The discharge from the mill is pumped in close circuit to a cluster of 16 X 10" GMAX Krebs classifying hydrocyclones. Twelve cyclones are usually operating while 4 remain as spare units. Cyclones underflow reports back to the mill for further grinding while overflow at 45% w/w solids will gravitate to a trash vibrating screen ahead of the leach tanks. Circulating load for the mill is around 250% and final product P_{80} is targeted at 74 μ m.

A tertiary ball mill is also available as a standby unit if necessary. This mill consists of 3.96 m diameter X 4.88 m Allis Chalmers mill with a 1,120 KW synchronous motor.

17-4 Leach and Adsorption Circuit

Cyclones overflow gravitates to a trash vibrating screen (Simplicity 1524 mm X 3658 mm) ahead of the leach tanks. Trash screen oversize reports to the tailings pump box. Underflow reports to a Multotec automatic sampler for feed assays and then flows to the CIL tanks. The CIL circuit consists of 8 Carbon In Leach (CIL) tanks each with live capacity of 1,588 m³. The tanks are sized to provide 29 hours residence time. Carbon concentration in the tanks is maintained at 15 g/l to maintain solution tail grades below 0.0015 mg/l.

A cyanide distribution system composed of one mixing tank and one holding tank prepares a 15% cyanide solution. The solution can be pumped either to the grinding circuit or CIL tanks as required. The level of CN⁻ into the leaching tanks is maintained around 150-250 ppm depending of ore types.

Oxygen is supplied by blowing air into the tanks at up to 2,548 m³/h total. Hydrogen peroxide is also available if higher dissolved oxygen (DO) level is required into the CIL tanks. Each tank is fitted with a mechanically swept wedge wire screen to retain the carbon. All tanks are fitted with bypass facilities to allow any tank to be removed from service for agitator or screen maintenance.

Carbon enters the circuit at CIL tank 8 and advance counter-current to the slurry flow by pumping slurry, with a recessed impeller pump, from CIL tank 8 to CIL tank 7 as so forth. The carbon is retained by inter stage screen while the slurry flows by gravity back to tank 8. This counter-current process is repeated until the carbon eventually reach CIL tank 1. A recessed impeller pump is then used to transfer slurry and loaded carbon to the loaded carbon screen (Simplicity 1219 mm X 2438 mm) mounted above the carbon elution and stripping plant. The loaded carbon, reporting as screen oversize, gravitates to the acid wash column and the screen undersize slurry returns to CIL tank 1.

Discharge from the last tank is directed to the tailings pump box via a vibrating carbon safety screen (Simplicity 1524 mm X 3658 mm) design to recover any carbon leaking from the last CIL leaching tank. Carbon recovered on the safety screen is directed to the CIL spillage sumps and pumped back to the CIL tanks. Tailings going through the screen are directed to a Multotec automatic sampler for tail assays and then flow to the tailings pump box.

Barren carbon from the carbon regeneration kiln reports to the carbon sizing screen (Simplicity 1219 mm X 2438 mm) above the CIL tank #8 before returning to the adsorption circuit.

17-5 Elution and gold room operation

The following operations are carried out in the elution and gold room areas. The stripping and gold room areas operate 7 days a week:

- Acid Washing of Carbon;
- Stripping of gold from loaded carbon using the Pressurized Zadra method;
- Electrowinning of gold from pregnant solution;
- Smelting of electrowinning sludge.

17-5- 1Carbon Acid Wash

Loaded carbon is received into a 4 ton-8 m³ acid wash tank. A 3-5% hydrochloric acid (HCL) solution is prepared and circulates in an up-flow manner through the carbon bed for approximately 3 hours. The acid solution is then neutralized with caustic and the carbon rise (3 bed volume) with fresh water. Acid wash is necessary to remove carbonate scale (CO₃) that builds on the activated carbon during the adsorption process and fouls the carbon's adsorption properties. The scale is dissolved using a dilute hydrochloric acid solution.

Acid washed loaded carbon is then pumped from the acid tank to the elution columns (2).

17-5-2 Carbon stripping - Zadra elution circuit

Fresh strip solution is prepared prior to stripping each new batch of carbon. Sodium hydroxide and cyanide solution is pumped into the strip solution tank and mixed with raw water to the required concentrations of cyanide (0.15% w/v) and caustic soda (2.0% w/v) at pH > 12.0. The pressurized Zadra strip utilizes 30-36 bed volume of a circulated 130 °C solution at a pressure of 400 Kpa to strip the carbon.

The barren strip solution is indirectly heated via a diesel-fired hot glycol (33% w/v) heater and pumped in an up-flow manner through the carbon inside the 2 tonne strip column. The pregnant strip solution exiting the top on of the column is routed to the electrowinning cells, where the precious metals are electro-chemically precipitated into a sludge form at the cathodes. The strip solution is then routed back to the solution storage tank.

The strip solution recirculates continuously for 12 hours until the gold level of the strip solution reaches 4-6 g/t Au. At that stage the barren carbon level is less than 80-100 g Au /t carbon. Once the first column is being stripped, automatic valves are switched to start a new batch on the second 2 ton carbon loaded column. A total of 4 tonnes of loaded carbon is stripped every day.

17-5-3 Carbon Regeneration

After completion of the elution process, the barren carbon is transferred from the elution column to a dewatering screen prior to entering the feed hopper of the carbon regeneration kiln. The kiln can regenerate approximately 150 kg/h of barren carbon. As the carbon is contaminated with organic species, the organics foul the carbon and cause the gold and silver adsorption rate to slow and decrease the metal loading capacity of the carbon. This action is corrected by heating the carbon to 625°C in a slightly oxidizing atmosphere which burns the organics from the carbon. The carbon is hold at this temperature for about 15 minutes to allow regeneration to occur. Regeneration carbon is then stored in a holding tank prior to being pumped to a single deck carbon sizing screen above CIL#8. The carbon sizing screen is fitted with a 0.8 mm square aperture polyurethane decks. Oversize carbon reports to CIL tanks and the fine carbon is stored, filtered and bagged prior to be shipped to Ghana to recover residual gold left into the fines.

17-5-4 Electrowinning and Gold room

The two 75 cu³ electrowinning cells supplied by Summit Valley equipment & Engineering o treat approximately 12.0 m³/h of pregnant solution each. Individual cell electrical power is supplied by a local rectifier with the range of 2.7-3.3 volts and 800 amps output. Fumes generated during electrowinning are removed via a local exhaust system.

Gold is recovered as sludge from the stainless steel mesh cathodes. Sludge is washed from the cathodes with high pressure washer and pumped into a 85 liter Siemens' press-filter; gold is then recovered as a filtered-cake and burned off in an electrical calcine oven. The dried gold cake is then smelted with fluxes in a diesel-fired furnace to produce doré bars.

Fumes generated during the smelting is recovered and processed through a wet dust collector to recover fine particles and followed by an exhaust fan to remove heat and fumes.

17-6 Tailings disposal

Tailing produced by the process is pumped with variable speed pumps to the Yona tailings storage facility (YTSF). The YTSF has a surface area of about 1.5 km² or the equivalent capacity of 10Mtonnes of tailings when final elevation will be reached. The YTSF is naturally protected by thick layers of underlay clay and no effluent percolates through its clay-core embankments. Tailings are discharged into the facility using a single point discharge which is moved periodically from one basin to another. Supernatant water is directed by gravity through a central basin. Water pumps on a floating barge pump the recycled water back to the process water tank located near the process plant facility. Approximately 50-60% of the mill process water requirement is recovered from the YTSF. The remaining raw water necessary for the process plant is collected from a network of underground wells. The mine also constructed a barrage (Wona barrage) which collects and accumulates surface run-off water. The maximum capacity of this infrastructure is about 3.8 M m³ of water.

17-7 Predicted and actual gold recovery

The following text is no longer part of Sylvain Duchene's description of the plant.

Results of pre-production testing of metallurgical samples of Wona and Nyafe ore are reported in Crevier, 2008. They indicate a gold recovery of 94% for Wona saprolitic ore, 76% for Wona bedrock ore, 87% for Nyafe oxidized ore and 71% for Nyafe sulphide ore

In the year 2009, the mill has processed 1,401,738t ore (dry basis) with a reconstructed average grade of 3.49 g/t, equivalent to 4892.kgAu or 157,301 ozAu. Given gold poured of 153,542 oz, an estimated gold in circuit differential of $6114 - 9691 = -3577$ oz, an estimated gold in solid and liquid rejects of 8967 and an input gold in process water from tailing pond of 1150oz, it gives an average metallurgical recovery for the year 2009 of 94.3% in accordance with forecast recoveries (or even better given the significant proportion of ore from Nyafe+F67 processed in 2009).

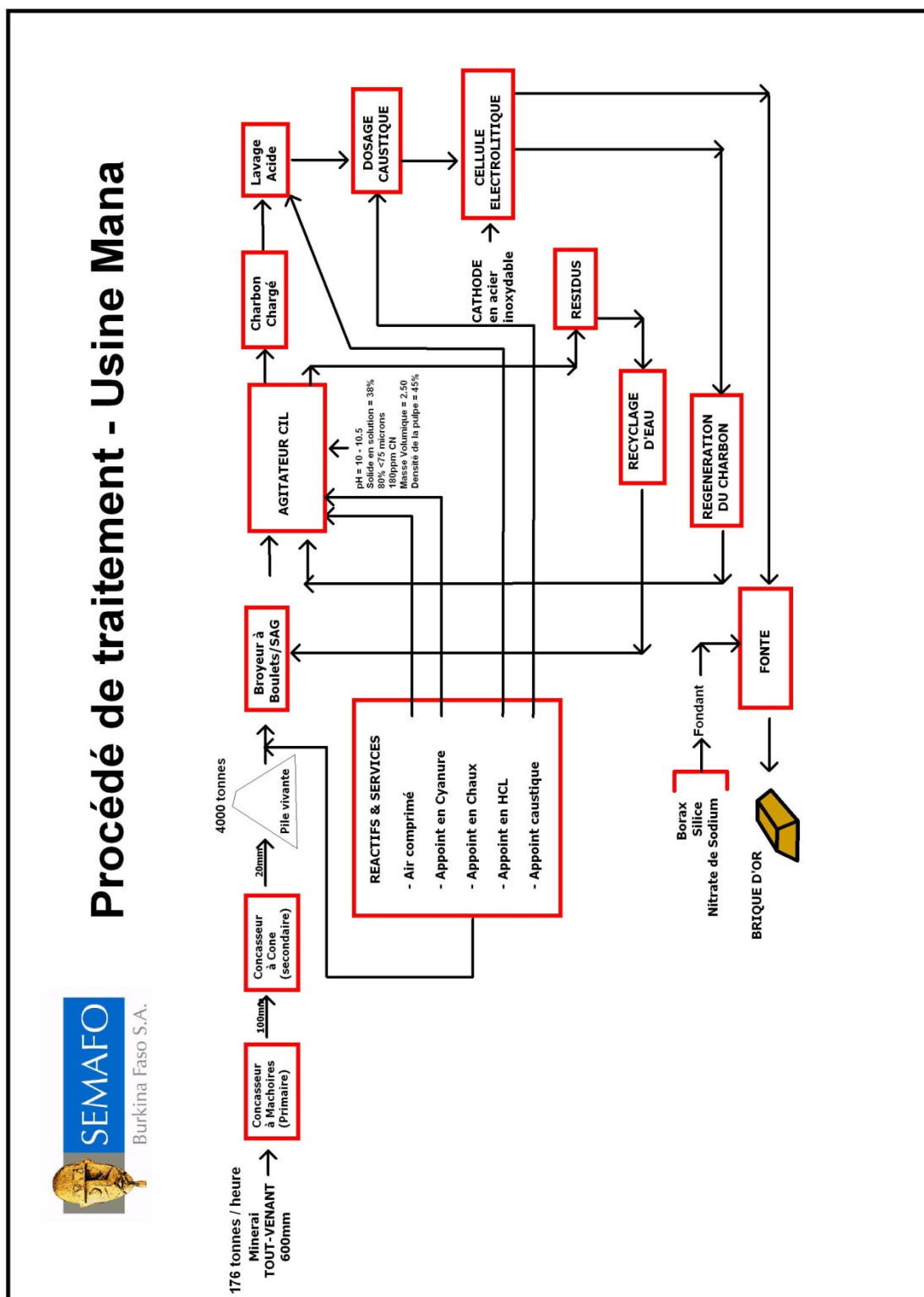


Figure 17 Simplified flow sheet of the Mana mill

The reader is referred to the text of section 17 for an explanation of the various boxes



Picture plate 3 Components of the Mana mill

Top left: primary crusher. Top right: 4000tph ball mill. Bottom left: leaching tank. Bottom right: recovery of pregnant carbon. Pictures taken by the author in November 2008.

18 Mineral Resource and Ore Reserve estimates

Like most computerized resource block models, those for Mana deposits (i.e. Wona, Nyafe and F67) start with drill hole data, which serve as the basis for the definition of 3D mineralized envelopes with resources limited to the material inside those envelopes. The next step is the selection of drill hole data within the mineralized envelopes in the form of fixed length composites and then the interpolation of the grade of blocks on a regular grid and filling the mineralized envelopes from the grade of composites in the same envelopes. All the interpolated blocks below the topo or pit bottom surface as of Dec. 31, 2009 make the mineral resources at that date and they are classified according to proximity to composites and corresponding precision/confidence level.

Modifying factors in the form of metal recovery and dilution are applied to the resource blocks. Those modified resources are then loaded into a pit optimization program to calculate a final pit limit taking into account metal recovery, updated price and costs as well as maximum pit slope angles. The calculated final pit is smoothed and adjusted for access ramps. Reserves are modified resources above operational cut-off in those adjusted final pit limits

18-1 Drill hole and sample database

As indicated before, the Wona drill hole database used to estimate resources at the end of 2009 has data from 921 holes and trenches with the following distribution: 23 trenches (TW4 to TW46), 185 core holes (WDC01 to WDC177), 426 RC holes (WRC01 to WRC426), 285 fill-in (“préparation géologique”) RC holes and 2 special holes (WSHQ3 and WSPQ2). The 20 RAB holes are excluded (WRB03 to WRB26) since their sample values are not used in the resource estimation exercise. With respect to the drill hole database at the end of 2008, we have 106 more holes and they are all core holes on the Wona Deep Extension on sections 15500N, 15900N, 16150N to 18100N, 18500N and 18800N-18900N (Holes WDC80 to WDC177 totalling 37,374m). True down-hole deviation measurements number 1501 (560 at the end of 2008). They are along core holes (1360 points) and RC holes (141 points like before). As a general rule, in core holes, they is a deviation measurement (both bearing and dip) at every 50m. A total of 78,138 assay intervals with a gold value are available along the 906 holes and trenches. This is 13,158 more than what we had at the end of 2008. Most of the new intervals (12,837) are in the 106 new core holes but some of them (321) are in low priority portions of old core holes with assays not available at the end of 2008. (WDC52, 54, 55, 58, 60, 61, 62). They are mostly 1m long.

Wona holes are distributed over an area 1.425kmx7.580km from 11,781E/13805N to 13,206E/21388N in the local coordinate system with a NS axis corresponding to the SW-NE axis of the regular UTM system. They are on E-W sections with a maximum spacing of 50m from 14,200N to 18100N i.e. 79 master sections. That spacing is reduced to 25m from 15,700N to 16,700N and to 12.5m from 14,200N to 15,700N. (Figure18).

Drill hole data from Nyafe are basically the same as at the end of 2008 i.e. 995 holes and trenches with the following details: 75 trenches (TE01 to TE91), 42 core holes (NDD01 to NDD42), 541 RC holes (NRC01 to NRC565), 335 fill-in (“préparation géologique”) RC holes (NPG01 to NPG335) and 2 shallow (3m) wells (P1 and P2). True down-hole deviation measurements number 373. They are along core holes (117 points), RC holes (222 points) and trenches (34 points). Up to 55,218 assay intervals, mostly 1m long are available along the 995 holes and trenches.

Nyafe holes are distributed over an area 0.885kmx2.515km from 14,391E/22,989N to 15,277E/25,505N in the local coordinate system with a NS axis corresponding to the SW-NE axis of the regular UTM system. They are on E-W sections with a spacing of 12.5m in the three mineralized sectors of Nyafe i.e. Nyafe North from 24250N to 25225N (a 975m span i.e. 79 sections), Nyafe Center from 23,600N to 24075N (a 475 span with 39 sections) and Nyafe South from 23,100N to 23,425N (a 325 span with 27 sections). Between sectors and north of Nyafe North, drilling is on sections with a maximum spacing of 50m (Figure 19).

Drill hole data from Filon67 are basically the same as at the end of 2008 i.e. 58 RC holes (FRC01 to FRC58) with no down-hole deviation data and 3727 1m assay intervals. Those RC holes are on sections at about 25m spacing from 23,925m to 24,425N i.e. a 500m N-S span (Figure 19).

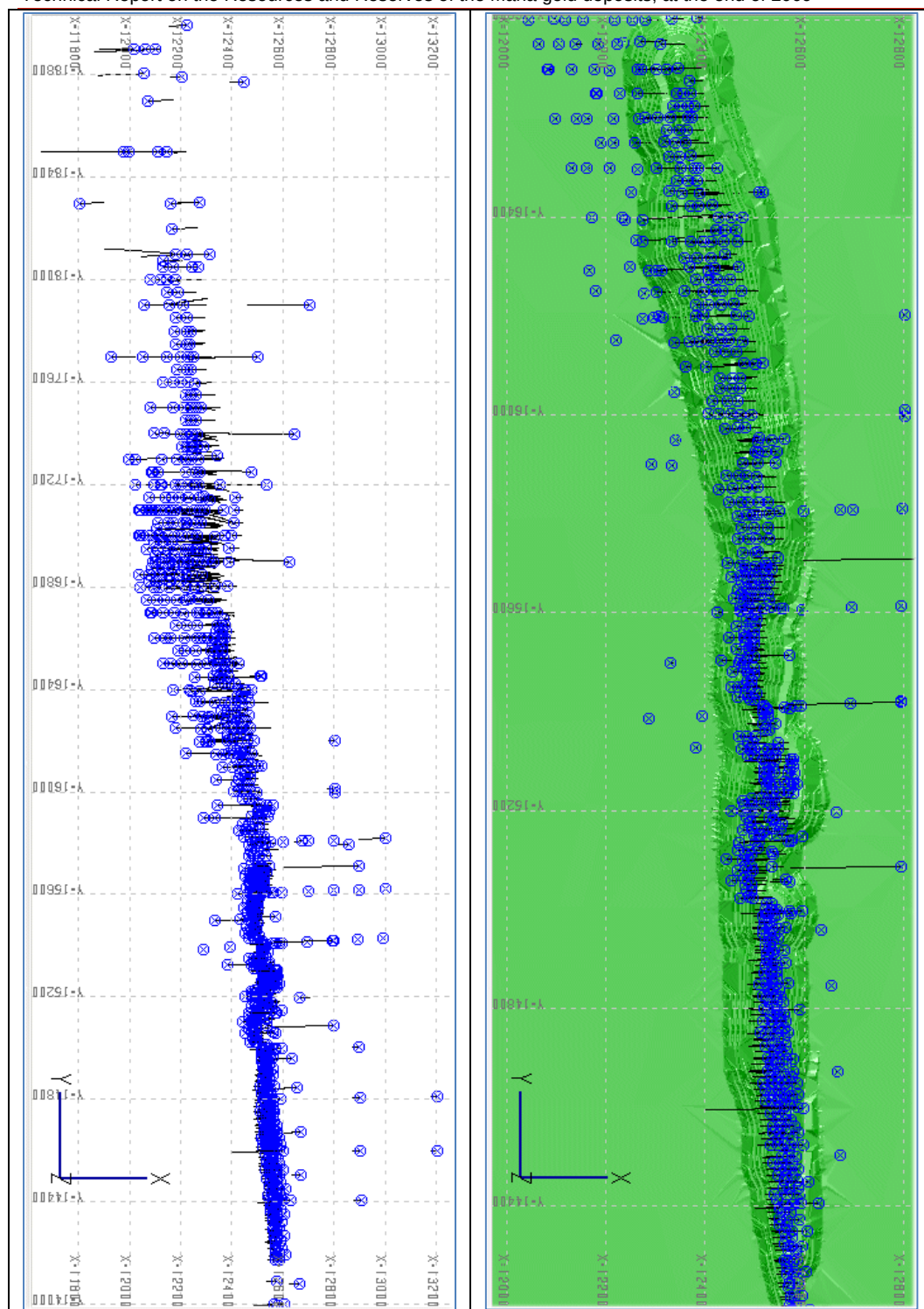


Figure 18 Map of holes and trenches over Wona at the end of 2009

Left : from 14000N to 19000N. Right : from 14200N to 16800N with trace of final South Wona pit

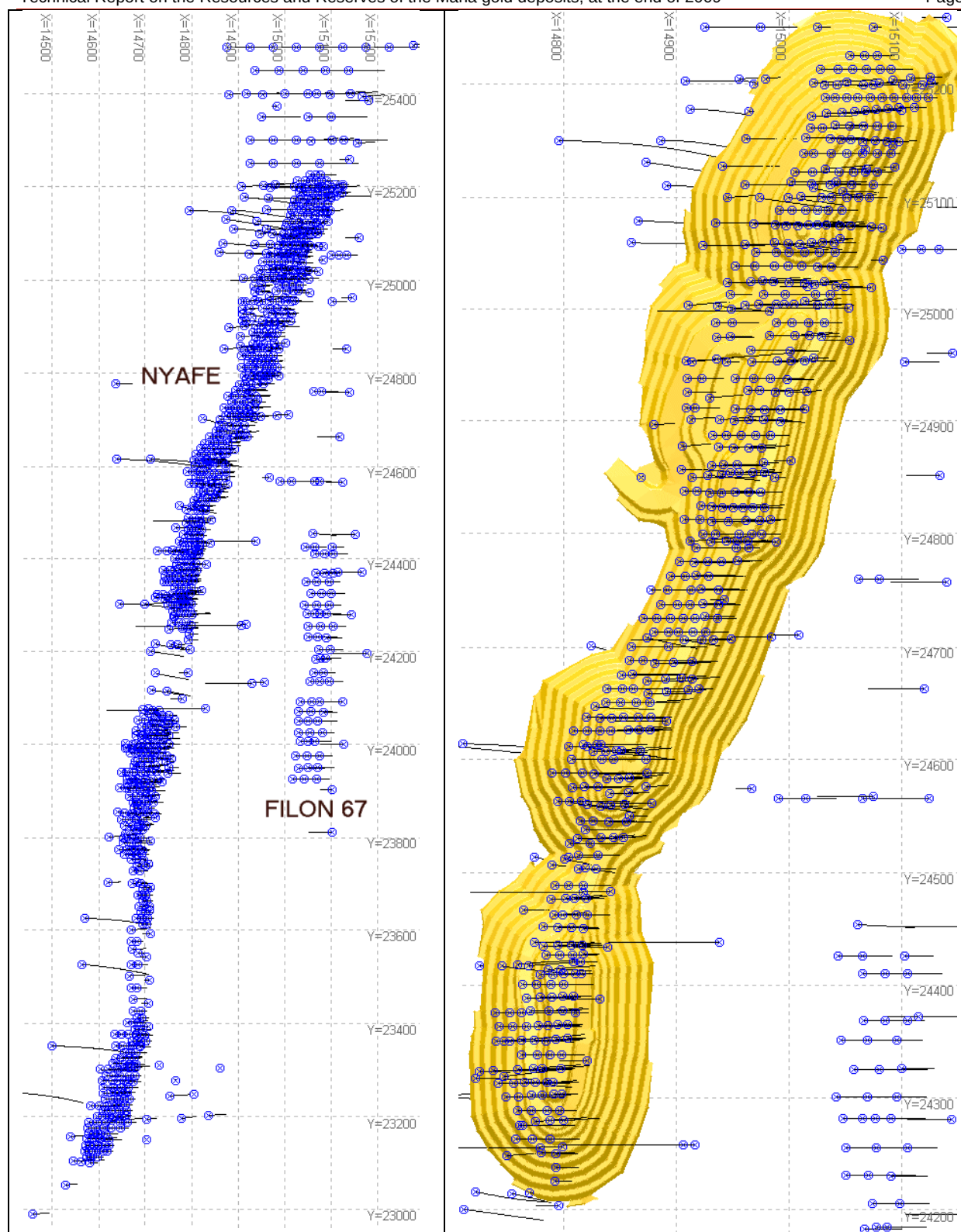


Figure 19 Map of holes and trenches over Nyafe and Filon 67 at the end of 2009

Left : all drill holes. Right : on Nyafe North only with trace of final pit

18-2 Resources and reserves in the open-pit sectors

18-2-1 Resources

As indicated above, all the 2009 drilling took place in the deep part of the Wona deposit north of 15,500N. As a result, the resource models for the F67, Nyafe and the top part of the Wona deposits have not changed since the end of 2008. More details on the construction of those models can be found in SGS Geostat Ltd. (2009).

In summary, in all three deposits (Wona, Nyafe and F67), resource models use sub-blocks within parent blocks of 5x5x3.33m size. Each sub-block is tagged according to mineralized solids and ore type. Mineralized solids are sub-vertical structures the outline of which are first interpreted on drill sections using a low cut-off of generally 0.5 g/t Au applied to original (i.e. 1m) assay intervals, down to 0.3 g/t in some places. Also mineralized bands may include some internal waste material i.e. assay intervals with a grade less than 0.3 g/t Au. Interpreted sectional outlines are connected through tie-lines to create mineralized solids. The ore type of each sub-block is derived from its position with respect to interpreted contact surfaces between, from top to bottom, saprolite, saprock and bedrock in Wona, oxide and sulphide in Nyafe and F67. The ore type of a sub-block defines its density i.e. respectively 2.3, 2.4 and 2.7 t/m³ in the saprolite, saprock and bedrock of Wona and respectively 2.4 and 2.8 t/m³ in the oxide and sulphide of Nyafe and F67.

The average gold grade of each sub-block is interpolated from capped grade of hole composites around the sub-block and in the same mineralized solid (but possibly in a different ore type). Composite length is 3m in Wona, 2m in Nyafe and 1m in F67. Prior to compositing, original assay intervals (mostly 1m) are capped to 30 g/t in Nyafe and 15m g/t in Wona and F67. This amounts to gold losses of respectively 4.8% in Wona, 3.6% in Nyafe and 6.0% in F67. Block grade interpolation is by ordinary kriging using variogram models fitted on experimental correlograms computed from composites in each deposit. They are characterized by a relative nugget effect from 25% (Wona and Nyafe) to 35% (F67 but with 1m composites), a short range (from 3 to 6m) along the direction perpendicular to the average plane of the zone, a long range of 30m along strike and an intermediate range of 25m (north) or 15m (south) along dip in Wona, an isotropic range of 15m along any direction of the average plane in Nyafe and a long range of 50m along dip and an intermediate range of 25m along strike in F67. In a typical Datamine fashion, the procedure is run in several passes with search conditions (size of search ellipsoid, minimum data in search ellipsoid) relaxed from one pass to the next until all blocks within the mineralized solid are interpolated. The basic search ellipsoid (SVOL=1) is 30x25x10m (Wona and F67) or 35x25x10m (Nyafe) with the long radius (35m or 30m) along dip and the intermediate radius (25m) along strike. This is the setting which better accommodates the composites in holes on sections at 25m spacing or less. If there are not enough composites in that basic ellipsoid (i.e. at least 3 composites in 2 different drill holes), the next search ellipsoid (SVOL=2) has radii equal to 1.5 times those of the basic ellipsoid. If there are not enough composites in that second ellipsoid, the third and last one (SVOL=3) has radii equal to 2 times those of the second ellipsoid. If there are no composites in that third ellipsoid, the block is not interpolated (SVOL=0). The only exception to that rule is the north extension of Wona with holes at 50m spacing on sections at 50m spacing. In that case, there is no first SVOL=1 step and we start directly with SVOL=2 conditions with a 75x62.5x25m ellipsoid.

The interpolation run in which a sub-block is interpolated defines the category of the sub-block resources with measured resources for blocks interpolated in the first run (SVOL=1) and indicated resources for blocks interpolated in the second run. In our opinion, this “automatic” classification of resources in each block of the resource model should only be a first draft. We suggest that drill sections with this automatic tagging of blocks should be reviewed in order to eliminate any local “spotted dog” effect (isolated patches of measured in indicated or indicated in inferred and vice versa) and, at depth (crucial for optimization), set realistic maximum extension distances from the last drill hole for each category (our first guess would be the half maximum spacing between sections i.e. 12.5m for measured and 25m for indicated). This should lead to the polygonal delineation of blocks in each category on each section. Next those outlines are connected from one section to the next by solids (in exactly the same way as the mineralized solids between strings defined on sections) and the final classification of resource blocks or sub-blocks is based on those solids.

Resources available in all those sectors at the end of 2009 are simply obtained by cutting those models with the topo surface (pit bottom + natural surface) in the same sectors as surveyed by Mana personnel. Like before, resources are given at the low 0.6g/t cut-off which corresponds to the lower limit for material currently sent to the mill. This cut-off is applied to the average grade of mineralized material in each block 5x5x3.33m (i.e. after re-blocking all sub-blocks within the same block). Those resources before reserves in the open pit sectors are listed on Tables 16 to 18.

18-2-2 From resources to reserves: the modifying factors

A naive conversion of resources to reserves consists of deriving a final mining (pit) limit and just adding all the resources blocks above the mining cut-off and within that final mining limit. This assumes that, at the time of mining, we can: (1) perfectly recognize which mining units are above the cut-off (2) perfectly select and mine them. Obviously, this is not the case and we may need to apply realistic loss and dilution factors to the resource blocks when contemplating a final mining limit (e.g. by pit optimization) and deriving the reserves within that limit

The grade control procedure currently used in the soft ore (saprolite or oxide) of the Mana pits is based on strings of 1m channel samples (“rainurages”) dug perpendicular to structures of each exposed 3.33m bench and with a nominal 12.5m (Wona) or 6.25m (Nyafe, F67) spacing between strings. The drawing of dig lines for ore to be sent to mill by Mana staff is based on the contouring on the top bench surface of most channel samples above an economic cut-off. That cut off is set to 0.6 g/t (Wona) or 0.7 g/t (Nyafe, F67) for low-medium grade category (“green ore”) and 2.0 g/t for high grade category (“red ore”). There is also a low grade stockpile ore (“blue ore”) for material between 0.3 and 0.6 g/t or 0.7 g/t. According to Semafo (2010), the drawing of ore dig lines on benches also takes into account field observations by the grade control geologists (e.g. sub-horizontal mineralized structures in addition to the modelled sub-vertical ones in F67)

In mined out benches or portions of benches, it is possible to compare resource estimates based on the long term resource model from drill holes and a short term resource model based on those grade control channels. At the end of 2008, the short term model gave 6% more tonnes and 4% more metal (hence 2% less grade) than the long term model which is a reasonable agreement. However we had more differences in individual deposits with strong gains in Nyafe (14% for metal and 9% for tonnage) and a significant loss in Filon 67 (20% for metal and 32% for tonnage). This was explained by additional mineralized structures not detected in drill holes for Nyafe and a not so well defined resource model for Filon 67. In Wona, there was a gain of 5% on tonnage and a loss of 4% on metal. At the time of writing this report, the comparison of long and short term resource models for 2009 was not available.

The standard reconciliation of (long term) resource model vs. mine production calibrated with mill results of 2009 has been performed (Semafo, 2010) with details on Table 4. The mine production is the reconstructed mill input (1,401,738t @ 3.49g/t i.e. 157,301oz) plus a stockpile differential estimated at 131,533t @ 1.44 g/t or 6,096 oz hence a total mine output of 1,533,271t @ 3.31 g/t or 163,397oz. Using truck records and production sampling, that total is split between the three pits i.e. Wona (88% of tonnage and 78% of metal), Nyafe (8% of tonnage but 16% of metal) and F67 (4% of tonnage and 6% of metal). From mining limits at the beginning and end of 2009, it is possible to compare those pit productions with estimated resources within the same limits from the long term resource model at the end of 2008. Those comparisons provide actual “modifying factors” to convert resources into reserves.

In Wona, there is a metal loss of 8.5% but also a negative dilution (ore mined is less than ore in situ) of 7.5%. As a result, the production grade is about the same as the predicted grade from the resource model without any dilution. This loss of tonnage and metal is explained by a misplacement of the laterite-saprolite contact surface in the top benches which have been mined in 2009, resulting in a shortfall of ore compared to the model.

The situation is exactly the opposite in Nyafe: ore mined is about 35% higher than predicted from the resource model, both for tonnage and metal (hence, here again, the average grade of the ore mined is about the same as the resource grade). Similarly in F67, we have 34% more metal but only 15% more tonnage hence an average grade better than anticipated from the resource model. In both cases, the explanation for that ore gain by Mana geologists is the discovery of satellite sub-horizontal mineralized structures not accounted for in the resource model at the end of 2008.

Globally with the ore loss in Wona and the ore gain in Nyafe and F67, the mine has produced only 2% less metal than predicted from the resource model and about 4% more tonnes.

Those 2009 reconciliation results suggest that the same modifying factors as at the end of 2008 be used to convert resources into reserves at the end of 2009 i.e. a 97.5% mine recovery factor (i.e. 2.5% loss) for metal and tonnage and a 5% mining dilution for tonnage and grade in the saprolite of Wona. Just from the lower average width of mineralized structures, that dilution is raised to 10% in the oxide of Nyafe and 15% in the oxide of F67. For the other types of material, we do not have yet any reconciliation data to figure out the dilution but we can expect that it is likely more than in saprolite/oxide hence a 10% for saprock/bedrock of Wona, a 20% for sulphides of Nyafe and a 30% for sulphides of F67.

Type	Deposit	Tonnes	g/t Au	Oz Au	Metal Recovery	Tonnage dilution
Resource	Wona	1,453,735	2.98	139,297		
Resource	Nyafe	89,438	6.64	19,095		
Resource	F67	59,907	4.01	7,724		
Resource	All	1,603,080	3.22	166,116		
Mine	Wona	1,344,401	2.95	127,524	91.5%	-7.5%
Mine	Nyafe	120,119	6.70	25,878	135.5%	34.3%
Mine	F67	68,752	4.67	10,324	133.7%	14.8%
Mine	All	1,533,272	3.32	163,726	98.6%	-4.4%
Stock End	All	259,918	1.48	12,352		
Stock Start	All	128,385	1.52	6,256		
Stock Variation	All	131,533	1.44	6,096		
Mill	All	1,401,738	3.49	157,301		
Mill + Stock variation	All	1,533,271	3.31	163,397		

Table 4 Mine mill reconciliation for 2009

From Semafo (2010). Resource = long term resource model from drill holes at the end of 2008. Stock : on ROMPAD and in crushed ore silos. Mill : reconstructed from poured gold, gold in circuit and gold in tailings. Mine = stock variation + mill

18-2-3 Final pits and reserves

Mostly because the resource models are the same and the technical+economic conditions (Table 5) have not changed much between the end of 2008 and the end of 2009, no new pit optimization and final design has been conducted on resources left at the end of 2009. As a result, the final pits are those of the end of 2008 and reserves are the “modified” resources left in those final pits (Tables 19 and 20). More precisely, they are the sum of recovered +diluted resources in 5x5x3.33m blocks within the final pit shell with a diluted grade above the corresponding marginal cut-off (Table 5).

We recall that a final pit is the optimized shell, edited for actual pit slope profile and the placement of ramps. Parameters used in that design are: (1) 3.333m bench height with 70° face angles (2) 1.5m horizontal berms between benches (3) 10m minimum width at pit bottom (4) ramp slope of 10% (5) ramp width of 11m (single way) and 18m (double way). The objective of the final design is to minimize the loss of metal in the optimal shell. Another design based on the minimizing of the increase of the strip ratio of the optimal shell proved to be less satisfactory in terms of net value of the final pit. Economics of reserves in the final pits at the end of 2009 are on Table 6.

The total estimated reserves of the Mana deposits at the end of 2009 are the estimated reserves in the final pits plus the estimated quantity of ore already mined and sitting on the ROM pad at the end of 2009. As already mentioned in the previous section (Table 4), this quantity is estimated to be 259,918t @ 1.48 g/t i.e. 12,352 oz by Mana geologists. This quantity is normally added to the proven reserves (see Table 20).

Parameters	Unit	Wona	Nyafe	Filon67
Density waste saprolite/oxide	t/m3	1.9	2.5	2.5
Density waste saprock	t/m3	2.4		
Density waste bedrock/sulphide	t/m3	2.7	2.9	2.9
Mill recovery saprolite/oxide	%	94	87	87
Mill recovery saprock	%	87		
Mill recovery bedrock/sulphide	%	76	71	71
Mining dilution saprolite/oxide	%	5	10	15
Mining dilution saprock/bedrock/sulphide	%	10	20	30
Mining recovery	%	97.5	97.5	97.5
Maximum average slope saprolite/saprock/oxide	o	45	45	45
Maximum average slope bedrock/sulphide	o	55	55	55
Gold price	\$/oz	750	750	750
Selling cost	\$/oz	4.60	4.60	4.60
Royalty (3%)	\$/oz	22.5	22.5	22.5
Mining cost waste saprolite/oxide	\$/t waste	1.28	1.43	1.43
Mining cost waste saprock	\$/t waste	1.39		
Mining cost waste bedrock/sulphide	\$/t waste	1.95	2.01	2.01
Mining cost ore saprolite/oxide	\$/t ore	1.41	1.53	1.53
Mining cost ore saprock	\$/t ore	1.49		
Mining cost ore bedrock/sulphide	\$/t ore	1.99	2.06	2.06
Transportation cost ore oxide/sulphide	\$/t ore		1.40	1.40
Milling cost saprolite/oxide	\$/t ore	13	13	13
Milling cost saprock	\$/t ore	15		
Milling cost bedrock/sulphide	\$/t ore	20	20	20
Fixed cost	\$/t ore	4.45	4.45	4.45
Geological preparation cost	\$/t ore	0.25	0.75	0.75
Rehabilitation cost all	\$/t all	0.1	0.1	0.1
Mining cut-off saprolite	g/t	0.82	0.97	0.97
Mining cut-off saprock	g/t	0.98		
Mining cut-off bedrock	g/t	1.40	1.61	1.61

Table 5 Parameters for pit optimization completed at the end of 2008

Pit	Type	Tot. ton. kt	Mining 1000\$	Ore kt	Ore gra g/tAu	Ore met. kOz Au	S/R	Gross 1000\$	Proc. 1000\$	Net 1000\$
F67	OX	1,000	1,500	88	3.7	10	10.3	6,600	1,700	3,300
F67	SU	0	100	6	2.9	1	4.4	300	200	100
F67	TOT	1,000	1,600	94	3.7	11	9.9	6,900	1,900	3,400
Nyafe N	OX	3,900	5,900	167	5.9	32	22.3	19,800	3,300	10,600
Nyafe N	SU	3,700	7,800	334	5.7	61	10.1	31,500	8,900	14,800
Nyafe N	Total	7,600	13,800	501	5.8	93	14.1	51,300	12,200	25,400
Nyafe C	OX	4,600	7,000	200	5.3	34	22.0	21,300	3,900	10,400
Nyafe C	SU	2,100	4,400	130	5.4	22	15.2	11,500	3,500	3,600
Nyafe C	Total	6,700	11,500	330	5.3	56	19.3	32,900	7,400	14,000
Nyafe S	OX	2,200	3,400	89	3.8	11	24.2	6,800	1,800	1,600
Nyafe S	SU	1,100	2,300	125	4.0	16	7.6	8,200	3,300	2,600
Nyafe S	Total	3,300	5,700	214	3.9	27	14.5	15,000	5,100	4,200
Nyafe All	OX	10,700	16,400	456	5.2	76	22.5	47,900	9,000	22,600
Nyafe All	SU	6,900	14,500	589	5.3	100	10.7	51,200	15,700	21,000
Nyafe All	Total	17,600	30,900	1,045	5.2	176	15.8	99,200	24,700	43,500
Wona south	SP	17,500	24,200	1,804	2.7	155	8.7	105,600	32,200	49,200
Wona south	SK	8,800	13,100	1,355	2.5	107	5.5	67,100	26,800	27,100
Wona south	BK	15,800	32,400	3,336	2.4	259	3.7	142,400	82,500	27,500
Wona south	Total	42,200	69,700	6,495	2.5	521	5.5	315,100	141,500	103,800
Wona north	SP	7,300	10,100	335	3.6	39	20.9	26,500	6,000	10,500
Wona north	SK	300	400	49	3.4	5	4.4	3,400	1,000	2,000
Wona north	BK	300	500	42	3.2	4	5.0	2,400	1,000	800
Wona north	Total	7,800	11,000	426	3.6	49	17.4	32,300	8,000	13,300
Wona all	SP	24,900	34,300	2,139	2.8	195	10.6	132,200	38,100	59,700
Wona all	SK	9,100	13,500	1,404	2.5	112	5.5	70,500	27,800	29,100
Wona all	BK	16,100	32,900	3,378	2.4	264	3.8	144,800	83,600	28,300
Wona all	Total	50,000	80,800	6,921	2.6	570	6.2	347,400	149,500	117,200
Mana all	OX+SP	36,600	52,200	2,682	3.3	281	12.6	186,700	48,800	85,600
Mana all	SU+SK+BK	32,100	61,000	5,378	2.8	476	5.0	266,800	127,300	78,500
Mana all	Total	68,600	113,300	8,061	2.9	757	7.5	453,500	176,100	164,100

Table 6 Summary economics of final pits of Mana deposits as of December 31st 2009

Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

18-2-4 Remaining resources

Estimated remaining resources (after reserves) at the end of 2009 are on Tables 21 and 22. We separate the overall resources (blocks 5x5x3.33m of the resource model below the topo surface at the end of 2009 and with an estimated gold grade of its mineralized fraction above 0.6 g/t Au) into resources within the final pit surface and resources outside that final pit. To the latter, we add blocks of the former with a diluted grade of their mineralized fraction below the reserve cut-off and the blocks with inferred resources (inside and outside the final pit).

18-3 Resources of the Wona Deep sector

The so-called Wona Deep sector can be viewed at the extension to depth of the Wona mineralized zones beneath the northern part (north of 15,800N) of the main Wona pit and the north pit. It also includes some mineralization closer to surface and north of the Wona north pit, in the Kona permit, up to 19,000N north. This sector has been intensively drilled in 2009 with 106 core holes and close to 37,400m of drilling.

18-3-1 Mineralized lenses

As usual, the estimation of resources in the Wona Deep sector starts with the interpretation of the limits of mineralized bodies or lenses on drill sections and the connection of those limits from one section to the next to define mineralized solids. Up to 13 different solids have been interpreted by the project geologist in the Wona Deep sector.

On the south side, from 15,900N to 16,500N, we have a single mineralised zone which corresponds to the main unit which is being mined in the Wona main pit above (see sections 15,900N, 16,200N and 16,500N on Figure 20). However this zone is split into two separate lenses i.e. a high grade core dubbed len A and a lower grade envelope or len B. Like other high grade core lenses, len A is defined using a cut-off of about 2 g/t while the lower grade envelope or len B is defined at the same low cut-off as the mineralized zones of the Wona open pit sectors i.e. about 0.5 g/t.

On section 16,500N (Figure 20) another high grade structure, len C, appears on the west side of the mineralized zone and then, on section 16,600N, another one, len D shows up on its east side. Hence on section 16,800N (Figure 20), we have three high grade lenses i.e., from west to east, C, A and D and all three are within the lower grade envelope of len B. Len C which stays above elevation Z=5000 disappears north of 16,850N. Len D which develops at depth can be tracked over 1200m up to 17,800N.

A fourth high grade structure, len E, is defined on the east side of the mineralized zone on section 16,900N. It develops mostly at depth between that section 16,900N and section 17,150N. Since len A had disappeared on section 17,000N, on section 17,100N (Figure 21) we are left with len D on the west side of the mineralized zone and len E on its east side. Like before, both are contained within the low grade envelope of len B.

That low grade envelope stops on section 17,300N, hence on sections 17,400N (Figure 21), we are just left with len D which continues until section 17,800N. A satellite structure, len P, shows up to the west of len D on section 17,700N (Figure 21).

North of 17,800N, the geometry of mineralized structures starts to be more difficult to interpret due to the lack of drill hole information. Nevertheless, len D is relayed as lenses S-T to the west and len R to the east (section 18,000N on Figure 21). North of 18,000N, we are just left with the broad len V that continues on Kona permit until 19,000N.

In addition to those main lenses, we have a few satellite lenses of very limited extent on both sides of the mineralized zone (lenses F, G, H and K on Figure 22).

Table 7 gives the volumes and tonnages of material in each interpreted mineralized len. Volumes are converted into tonnages using the usual Wona density values i.e. respectively 2.3, 2.4 and 2.7 t/m³ in the saprolite, saprock and bedrock. Most of the material of Wona Deep is in bedrock.

Mineralized solids are discretized by blocks 2.5m (EW) x 5m (NS) x 5m (Z). Blocks might be subdivided into sub-blocks as low as 1.25m (NS) x 1.25m (Z) x a few millimetres along EW to better follow the limits of mineralized solids. Table 7 lists the number of sub-blocks and parent blocks in each solid.

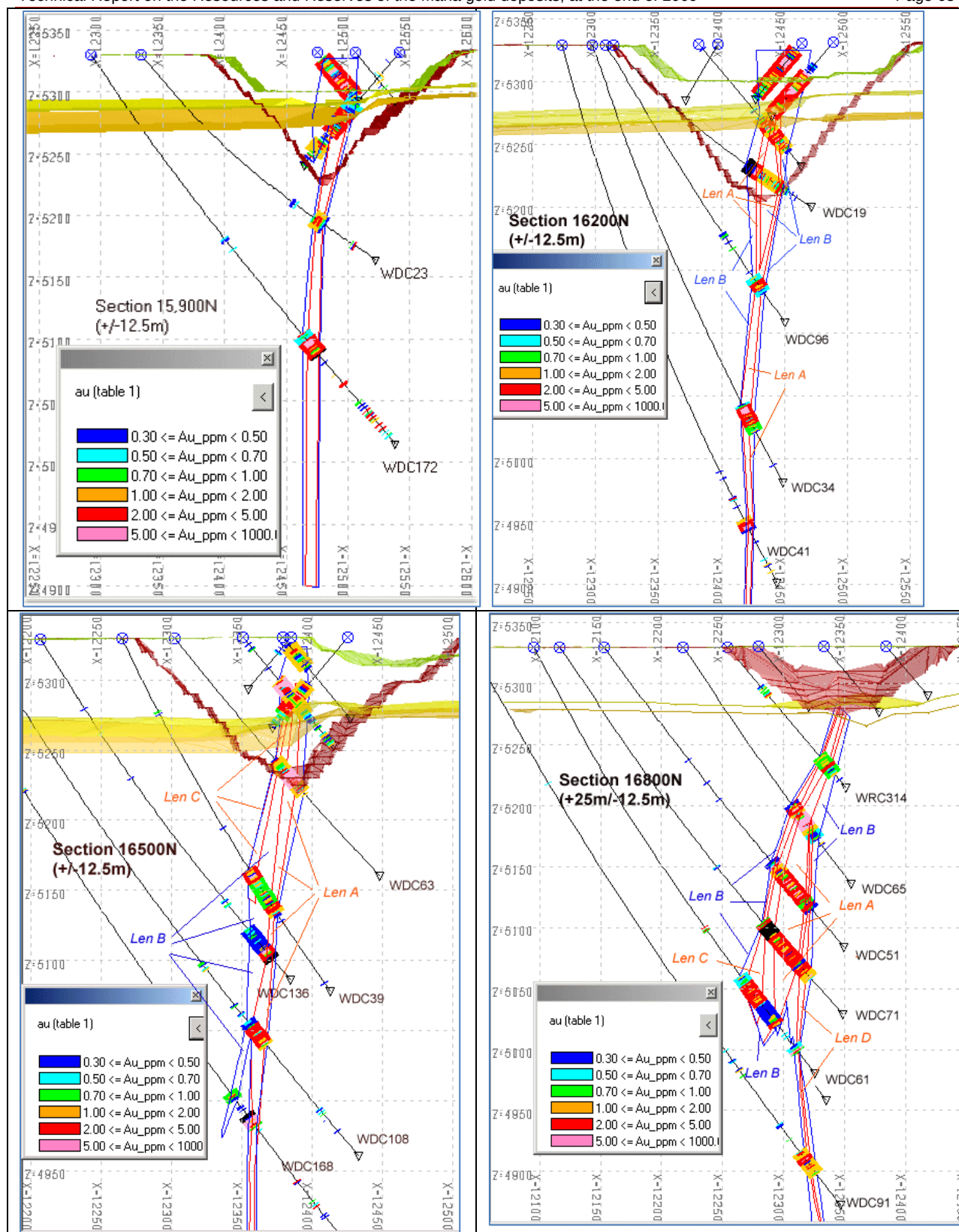


Figure 20 Sections through Wona Deep with interpreted mineralized solids (1 of 2).

Sections also show current topo (green), current final pit profile (brown), saprolite/saprock contact surface (yellow) and saprock/bedrock contact surface (orange)

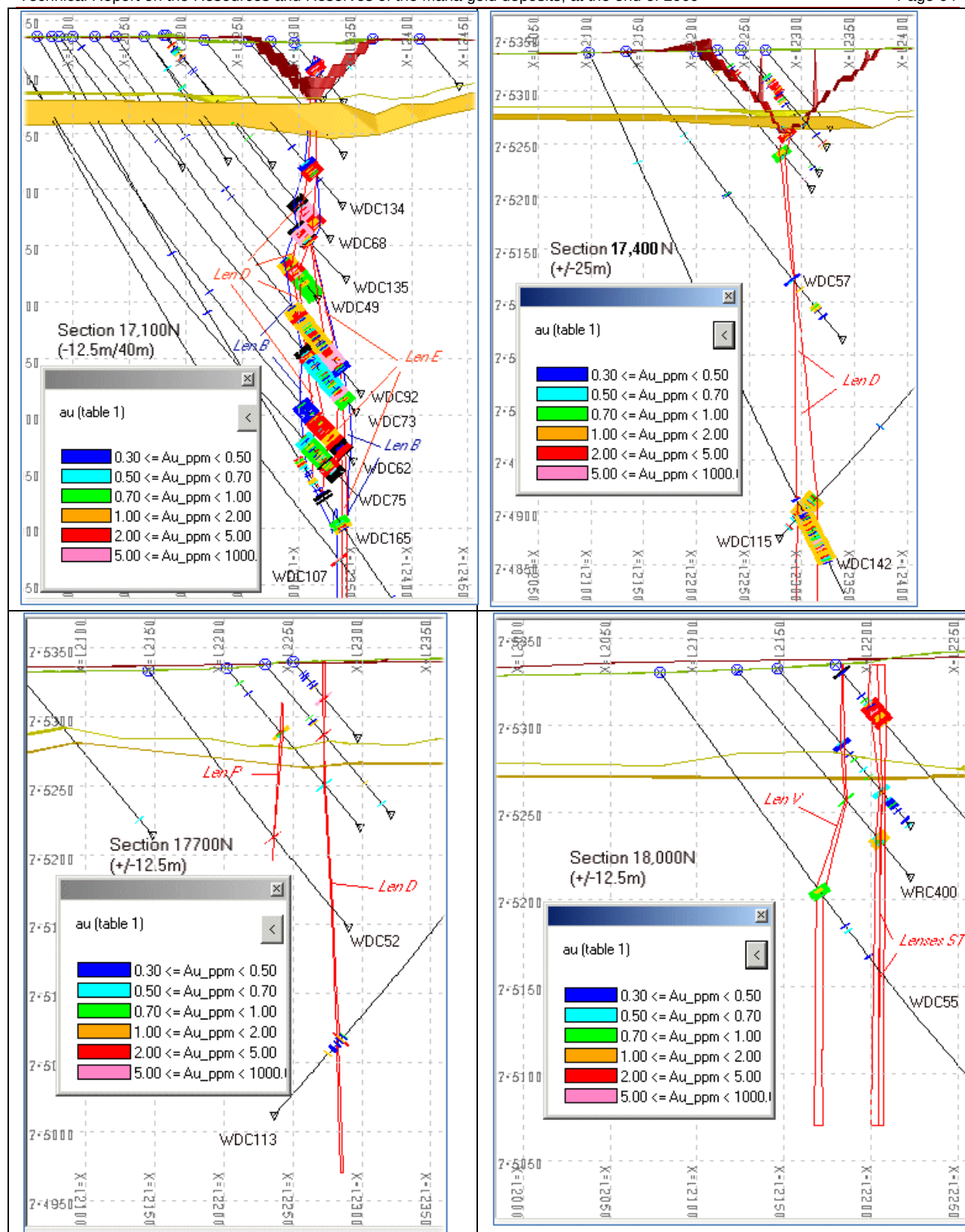


Figure 21 Sections through Wona Deep with interpreted mineralized solids (2 of 2).

Sections also show current topo (green), current final pit profile (brown), saprolite/saprock contact surface (yellow) and saprock/bedrock contact surface (orange)

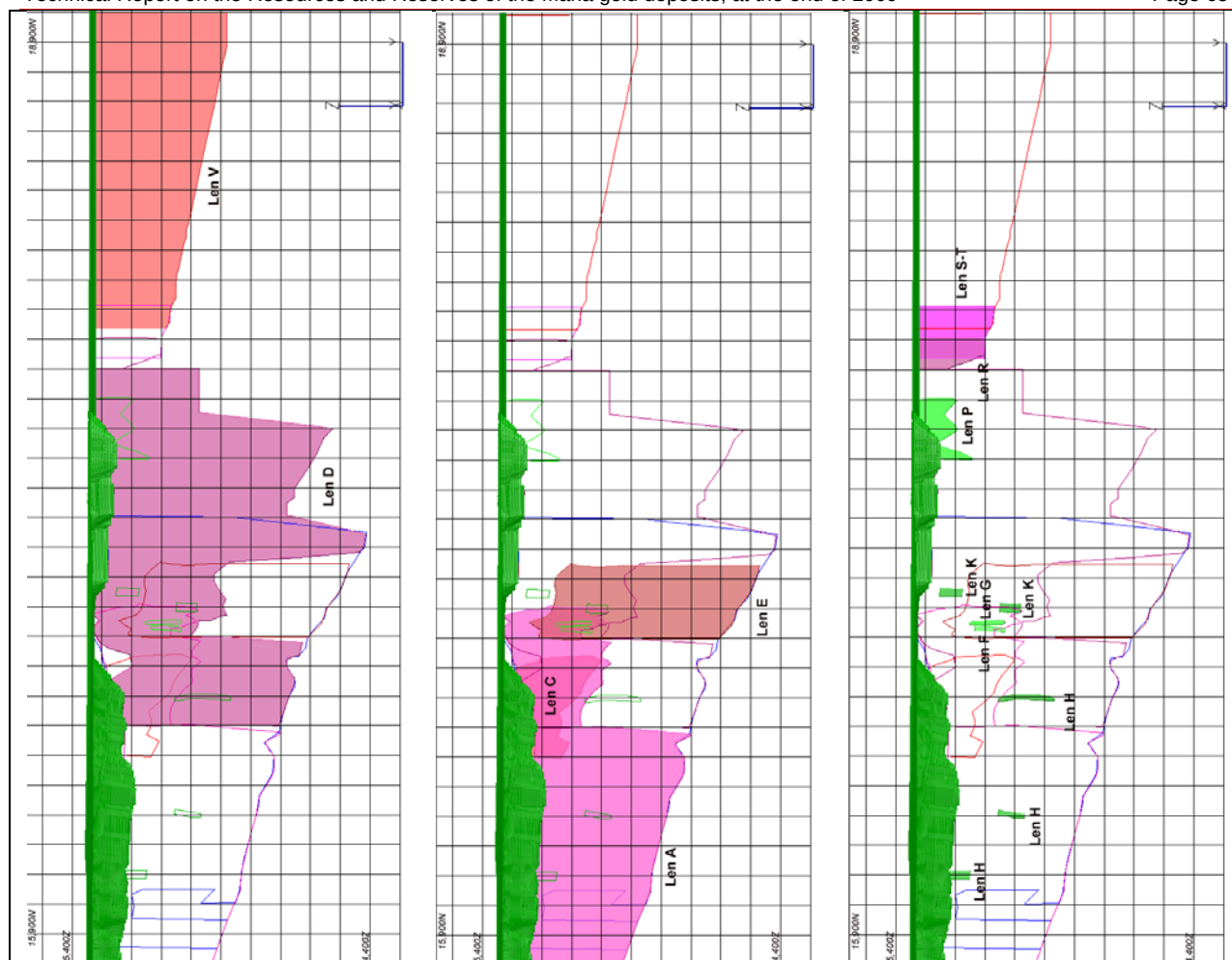


Figure 22 N-S long sections with extent of mineralized lenses in Wona Deep sector

Current final pits for Wona (in green) limit the extent of lenses upward

Len	Number	Number	Tonnage
	Sub-blocks	Blocks	
A	637,170	69,694	7,300,891
B	2,122,977	211,740	19,051,415
C	75,559	7,384	652,755
D	957,318	134,028	15,850,343
E	233,919	19,486	1,684,070
F	755	88	2,461
G	723	122	5,839
H	2,050	631	39,208
K	1,286	394	25,049
ST	76,424	7,028	489,626
R	16,911	1,359	58,582
P	21,232	1,704	108,338
V	475,440	77,250	9,161,583
Total	4,621,764	530,908	54,430,160

Table 7 Volumetrics of interpreted mineralized lenses in Wona Deep sector

Current final pits for Wona (in green) limit the extent of lenses upward

18-3-2 Samples in mineral lenses

We have a total of 1045 intercepts of drill holes north of 15800N with the newly defined mineralized lenses of Wona Deep. A large fraction of those intercepts are actually in shallow RC holes in the north part of the main Wona pit as well as in the north pit. Statistics of the length of mineralized intercepts (Table 8) show that it ranges from less than a meter to more than 50m with averages around 9m. Given that intercept angles are generally rather low, corresponding ore lenses thickness are much lower.

We have 10,115 original assay intervals within the 1045 mineralized intercepts. As it can be guessed from the total length of intercepts ($1045 \times 9.38 = 9802.1\text{m}$ from Table 8), most of those assay intervals are 1m long although, in the core holes, the high grade intervals tend to be shorter (minimum is 0.23m and the 241 intervals with a length of 0.5m or less are all in core holes – their average grade however is comparable to the average grade of all the core samples i.e. 2.27 g/t vs. 2.10 g/t). Statistics of the reported grade of those assay intervals are on Table 9. Just from averages between 3.0 and 3.5 g/t, we can easily recognize the high grade lenses A, C, D and E. Average grade of core samples in len B is less than 1 g/t (average grade of all samples in B is somewhat biased by the fact that the B len corresponds to the main mineralized zone in the open pit sector with no high grade core being defined in that sector). Average grade of the four small satellite lenses (F, G, H and K) is generally high which is the reason why those lenses were defined in the first place. The northern lenses P, R, ST and V are generally low grade.

Statistics of Table 9 show that we have some very high grade samples in the intercepts of some of the ore lenses hence we have to decide where to cap those data before using them in block grade interpolation. Figure 23 presents the high end of the cumulative frequency plot of core sample grades in the two most important high grade lenses i.e. A and D. In both cases, we can see some “kicks” in the slope of the line around 15 g/t. This capping limit is actually the same as the one used in the Wona open pit sectors and applied mostly to the grade of 1m RC intervals in those sectors. It caps the grade of 79 samples including 43 core samples (respectively 0.8% and 0.7% of total) and reduces the gold quantity by a mere 2.9% (2.1% for core samples).

Len	Number Intercepts		Min. length (m)		Average length (m)		Max. length (m)	
	All	WDC only	All	WDC only	All	WDC only	All	WDC only
A	177	103	1	1	12.35	10.43	37	35
B	569	375	0.4	0.4	9.24	7.55	55	45
C	32	24	1	1.6	6.82	7.47	24.3	24.3
D	170	100	1	1.3	9.40	11.45	53.5	53.5
E	37	37	1	1	5.61	5.61	20	20
F	3	3	0.9	0.9	1.30	1.30	2.0	2.0
G	1	1	5.2	5.2	5.21	5.21	5.2	5.2
H	8	6	1	1	4.12	3.00	9	9
K	2	2	2	2	5.50	5.50	9	9
ST	11	1	2	3	6.45	3.00	16	3
R	6	0	1	NA	2.33	NA	1	NA
P	13	4	1	1	3.91	2.95	7	4
V	16	7	1	3	9.32	11.60	30	24.2
Total	1045	663	0.4	0.4	9.38	8.41	55	53.5

Table 8 Statistics of the length of mineralized intercepts in the Wona Deep ore lenses

Len	Number Samples		Min. grade (g/t Au)		Average grade (g/t Au)		Max. grade (g/t Au)	
	All	WDC only	All	WDC only	All	WDC only	All	WDC only
A	2258	1134	0.01	0.01	3.13	3.48	42.95	34.0
B	5356	2933	0.005	0.005	1.61	0.82	119.33	15.65
C	233	194	0.02	0.02	3.13	3.14	31.1	31.1
D	1701	1245	0.01	0.01	3.44	3.51	29.1	27.6
E	222	222	0.01	0.01	3.24	3.24	16	16
F	4	4	2.95	2.95	5.55	5.55	7.39	7.39
G	6	6	1.57	1.57	2.16	2.16	2.59	2.59
H	33	18	0.07	0.08	1.42	2.35	13.86	13.86
K	11	11	0.59	0.59	5.41	5.41	20.3	20.3
ST	71	3	0.15	0.41	2.21	1.14	14.8	2.2
R	14	0	0.35	NA	1.62	NA	6.46	NA
P	52	13	0.02	0.02	0.95	0.51	4.76	2.26
V	154	86	0.02	0.02	1.87	1.67	39.5	39.5
Total	10115	5869	0.005	0.01	2.33	2.10	119.3	39.5

Table 9 Statistics of the grade of samples in the Wona Deep ore lenses

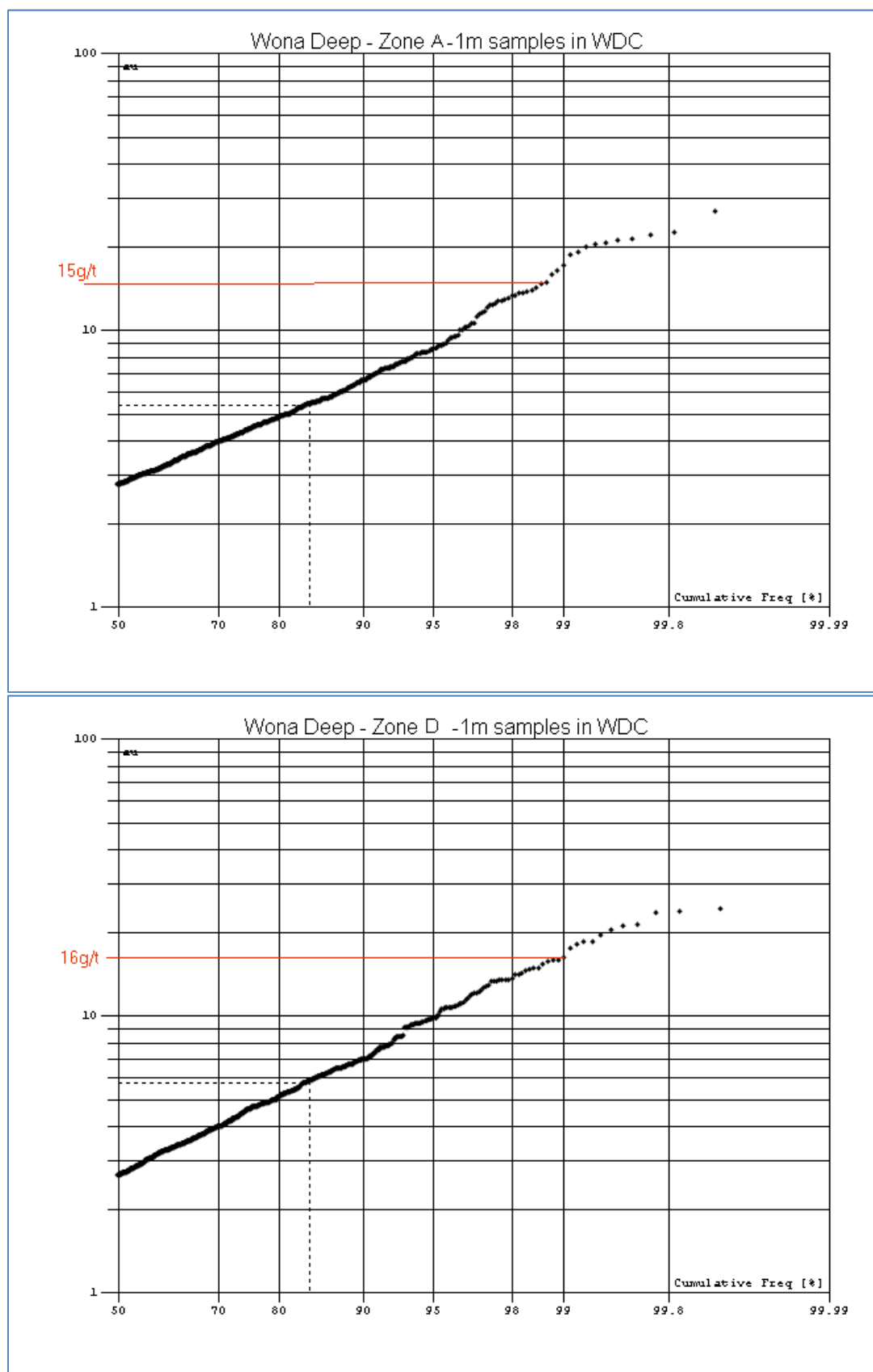


Figure 23 Cumulative frequency plot of high grade samples in two Wona Deep lenses

18-3-3 Composites in mineral lenses

Capped assay intervals within mineralized intercepts are composited according to 2m intervals before they are used in the interpolation of the average gold grade of nearby sub-blocks in the same len. That compositing is necessary in order to standardize the length of intervals (generally 1m but often less than that in core holes). The selected 2m corresponds to the selected thickness of 2.5m for the parent blocks.

Statistics of capped composite grades are on Table 10. Histograms in the four principal high grade lenses (A+C+D+E) and the low grade len (B) are on Figure 24. Shape is vaguely lognormal and similar to that of the histograms of composite grades in the open-pit sectors (Geostat, 2009).

Correlograms have been computed along several directions from composites in the four principal high grade lenses (A+ C+D +E) and composites in the low grade len B (Figure 25). In the first case, composites in the same len (A, C, D or E) are artificially separated from composites in the other lenses so that a pair made of a composite in a given len and another composite in a different len is never used. In the high grade lenses, relative nugget effect is 30% and best continuity (with a practical range of 50m) is along any direction of the N-S vertical long section (with nothing better along the direction dipping north in that plane). The practical short range is just 5m along EW. In the low grade len, relative nugget effect is slightly higher (40%) and anisotropy is milder with a practical long range of 40m along NS and a practical short range of 25m along vertical and EW.

Len	Number Composites		Min. grade (g/t Au)		Average grade (g/t Au)		Max. grade (g/t Au)	
	All	WDC only	All	WDC only	All	WDC only	All	WDC only
A	1140	560	0.08	0.12	3.05	3.38	14.18	14.18
B	2717	1449	0.01	0.01	1.53	0.82	14.85	11.12
C	117	95	0.10	0.10	2.89	2.92	10.98	10.98
D	841	594	0.02	0.02	3.35	3.43	15.0	15.0
E	108	108	0.06	0.06	3.23	3.23	10.09	10.09
F	2	2	5.64	5.64	6.16	6.16	6.68	6.68
G	3	3	1.54	1.54	2.16	2.16	2.56	2.56
H	19	11	0.08	0.12	1.61	2.55	9.28	9.28
K	6	6	1.43	1.43	4.64	4.64	8.80	8.80
ST	39	2	0.18	1.00	2.16	1.14	11.16	1.29
R	8	0	0.41	NA	1.56	NA	3.98	NA
P	28	6	0.22	0.24	1.01	0.66	3.15	2.26
V	79	42	0.05	0.05	1.72	1.41	10.97	10.32
Total	5107	2878	0.005	0.01	2.25	2.05	15.0	15.0

Table 10 Statistics of the grade of 2m composites in the Wona Deep ore lenses

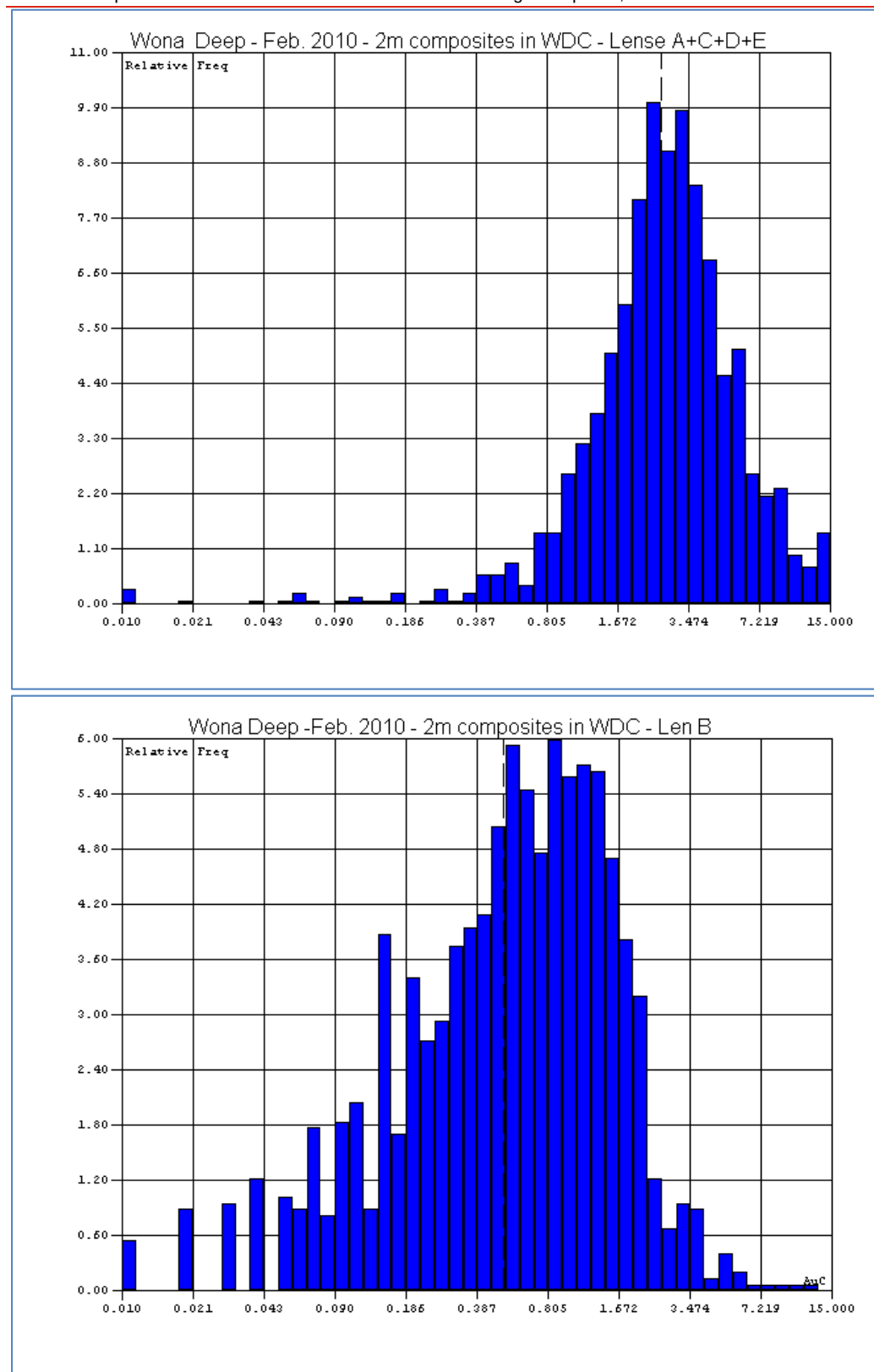


Figure 24 Histograms of 2m composites grades in the main ore lenses of Wona Deep

Log scale. Composites in core holes only -Top = high grade lenses A+C+D+E. Bottom = low grade lenses B.

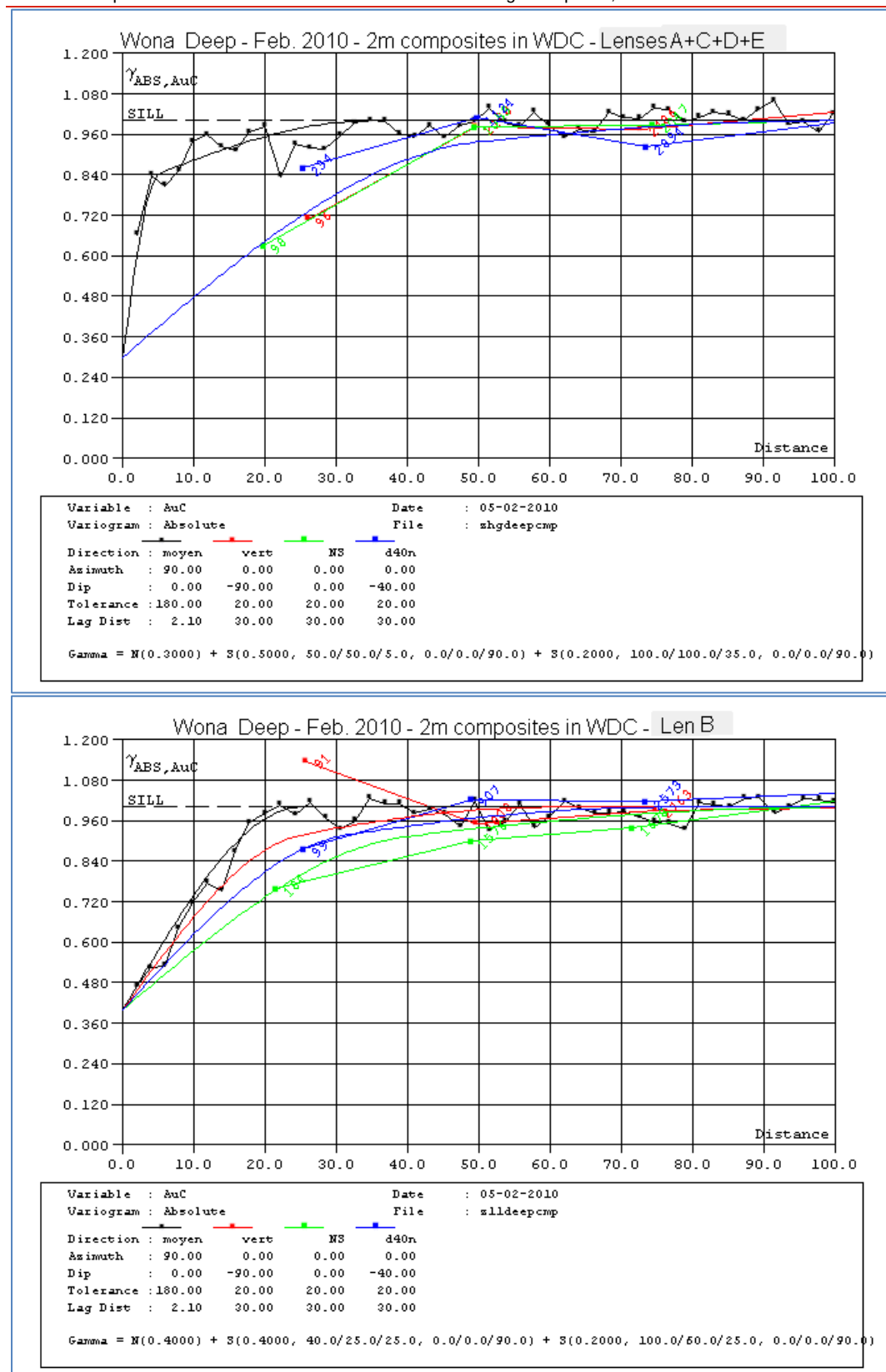


Figure 25 Variograms of 2m composites grades in the main ore lenses of Wona Deep

Composites in core holes only -Top = high grade lenses A+C+D+E. Bottom = low grade lenses B.

18-3-4 Block grade interpolation

The average gold grade of any sub-block within a given len is interpolated by ordinary kriging from the capped grade of nearby 2m composites in the same len. Variogram model used are that of high grade lenses in all lenses except len B with its own particular variogram (see previous section). As usual, this interpolation is done in up to three successive runs with a relaxation of minimum search conditions from one run to the next.

The first run (SVOL=1) uses a 45x37.5x9m ellipsoid with the 45m long radius along vertical and the 37.5m intermediate radius along the average N-S strike. Minimum number of composites is 3 and minimum number of holes with composites is 2. The second run (SVOL=2) uses a 75x62.5x15m ellipsoid with the same orientation. Minimum number of composites is 2 in at least 2 holes. The third and last run (SVOL=3) uses a 150x125x30m ellipsoid with a minimum of 1 composite. Maximum number of composites in the search ellipsoid used in the sub-block kriging is 25 in all the runs.

Results of that block grade interpolation are illustrated on Figure 26 for len A.

As a way to validate the interpolated sub-block grade data, in each len we have compared the grade of any given composite with the estimated grade of the block (after merging all sub-block of the len of interest in the same block) which holds the center point of that composite. Correlation plots for the most important plots are on Figure 27. Correlation statistics are on Table 11. As expected, the correlation is far from perfect (R around 0.8) with a good deal of smoothing in the block grade estimates. What is important however is the good agreement between average composite grade and average estimated block grade at the same place.

Zone	Number	Average g/t Au Composites	Average g/t Au Sub-blocks	Correlation Coefficient
A	451	3.39	3.39	0.79
B	1473	0.73	0.73	0.84
C	96	2.93	2.93	0.83
D	702	3.22	3.25	0.81
E	104	3.22	3.24	0.82
F	2	6.16	6.16	NA
G	3	2.16	2.14	0.64
H	11	2.55	2.54	0.97
K	6	4.64	4.71	0.74
P	20	0.78	0.77	0.92
R	6	1.24	1.23	0.96
S-T	39	2.16	2.2	0.73
V	79	1.72	1.68	0.71
All	2992	1.94	1.95	

Table 11 Block grade validation in the lenses of the Wona Deep sector

In each len, we have all the composites with a block of the same len surrounding it (those composites are mostly those in the core holes) and the average of composite grades and block grade estimates as well as the correlation coefficient of the two.

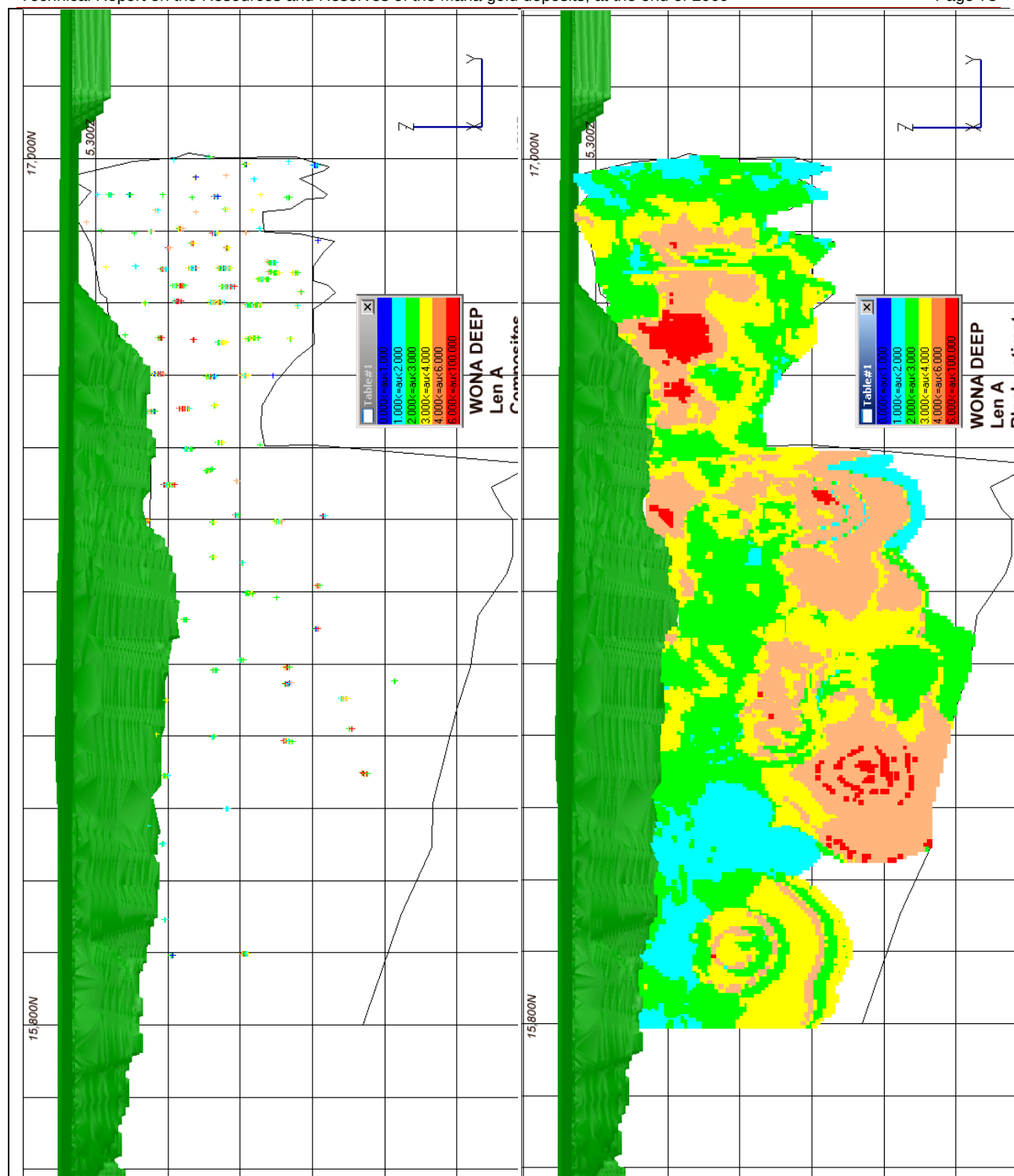


Figure 26 Block grade estimation in len A of the Wona Deep sector

Left : composites. Right : block grade estimates. Top : current Wona final pits

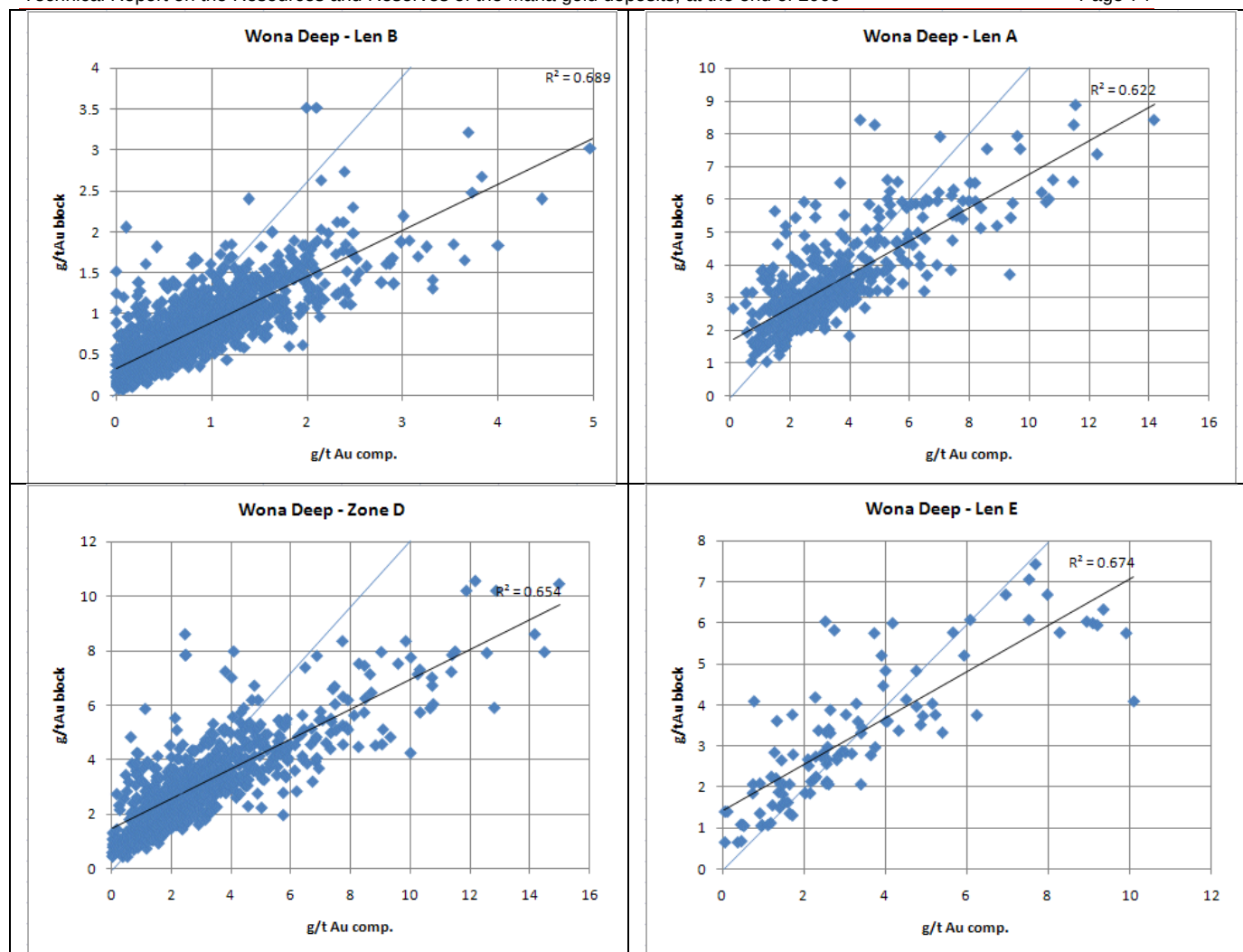


Figure 27 Block grade validation in the main lenses of the Wona Deep sector

Each plot compares the grade of a composite with the estimated grade of the block of the same len that contains the composite.

18-3-5 Resource classification

Resources in each block are first classified in an automatic manner based on the interpolation run number (SVOL) when the block grade was interpolated (Figure 28). Like before (Geostat, 2009) and despite the additional drilling on the Wona Deep sector in 2009, the best category (SVOL=1) is an Indicated 1 although in some places the grid of intercepts on the long section is as tight as 25x25m which may warrant a measured category. Given the size of the search ellipsoid for that run (45x37.5m on long section), blocks in that category are those surrounded by intercepts on at least 50x50m. Also like before, the next category (SVOL=2) is an Indicated 2 with blocks surrounded by intercepts on an incomplete 50x50m grid (e.g. 100x50m). The last category (SVOL=3) is for the inferred resources.

This automatic classification has the limitations of any automatic classification i.e.: (1) in the same bench and section (not shown on Figure 28), we may have blocks in the indicated and inferred category which may pose a problem when defining reserves in potential underground stopes (2) isolated intercepts are generating “rims” of Indicated1, then Indicated 2 and finally Inferred resources, also something not desirable in mine planning exercises.

The automatic classification serves as a guide for a final classification based on the density of hole intercepts in any given len as it appears on NS long sections (Figure 28). As noticed before, in some sectors like between sections 16,800N and 17,000N, we have holes on sections at 25m spacing with a grid of intercepts on the long section almost 25x25m. We think that the Indicated 1 category should be restricted to those sectors where there is obviously no need for additional drilling from surface. Then the Indicated 2 category would be for sectors with the standard spacing between 50 and 100m between intercepts while the inferred category is for all the material around isolated intercepts (generally at depth) as well as extensions beyond 50m from the last intercept.

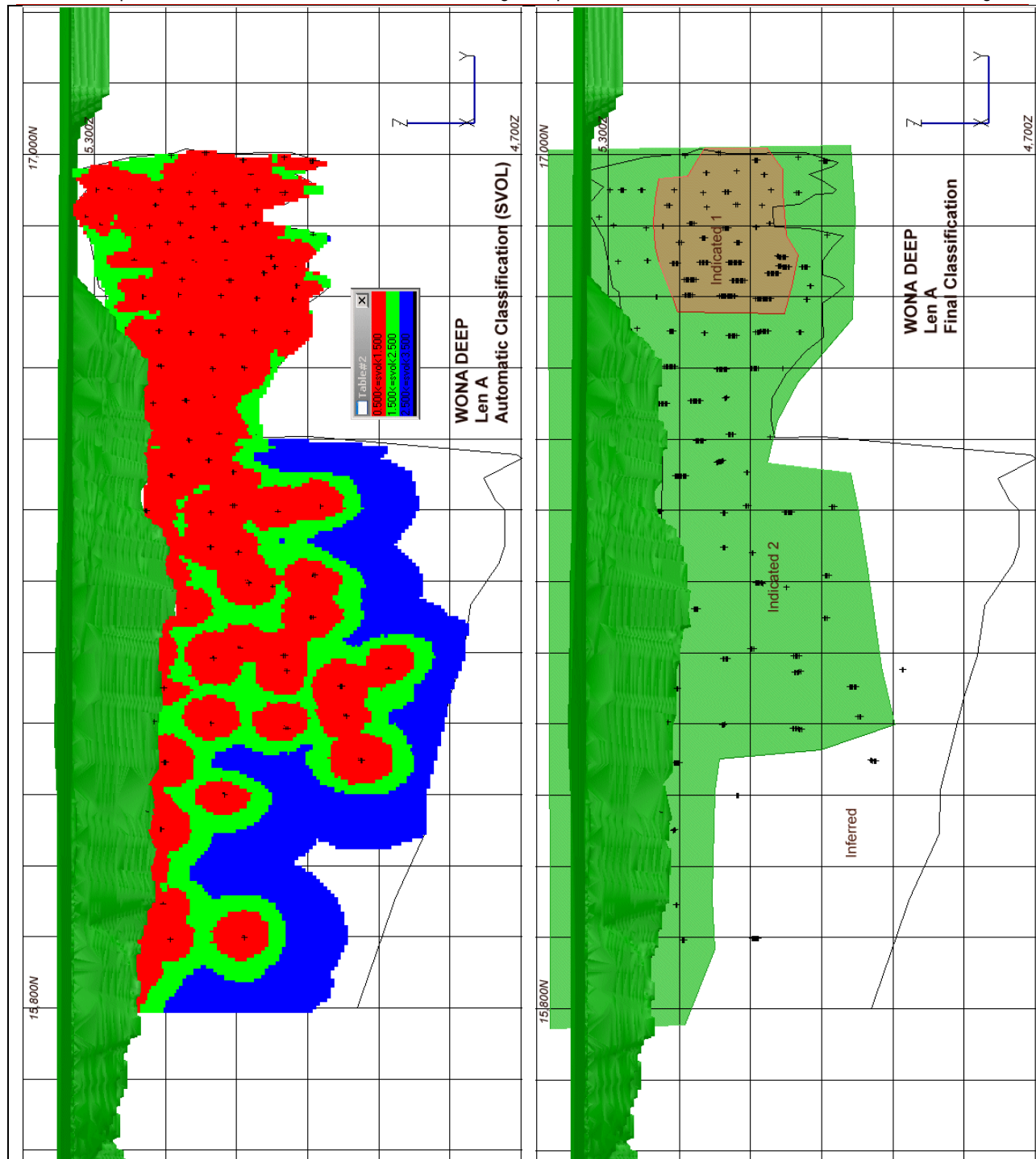


Figure 28 Block resource classification in len A of the Wona Deep sector

Left : automatic (SVOL) . Right : final. Top : current Wona final pits

18-3-6 Final Wona Deep resources

They are given on Tables 12 and 13 at the usual 0.6 g/t cut-off as well as Tables 14 and 15 at the higher 1.5 g/t cut-off (given the potential for underground rather than open-pit reserves). The cut-off is applied to the reconstructed average grade of all the material of the same len in the same parent block. Sub-blocks from different lenses in the same parent block are not merged to avoid dilution of high grade lenses (A, C, D and E) with surrounding low grade len B. The category (and ore type i.e. saprolite, saprock or bedrock) of the reconstructed block is selected as the dominant one in all the sub-blocks in the same parent block.

Zone	Type	Category	Tonnes	g/tAu	OzAu
A	SP	IND1	0	0.0	0
A	SP	IND2	21,000	2.8	1,900
A	SP	IND	21,000	2.8	1,900
A	SP	INF	0	0.0	0
A	SK	IND1	0	0.0	0
A	SK	IND2	41,000	2.5	3,300
A	SK	IND	41,000	2.5	3,300
A	SK	INF	0	0.0	0
A	BK	IND1	834,000	3.5	93,900
A	BK	IND2	3,492,000	3.4	377,100
A	BK	IND	4,325,000	3.4	471,000
A	BK	INF	2,046,000	3.7	242,300
A	ALL	IND1	834,000	3.5	93,900
A	ALL	IND2	3,554,000	3.3	382,300
A	ALL	IND	4,388,000	3.4	476,200
A	ALL	INF	2,046,000	3.7	242,300
B	SP	IND1	17,000	0.9	500
B	SP	IND2	13,000	0.8	300
B	SP	IND	30,000	0.9	800
B	SP	INF	0	0.0	0
B	SK	IND1	25,000	0.9	700
B	SK	IND2	33,000	0.8	800
B	SK	IND	58,000	0.8	1,600
B	SK	INF	0	0.0	0
B	BK	IND1	2,777,000	1.0	88,800
B	BK	IND2	4,745,000	0.9	138,000
B	BK	IND	7,522,000	0.9	226,800
B	BK	INF	1,260,000	0.8	33,600
B	ALL	IND1	2,819,000	1.0	90,000
B	ALL	IND2	4,790,000	0.9	139,200
B	ALL	IND	7,609,000	0.9	229,200
B	ALL	INF	1,260,000	0.8	33,600
C	SP	IND1	0	0.0	0
C	SP	IND2	0	2.3	0
C	SP	IND	0	2.3	0
C	SP	INF	0	0.0	0
C	SK	IND1	0	0.0	0
C	SK	IND2	3,000	2.6	300
C	SK	IND	3,000	2.6	300
C	SK	INF	0	0.0	0
C	BK	IND1	173,000	3.0	16,500
C	BK	IND2	474,000	2.9	44,300
C	BK	IND	647,000	2.9	60,700
C	BK	INF	0	0.0	0
C	ALL	IND1	173,000	3.0	16,500
C	ALL	IND2	478,000	2.9	44,500
C	ALL	IND	651,000	2.9	61,000
C	ALL	INF	0	0.0	0

Table 12 Estimated resources of the Wona Deep sector at the 0.6g/t cut-off (1 of 2)

Resources include potential reserves. Because of necessary rounding, totals may not correspond exactly to the sum of components.

Zone	Type	Category	Tonnes	g/tAu	OzAu
D	SP	IND1	21,000	1.4	900
D	SP	IND2	98,000	2.2	6,900
D	SP	IND	119,000	2.1	7,900
D	SP	INF	0	0.0	0
D	SK	IND1	26,000	2.2	1,800
D	SK	IND2	55,000	2.4	4,100
D	SK	IND	81,000	2.3	5,900
D	SK	INF	0	0.0	0
D	BK	IND1	2,316,000	3.7	276,400
D	BK	IND2	2,350,000	2.9	220,300
D	BK	IND	4,666,000	3.3	496,700
D	BK	INF	4,429,000	2.0	283,000
D	ALL	IND1	2,362,000	3.7	279,200
D	ALL	IND2	2,503,000	2.9	231,300
D	ALL	IND	4,866,000	3.3	510,500
D	ALL	INF	4,429,000	2.0	283,000
E	SP	IND1	0	0.0	0
E	SP	IND2	0	0.0	0
E	SP	IND	0	0.0	0
E	SP	INF	0	0.0	0
E	SK	IND1	0	0.0	0
E	SK	IND2	0	0.0	0
E	SK	IND	0	0.0	0
E	SK	INF	0	0.0	0
E	BK	IND1	129,000	3.4	14,200
E	BK	IND2	529,000	3.0	51,000
E	BK	IND	659,000	3.1	65,200
E	BK	INF	375,000	2.2	26,300
E	ALL	IND1	129,000	3.4	14,200
E	ALL	IND2	529,000	3.0	51,000
E	ALL	IND	659,000	3.1	65,200
E	ALL	INF	375,000	2.2	26,300
All	SP	IND1	38,000	1.2	1,400
All	SP	IND2	441,000	2.2	30,800
All	SP	IND	479,000	2.1	32,300
All	SP	INF	154,000	1.1	5,500
All	SK	IND1	51,000	1.5	2,500
All	SK	IND2	198,000	2.0	12,800
All	SK	IND	249,000	1.9	15,300
All	SK	INF	59,000	1.2	2,200
All	BK	IND1	6,229,000	2.5	489,900
All	BK	IND2	12,018,000	2.2	853,000
All	BK	IND	18,247,000	2.3	1,342,800
All	BK	INF	10,861,000	2.2	755,500
All	ALL	IND1	6,317,000	2.4	493,800
All	ALL	IND2	12,657,000	2.2	896,700
All	ALL	IND	18,975,000	2.3	1,390,500
All	ALL	INF	11,074,000	2.1	763,200

Table 13 Estimated resources of the Wona Deep sector at the 0.6g/t cut-off (2of 2)

Resources include potential reserves. Because of necessary rounding, totals may not correspond exactly to the sum of components.

Zone	Type	Category	Tonnes	g/tAu	OzAu
A	SP	IND1	0	0.0	0
A	SP	IND2	21,000	2.8	1,900
A	SP	IND	21,000	2.8	1,900
A	SP	INF	0	0.0	0
A	SK	IND1	0	0.0	0
A	SK	IND2	41,000	2.5	3,300
A	SK	IND	41,000	2.5	3,300
A	SK	INF	0	0.0	0
A	BK	IND1	833,000	3.5	93,900
A	BK	IND2	3,462,000	3.4	375,900
A	BK	IND	4,295,000	3.4	469,800
A	BK	INF	2,033,000	3.7	241,800
A	ALL	IND1	833,000	3.5	93,900
A	ALL	IND2	3,525,000	3.4	381,000
A	ALL	IND	4,357,000	3.4	474,900
A	ALL	INF	2,033,000	3.7	241,800
B	SP	IND1	0	1.5	0
B	SP	IND2	0	0.0	0
B	SP	IND	0	1.5	0
B	SP	INF	0	0.0	0
B	SK	IND1	0	1.6	0
B	SK	IND2	0	1.7	0
B	SK	IND	1,000	1.7	0
B	SK	INF	0	0.0	0
B	BK	IND1	217,000	1.8	12,600
B	BK	IND2	148,000	1.7	8,300
B	BK	IND	366,000	1.8	20,800
B	BK	INF	13,000	1.7	700
B	ALL	IND1	218,000	1.8	12,600
B	ALL	IND2	149,000	1.7	8,300
B	ALL	IND	367,000	1.8	20,900
B	ALL	INF	13,000	1.7	700
C	SP	IND1	0	0.0	0
C	SP	IND2	0	2.3	0
C	SP	IND	0	2.3	0
C	SP	INF	0	0.0	0
C	SK	IND1	0	0.0	0
C	SK	IND2	3,000	2.6	300
C	SK	IND	3,000	2.6	300
C	SK	INF	0	0.0	0
C	BK	IND1	169,000	3.0	16,300
C	BK	IND2	410,000	3.2	42,000
C	BK	IND	580,000	3.1	58,300
C	BK	INF	0	0.0	0
C	ALL	IND1	169,000	3.0	16,300
C	ALL	IND2	414,000	3.2	42,300
C	ALL	IND	583,000	3.1	58,600
C	ALL	INF	0	0.0	0

Table 14 Estimated resources of the Wona Deep sector at the 1.5g/t cut-off (1 of 2)

Resources include potential reserves. Because of necessary rounding, totals may not correspond exactly to the sum of components.

Zone	Type	Category	Tonnes	g/tAu	OzAu
D	SP	IND1	8,000	2.1	600
D	SP	IND2	76,000	2.5	6,000
D	SP	IND	84,000	2.4	6,600
D	SP	INF	0	0.0	0
D	SK	IND1	20,000	2.5	1,600
D	SK	IND2	41,000	2.8	3,600
D	SK	IND	61,000	2.7	5,200
D	SK	INF	0	0.0	0
D	BK	IND1	2,242,000	3.8	273,800
D	BK	IND2	2,163,000	3.1	213,500
D	BK	IND	4,405,000	3.4	487,300
D	BK	INF	3,285,000	2.3	239,200
D	ALL	IND1	2,270,000	3.8	276,000
D	ALL	IND2	2,280,000	3.0	223,100
D	ALL	IND	4,550,000	3.4	499,100
D	ALL	INF	3,285,000	2.3	239,200
E	SP	IND1	0	0.0	0
E	SP	IND2	0	0.0	0
E	SP	IND	0	0.0	0
E	SP	INF	0	0.0	0
E	SK	IND1	0	0.0	0
E	SK	IND2	0	0.0	0
E	SK	IND	0	0.0	0
E	SK	INF	0	0.0	0
E	BK	IND1	121,000	3.6	13,900
E	BK	IND2	509,000	3.1	50,200
E	BK	IND	630,000	3.2	64,100
E	BK	INF	329,000	2.4	24,900
E	ALL	IND1	121,000	3.6	13,900
E	ALL	IND2	509,000	3.1	50,200
E	ALL	IND	630,000	3.2	64,100
E	ALL	INF	329,000	2.4	24,900
All	SP	IND1	9,000	2.1	600
All	SP	IND2	319,000	2.6	26,600
All	SP	IND	328,000	2.6	27,100
All	SP	INF	25,000	1.7	1,400
All	SK	IND1	20,000	2.5	1,600
All	SK	IND2	136,000	2.5	10,900
All	SK	IND	157,000	2.5	12,500
All	SK	INF	13,000	1.9	800
All	BK	IND1	3,582,000	3.6	410,500
All	BK	IND2	6,871,000	3.2	704,400
All	BK	IND	10,454,000	3.3	1,114,900
All	BK	INF	6,978,000	2.8	630,400
All	ALL	IND1	3,611,000	3.6	412,700
All	ALL	IND2	7,327,000	3.2	741,900
All	ALL	IND	10,938,000	3.3	1,154,600
All	ALL	INF	7,017,000	2.8	632,600

Table 15 Estimated resources of the Wona Deep sector at the 1.5g/t cut-off (2of 2)

Resources include potential reserves. Because of necessary rounding, totals may not correspond exactly to the sum of components.

18-4 Overall resources and reserves

Tables 16 to 18 show the final resources (before reserves) for Mana deposits at the 0.6 g/t cut-off. Nyafe resources are given in the three natural sectors i.e. North, Center and South. Wona resources are separated into a South, a North and a Deep sector. Given the way resources in the Wona Deep sector are reported (see section 18-3), resources of the South sector are all resources without any restriction on elevation south of 15,800N, but only resources within the final south pit north of 15,800N. Resources of the North sector are just those within the final north pit.

As indicated before, Mana reserves at the end of 2009 (Tables 19 and 20) are simply the “modified” resources left in the final pits at the end of 2009. More precisely, they are the sum of recovered + diluted resources in 5x5x3.33m blocks within the final pit shell with a diluted grade above the corresponding marginal cut-off (Table 5).

Estimated remaining resources (after reserves) at the end of 2009 are on Tables 21 and 22. In the open-pit sectors, we separate the overall resources (blocks 5x5x3.33m of the resource model below the topo surface at the end of 2009 and with an estimated gold grade of its mineralized fraction above 0.6 g/t Au) into resources within the final pit surface and resources outside that final pit. To the latter, we add blocks of the former with a diluted grade of their mineralized fraction below the reserve cut-off and the blocks with inferred resources (inside and outside the final pit). The remaining resources of the Wona Deep sector are the same as the resources before reserves since no reserves have been delineated yet in that sector.

Pit	Type	Category	Tonnes	g/tAu	OzAu
F67	OX	MES	85,000	3.7	10,200
F67	OX	IND	22,000	3.4	2,400
F67	OX	M+I	107,000	3.7	12,600
F67	OX	INF	0	3.8	0
F67	SU	MES	13,000	3.0	1,200
F67	SU	IND	24,000	2.5	1,900
F67	SU	M+I	36,000	2.7	3,100
F67	SU	INF	51,000	2.7	4,400
F67	TOT	MES	98,000	3.6	11,400
F67	TOT	IND	46,000	2.9	4,300
F67	TOT	M+I	144,000	3.4	15,700
F67	TOT	INF	51,000	2.7	4,400
Nyafe N	OX	MES	157,000	6.5	32,700
Nyafe N	OX	IND	16,000	2.5	1,300
Nyafe N	OX	M+I	173,000	6.1	33,900
Nyafe N	OX	INF	23,000	2.3	1,600
Nyafe N	SU	MES	379,000	6.1	73,700
Nyafe N	SU	IND	230,000	4.1	30,300
Nyafe N	SU	M+I	609,000	5.3	103,900
Nyafe N	SU	INF	388,000	3.9	48,800
Nyafe N	TOT	MES	536,000	6.2	106,300
Nyafe N	TOT	IND	246,000	4.0	31,500
Nyafe N	TOT	M+I	782,000	5.5	137,900
Nyafe N	TOT	INF	410,000	3.8	50,500
Nyafe C	OX	MES	195,000	5.6	34,900
Nyafe C	OX	IND	9,000	2.7	800
Nyafe C	OX	M+I	204,000	5.4	35,600
Nyafe C	OX	INF	1,000	3.3	100
Nyafe C	SU	MES	134,000	5.7	24,700
Nyafe C	SU	IND	60,000	4.2	8,000
Nyafe C	SU	M+I	193,000	5.3	32,600
Nyafe C	SU	INF	156,000	3.0	14,900
Nyafe C	TOT	MES	329,000	5.6	59,500
Nyafe C	TOT	IND	68,000	4.0	8,700
Nyafe C	TOT	M+I	397,000	5.4	68,300
Nyafe C	TOT	INF	157,000	3.0	14,900
Nyafe S	OX	MES	83,000	4.1	10,800
Nyafe S	OX	IND	6,000	2.3	500
Nyafe S	OX	M+I	89,000	3.9	11,300
Nyafe S	OX	INF	8,000	2.9	700
Nyafe S	SU	MES	135,000	3.9	16,900
Nyafe S	SU	IND	48,000	2.9	4,400
Nyafe S	SU	M+I	184,000	3.6	21,300
Nyafe S	SU	INF	101,000	2.5	8,100
Nyafe S	TOT	MES	218,000	4.0	27,700
Nyafe S	TOT	IND	55,000	2.8	4,900
Nyafe S	TOT	M+I	273,000	3.7	32,600
Nyafe S	TOT	INF	109,000	2.5	8,800
Nyafe all	OX	MES	435,000	5.6	78,300
Nyafe all	OX	IND	31,000	2.5	2,500
Nyafe all	OX	M+I	466,000	5.4	80,800
Nyafe all	OX	INF	31,000	2.4	2,400
Nyafe all	SU	MES	648,000	5.5	115,200
Nyafe all	SU	IND	337,000	3.9	42,700
Nyafe all	SU	M+I	985,000	5.0	157,900
Nyafe all	SU	INF	645,000	3.5	71,800
Nyafe all	TOT	MES	1,083,000	5.6	193,600
Nyafe all	TOT	IND	369,000	3.8	45,200
Nyafe all	TOT	M+I	1,451,000	5.1	238,700
Nyafe all	TOT	INF	676,000	3.4	74,200

Table 16 Estimated resources of Mana deposits at the 0.6g/t cut-off (1 of 3)

Resources include potential reserves. Because of necessary rounding, totals may not correspond exactly to the sum of components.

Pit	Type	Category	Tonnes	g/tAu	OzAu
Wona south	SP	MES	1,749,000	2.8	156,900
Wona south	SP	IND	63,000	1.6	3,300
Wona south	SP	M+I	1,812,000	2.7	160,200
Wona south	SP	INF	11,000	1.3	500
Wona south	SK	MES	1,300,000	2.6	108,100
Wona south	SK	IND	77,000	1.8	4,400
Wona south	SK	M+I	1,377,000	2.5	112,500
Wona south	SK	INF	14,000	1.2	600
Wona south	BK	MES	3,519,000	2.4	271,500
Wona south	BK	IND	1,661,000	2.2	119,200
Wona south	BK	M+I	5,180,000	2.3	390,700
Wona south	BK	INF	914,000	2.2	66,100
Wona south	TOT	MES	6,568,000	2.5	536,600
Wona south	TOT	IND	1,801,000	2.2	126,800
Wona south	TOT	M+I	8,369,000	2.5	663,400
Wona south	TOT	INF	939,000	2.2	67,100
Wona north	SP	MES	0	0.0	0
Wona north	SP	IND	332,000	3.8	40,100
Wona north	SP	M+I	332,000	3.8	40,100
Wona north	SP	INF	4,000	1.5	200
Wona north	SK	MES	0	0.0	0
Wona north	SK	IND	47,000	3.7	5,500
Wona north	SK	M+I	47,000	3.7	5,500
Wona north	SK	INF	0	0.0	0
Wona north	BK	MES	0	0.0	0
Wona north	BK	IND	40,000	3.5	4,500
Wona north	BK	M+I	40,000	3.5	4,500
Wona north	BK	INF	0	0.0	0
Wona north	TOT	MES	0	0.0	0
Wona north	TOT	IND	419,000	3.7	50,100
Wona north	TOT	M+I	419,000	3.7	50,100
Wona north	TOT	INF	4,000	1.5	200
Wona deep	OX	IND1	38,000	1.2	1,400
Wona deep	OX	IND2	441,000	2.2	30,800
Wona deep	OX	IND	479,000	2.1	32,300
Wona deep	OX	INF	154,000	1.1	5,500
Wona deep	SK	IND1	51,000	1.5	2,500
Wona deep	SK	IND2	198,000	2.0	12,800
Wona deep	SK	IND	249,000	1.9	15,300
Wona deep	SK	INF	59,000	1.2	2,200
Wona deep	BK	IND1	6,229,000	2.5	489,900
Wona deep	BK	IND2	12,018,000	2.2	853,000
Wona deep	BK	IND	18,247,000	2.3	1,342,800
Wona deep	BK	INF	10,861,000	2.2	755,500
Wona deep	TOT	IND1	6,317,000	2.4	493,800
Wona deep	TOT	IND2	12,657,000	2.2	896,700
Wona deep	TOT	IND	18,975,000	2.3	1,390,500
Wona deep	TOT	INF	11,074,000	2.1	763,200
Wona deep	OX	IND1	38,000	1.2	1,400

Table 17 Estimated resources of Mana deposits at the 0.6g/t cut-off (2 of 3)

Resources include potential reserves. Because of necessary rounding, totals may not correspond exactly to the sum of components.

Pit	Type	Category	Tonnes	g/tAu	OzAu
Wona all	SP	MES	1,749,000	2.8	156,900
Wona all	SP	IND	874,000	2.7	75,700
Wona all	SP	M+I	2,623,000	2.8	232,600
Wona all	SP	INF	170,000	1.1	6,200
Wona all	SK	MES	1,300,000	2.6	108,100
Wona all	SK	IND	373,000	2.1	25,200
Wona all	SK	M+I	1,673,000	2.5	133,400
Wona all	SK	INF	73,000	1.2	2,800
Wona all	BK	MES	3,519,000	2.4	271,500
Wona all	BK	IND	19,948,000	2.3	1,466,500
Wona all	BK	M+I	23,466,000	2.3	1,738,000
Wona all	BK	INF	11,775,000	2.2	821,600
Wona all	TOT	MES	6,568,000	2.5	536,600
Wona all	TOT	IND	21,194,000	2.3	1,567,400
Wona all	TOT	M+I	27,762,000	2.4	2,104,000
Wona all	TOT	INF	12,018,000	2.1	830,500
Mana All	SP+OX	MES	2,269,000	3.4	245,500
Mana All	SP+OX	IND	927,000	2.7	80,600
Mana All	SP+OX	M+I	3,196,000	3.2	326,100
Mana All	SP+OX	INF	201,000	1.3	8,600
Mana All	SK+SU+BK	MES	5,480,000	2.8	496,100
Mana All	SK+SU+BK	IND	20,681,000	2.3	1,536,300
Mana All	SK+SU+BK	M+I	26,161,000	2.4	2,032,400
Mana All	SK+SU+BK	INF	12,543,000	2.2	900,500
Mana All	ALL	MES	7,749,000	3.0	741,600
Mana All	ALL	IND	21,608,000	2.3	1,616,900
Mana All	ALL	M+I	29,357,000	2.5	2,358,500
Mana All	ALL	INF	12,744,000	2.2	909,100

Table 18 Estimated resources of Mana deposits at the 0.6g/t cut-off (3 of 3)

Resources include potential reserves. Because of necessary rounding, totals may not correspond exactly to the sum of components.

Pit	Type	Category	Tonnes	g/tAu	OzAu
F67	OX	PROV	73,000	3.7	8,800
F67	OX	PROB	14,000	3.7	1,700
F67	OX	TOT	88,000	3.7	10,500
F67	SU	PROV	3,000	3.2	400
F67	SU	PROB	3,000	2.6	200
F67	SU	TOT	6,000	2.9	600
F67	All	PROV	77,000	3.7	9,100
F67	All	PROB	17,000	3.5	1,900
F67	All	TOT	94,000	3.7	11,100
Nyafe N	OX	PROV	157,000	6.1	30,800
Nyafe N	OX	PROB	10,000	2.3	800
Nyafe N	OX	TOT	167,000	5.9	31,500
Nyafe N	SU	PROV	291,000	5.9	54,700
Nyafe N	SU	PROB	43,000	4.8	6,700
Nyafe N	SU	TOT	334,000	5.7	61,400
Nyafe N	All	PROV	448,000	5.9	85,500
Nyafe N	All	PROB	53,000	4.3	7,400
Nyafe N	All	TOT	501,000	5.8	92,900
Nyafe C	OX	PROV	194,000	5.4	33,500
Nyafe C	OX	PROB	5,000	2.5	400
Nyafe C	OX	TOT	200,000	5.3	33,900
Nyafe C	SU	PROV	122,000	5.4	21,300
Nyafe C	SU	PROB	8,000	4.6	1,200
Nyafe C	SU	TOT	130,000	5.4	22,500
Nyafe C	All	PROV	316,000	5.4	54,800
Nyafe C	All	PROB	13,000	3.7	1,600
Nyafe C	All	TOT	330,000	5.3	56,400
Nyafe S	OX	PROV	84,000	3.8	10,400
Nyafe S	OX	PROB	5,000	2.6	400
Nyafe S	OX	TOT	89,000	3.8	10,800
Nyafe S	SU	PROV	109,000	4.0	14,000
Nyafe S	SU	PROB	16,000	3.8	2,000
Nyafe S	SU	TOT	125,000	4.0	16,000
Nyafe S	All	PROV	193,000	3.9	24,400
Nyafe S	All	PROB	21,000	3.5	2,400
Nyafe S	All	TOT	214,000	3.9	26,700
Nyafe All	OX	PROV	435,000	5.3	74,700
Nyafe All	OX	PROB	20,000	2.4	1,600
Nyafe All	OX	TOT	456,000	5.2	76,200
Nyafe All	SU	PROV	522,000	5.4	90,000
Nyafe All	SU	PROB	67,000	4.5	9,800
Nyafe All	SU	TOT	589,000	5.3	99,800
Nyafe All	All	PROV	958,000	5.3	164,700
Nyafe All	All	PROB	87,000	4.0	11,400
Nyafe All	All	TOT	1,045,000	5.2	176,000

Table 19 Estimated reserves of the Mana deposit as of December 31st, 2009 (1 of 2)

Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

Pit	Type	Category	Tonnes	g/tAu	OzAu
Wona South	SP	PROV	1,751,000	2.7	152,600
Wona South	SP	PROB	53,000	1.7	2,800
Wona South	SP	TOT	1,804,000	2.7	155,400
Wona South	SK	PROV	1,301,000	2.5	103,600
Wona South	SK	PROB	55,000	1.8	3,100
Wona South	SK	TOT	1,355,000	2.5	106,700
Wona South	BK	PROV	2,882,000	2.4	226,500
Wona South	BK	PROB	454,000	2.2	32,700
Wona South	BK	TOT	3,336,000	2.4	259,200
Wona South	All	PROV	5,934,000	2.5	482,800
Wona South	All	PROB	562,000	2.1	38,600
Wona South	All	TOT	6,495,000	2.5	521,400
Wona North	SP	PROV	0	0.0	0
Wona North	SP	PROB	335,000	3.6	39,100
Wona North	SP	TOT	335,000	3.6	39,100
Wona North	SK	PROV	0	0.0	0
Wona North	SK	PROB	49,000	3.4	5,400
Wona North	SK	TOT	49,000	3.4	5,400
Wona North	BK	PROV	0	0.0	0
Wona North	BK	PROB	42,000	3.2	4,400
Wona North	BK	TOT	42,000	3.2	4,400
Wona North	All	PROV	0	0.0	0
Wona North	All	PROB	426,000	3.6	48,800
Wona North	All	TOT	426,000	3.6	48,800
Wona All	SP	PROV	1,751,000	2.7	152,600
Wona All	SP	PROB	388,000	3.4	41,900
Wona All	SP	TOT	2,139,000	2.8	194,500
Wona All	SK	PROV	1,301,000	2.5	103,600
Wona All	SK	PROB	104,000	2.5	8,500
Wona All	SK	TOT	1,404,000	2.5	112,100
Wona All	BK	PROV	2,882,000	2.4	226,500
Wona All	BK	PROB	496,000	2.3	37,100
Wona All	BK	TOT	3,378,000	2.4	263,600
Wona All	All	PROV	5,934,000	2.5	482,800
Wona All	All	PROB	988,000	2.8	87,500
Wona All	All	TOT	6,921,000	2.6	570,200
Mana All	SP+OX	PROV	2,260,000	3.2	236,000
Mana All	SP+OX	PROB	422,000	3.3	45,200
Mana All	SP+OX	TOT	2,682,000	3.3	281,200
Mana All	SK+SU+BK	PROV	4,708,000	2.8	420,500
Mana All	SK+SU+BK	PROB	670,000	2.6	55,600
Mana All	SK+SU+BK	TOT	5,378,000	2.8	476,100
Mana All	All pits	PROV	6,968,000	2.9	656,500
Mana All	All pits	PROB	1,092,000	2.9	100,800
Mana All	All pits	TOT	8,061,000	2.9	757,300
Mana All	Rompad	PROV	260,000	1.5	12,400
Mana All	All	PROV	7,228,000	2.9	668,900
Mana All	All	PROB	1,092,000	2.9	100,800
Mana All	All	TOT	8,320,000	2.9	769,700

Table 20 Estimated reserves of the Mana deposit as of December 31st, 2009 (2 of 2)

Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

Deposit	Ore	Category	Resources outside final pit			Resources below reserve cut-off			Remaining resources		
			Tonnes	g/t Au	Oz Au	Tonnes	g/t Au	Oz Au	Tonnes	g/t Au	Oz Au
F67	OX	MES	17,000	2.1	1,200	2,000	0.9	100	20,000	2.0	1,200
F67	OX	IND	8,000	2.3	600	1,000	0.9	0	9,000	2.1	600
F67	OX	M+I	26,000	2.2	1,800	3,000	0.9	100	29,000	2.0	1,900
F67	OX	INF	0	1.9	0	0	4.8	0	0	3.9	0
F67	SU	MES	10,000	2.7	800	0	1.7	0	10,000	2.6	900
F67	SU	IND	20,000	2.5	1,600	1,000	1.7	0	21,000	2.4	1,700
F67	SU	M+I	30,000	2.5	2,500	1,000	1.7	100	31,000	2.5	2,500
F67	SU	INF	50,000	2.7	4,400	0	3.4	0	51,000	2.7	4,400
F67	TOT	MES	27,000	2.3	2,000	3,000	0.9	100	30,000	2.2	2,100
F67	TOT	IND	29,000	2.4	2,200	2,000	1.4	100	31,000	2.3	2,300
F67	TOT	M+I	56,000	2.4	4,200	4,000	1.1	200	60,000	2.3	4,400
F67	TOT	INF	50,000	2.7	4,400	0	3.7	0	51,000	2.7	4,400
Nyafe N	OX	MES	8,000	3.9	1,100	1,000	0.9	0	10,000	3.5	1,100
Nyafe N	OX	IND	6,000	2.6	500	1,000	0.9	0	7,000	2.4	500
Nyafe N	OX	M+I	14,000	3.4	1,500	2,000	0.9	100	16,000	3.0	1,600
Nyafe N	OX	INF	17,000	2.4	1,400	5,000	1.7	300	23,000	2.3	1,600
Nyafe N	SU	MES	121,000	4.4	17,200	7,000	1.5	300	128,000	4.3	17,600
Nyafe N	SU	IND	188,000	3.8	23,200	5,000	1.4	200	193,000	3.8	23,400
Nyafe N	SU	M+I	309,000	4.1	40,500	11,000	1.4	500	320,000	4.0	41,000
Nyafe N	SU	INF	376,000	3.9	47,200	11,000	4.6	1,700	388,000	3.9	48,800
Nyafe N	TOT	MES	129,000	4.4	18,300	8,000	1.4	400	138,000	4.2	18,700
Nyafe N	TOT	IND	194,000	3.8	23,700	5,000	1.3	200	199,000	3.7	23,900
Nyafe N	TOT	M+I	323,000	4.0	42,000	14,000	1.4	600	337,000	3.9	42,600
Nyafe N	TOT	INF	394,000	3.8	48,500	17,000	3.7	2,000	410,000	3.8	50,500
Nyafe C	OX	MES	4,000	2.6	400	9,000	0.9	200	13,000	1.4	600
Nyafe C	OX	IND	3,000	2.8	300	0	0.9	0	4,000	2.6	300
Nyafe C	OX	M+I	8,000	2.7	700	9,000	0.9	200	17,000	1.7	900
Nyafe C	OX	INF	0	3.4	0	1,000	3.3	100	1,000	3.3	100
Nyafe C	SU	MES	21,000	3.6	2,500	6,000	1.4	300	27,000	3.2	2,800
Nyafe C	SU	IND	52,000	4.1	6,800	1,000	0.8	0	53,000	4.0	6,800
Nyafe C	SU	M+I	73,000	3.9	9,300	7,000	1.3	300	80,000	3.7	9,600
Nyafe C	SU	INF	153,000	2.9	14,500	3,000	4.3	400	156,000	3.0	14,900
Nyafe C	TOT	MES	26,000	3.5	2,900	15,000	1.1	500	41,000	2.6	3,400
Nyafe C	TOT	IND	55,000	4.0	7,100	2,000	0.8	0	57,000	3.9	7,100
Nyafe C	TOT	M+I	81,000	3.8	9,900	16,000	1.1	600	97,000	3.4	10,500
Nyafe C	TOT	INF	154,000	2.9	14,500	3,000	4.1	400	157,000	3.0	14,900
Nyafe S	OX	MES	1,000	1.9	0	3,000	0.9	100	4,000	1.1	100
Nyafe S	OX	IND	2,000	1.3	100	0	0.9	0	2,000	1.3	100
Nyafe S	OX	M+I	3,000	1.5	100	3,000	0.9	100	6,000	1.2	200
Nyafe S	OX	INF	2,000	2.9	200	5,000	2.8	500	8,000	2.8	700
Nyafe S	SU	MES	34,000	2.0	2,300	6,000	1.6	300	40,000	2.0	2,600
Nyafe S	SU	IND	34,000	2.2	2,400	0	1.0	0	34,000	2.2	2,400
Nyafe S	SU	M+I	68,000	2.1	4,600	6,000	1.5	300	75,000	2.1	5,000
Nyafe S	SU	INF	98,000	2.5	7,800	3,000	3.0	300	101,000	2.5	8,100
Nyafe S	TOT	MES	35,000	2.0	2,300	9,000	1.3	400	44,000	1.9	2,700
Nyafe S	TOT	IND	36,000	2.1	2,500	0	1.0	0	36,000	2.1	2,500
Nyafe S	TOT	M+I	71,000	2.1	4,800	9,000	1.3	400	80,000	2.0	5,200
Nyafe S	TOT	INF	100,000	2.5	8,000	9,000	2.9	800	109,000	2.5	8,800
Nyafe All	OX	MES	14,000	3.3	1,500	13,000	0.9	400	27,000	2.1	1,800
Nyafe All	OX	IND	11,000	2.4	900	1,000	0.8	0	12,000	2.3	900
Nyafe All	OX	M+I	25,000	2.9	2,300	14,000	0.9	400	39,000	2.2	2,700
Nyafe All	OX	INF	20,000	2.5	1,600	11,000	2.4	900	31,000	2.4	2,400
Nyafe All	SU	MES	177,000	3.9	22,000	19,000	1.5	900	196,000	3.6	22,900
Nyafe All	SU	IND	273,000	3.7	32,400	6,000	1.2	300	280,000	3.6	32,600
Nyafe All	SU	M+I	450,000	3.8	54,400	25,000	1.4	1,200	475,000	3.6	55,500
Nyafe All	SU	INF	628,000	3.4	69,400	17,000	4.3	2,400	645,000	3.5	71,800
Nyafe All	TOT	MES	190,000	3.8	23,500	32,000	1.2	1,300	222,000	3.5	24,700
Nyafe All	TOT	IND	285,000	3.6	33,200	7,000	1.2	300	292,000	3.6	33,500
Nyafe All	TOT	M+I	475,000	3.7	56,700	39,000	1.2	1,600	514,000	3.5	58,300
Nyafe All	TOT	INF	647,000	3.4	71,000	28,000	3.5	3,200	676,000	3.4	74,200

Table 21 Remaining resources of the Mana deposits at the end of 2009 (1 of 2)

All resources are given at the 0.6 g/t Au cut-off..Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

Deposit	Ore	Category	Resources outside final pit			Resources below reserve cut-			Remaining resources		
			Tonnes	g/t	Oz Au	Tonnes	g/t Au	Oz Au	Tonnes	g/t	Oz Au
Wona south	SP	MES	2,000	2.6	100	12,000	0.7	300	14,000	1.0	400
Wona south	SP	IND	3,000	1.9	200	9,000	0.7	200	11,000	1.0	400
Wona south	SP	M+I	4,000	2.2	300	21,000	0.7	500	25,000	1.0	800
Wona south	SP	INF	0	0.6	0	11,000	1.3	500	11,000	1.3	500
Wona south	SK	MES	15,000	2.3	1,100	25,000	0.9	700	40,000	1.4	1,900
Wona south	SK	IND	13,000	2.1	900	12,000	0.8	300	26,000	1.5	1,200
Wona south	SK	M+I	28,000	2.2	2,000	37,000	0.9	1,100	66,000	1.5	3,100
Wona south	SK	INF	3,000	0.7	100	11,000	1.4	500	14,000	1.2	600
Wona south	BK	MES	343,000	2.1	23,400	389,000	1.3	15,800	733,000	1.7	39,200
Wona south	BK	IND	1,155,000	2.2	83,000	71,000	1.2	2,600	1,226,000	2.2	85,600
Wona south	BK	M+I	1,498,000	2.2	106,400	461,000	1.2	18,400	1,959,000	2.0	124,800
Wona south	BK	INF	892,000	2.3	65,100	23,000	1.4	1,000	914,000	2.2	66,100
Wona south	TOT	MES	360,000	2.1	24,700	426,000	1.2	16,800	786,000	1.6	41,500
Wona south	TOT	IND	1,171,000	2.2	84,000	93,000	1.1	3,200	1,263,000	2.1	87,200
Wona south	TOT	M+I	1,531,000	2.2	108,700	519,000	1.2	19,900	2,050,000	2.0	128,700
Wona south	TOT	INF	894,000	2.3	65,100	45,000	1.4	2,000	939,000	2.2	67,100
Wona north	SP	IND	0	0.0	0	3,000	0.7	100	3,000	0.7	100
Wona north	SP	M+I	0	0.0	0	3,000	0.7	100	3,000	0.7	100
Wona north	SP	INF	0	0.0	0	4,000	1.5	200	4,000	1.5	200
Wona north	TOT	IND	0	0.0	0	3,000	0.7	100	3,000	0.7	100
Wona north	TOT	M+I	0	0.0	0	3,000	0.7	100	3,000	0.7	100
Wona north	TOT	INF	0	0.0	0	4,000	1.5	200	4,000	1.5	200
Wona deep	SP	IND	479,000	2.1	32,300	0	0.0	0	479,000	2.1	32,300
Wona deep	SP	INF	154,000	1.1	5,500	0	0.0	0	154,000	1.1	5,500
Wona deep	SK	IND	249,000	1.9	15,300	0	0.0	0	249,000	1.9	15,300
Wona deep	SK	INF	59,000	1.2	2,200	0	0.0	0	59,000	1.2	2,200
Wona deep	BK	IND	18,247,000	2.3	1,342,800	0	0.0	0	18,247,000	2.3	1,342,800
Wona deep	BK	INF	10,861,000	2.2	755,500	0	0.0	0	10,861,000	2.2	755,500
Wona deep	TOT	IND	18,975,000	2.3	1,390,500	0	0.0	0	18,975,000	2.3	1,390,500
Wona deep	TOT	INF	11,074,000	2.1	763,200	0	0.0	0	11,074,000	2.1	763,200
Wona all	SP	MES	2,000	2.6	100	12,000	0.7	300	14,000	1.0	400
Wona all	SP	IND	481,000	2.1	32,400	12,000	0.7	300	493,000	2.1	32,700
Wona all	SP	M+I	483,000	2.1	32,600	24,000	0.7	500	507,000	2.0	33,100
Wona all	SP	INF	154,000	1.1	5,500	15,000	1.4	700	170,000	1.1	6,200
Wona all	SK	MES	15,000	2.3	1,100	25,000	0.9	700	40,000	1.4	1,900
Wona all	SK	IND	262,000	1.9	16,200	12,000	0.8	300	275,000	1.9	16,500
Wona all	SK	M+I	277,000	1.9	17,300	37,000	0.9	1,100	315,000	1.8	18,400
Wona all	SK	INF	62,000	1.1	2,300	11,000	1.4	500	73,000	1.2	2,800
Wona all	BK	MES	343,000	2.1	23,400	389,000	1.3	15,800	733,000	1.7	39,200
Wona all	BK	IND	19,402,000	2.3	1,425,900	71,000	1.1	2,600	19,473,000	2.3	1,428,500
Wona all	BK	M+I	19,745,000	2.3	1,449,300	461,000	1.2	18,400	20,206,000	2.3	1,467,700
Wona all	BK	INF	11,752,000	2.2	820,500	23,000	1.4	1,000	11,775,000	2.2	821,600
Wona all	TOT	MES	360,000	2.1	24,700	426,000	1.2	16,800	786,000	1.6	41,500
Wona all	TOT	IND	20,145,000	2.3	1,474,500	96,000	1.0	3,200	20,241,000	2.3	1,477,700
Wona all	TOT	M+I	20,506,000	2.3	1,499,200	522,000	1.2	20,000	21,028,000	2.2	1,519,200
Wona all	TOT	INF	11,968,000	2.2	828,300	49,000	1.4	2,200	12,018,000	2.1	830,500
Mana All	SP+OX	MES	32,000	2.7	2,800	27,000	0.8	700	60,000	1.8	3,500
Mana All	SP+OX	IND	501,000	2.1	33,900	14,000	0.7	300	515,000	2.1	34,200
Mana All	SP+OX	M+I	534,000	2.1	36,700	41,000	0.8	1,000	575,000	2.0	37,700
Mana All	SP+OX	INF	174,000	1.3	7,000	27,000	1.8	1,600	201,000	1.3	8,600
Mana All	SK+SU	MES	545,000	2.7	47,400	433,000	1.3	17,400	978,000	2.1	64,800
Mana All	SK+SU	IND	19,958,000	2.3	1,476,100	91,000	1.1	3,300	20,049,000	2.3	1,479,300
Mana All	SK+SU	M+I	20,503,000	2.3	1,523,400	524,000	1.2	20,700	21,027,000	2.3	1,544,100
Mana All	SK+SU	INF	12,492,000	2.2	896,600	51,000	2.4	3,900	12,543,000	2.2	900,500
Mana All	ALL	MES	577,000	2.7	50,200	461,000	1.2	18,100	1,038,000	2.0	68,300
Mana All	ALL	IND	20,459,000	2.3	1,510,000	105,000	1.1	3,600	20,564,000	2.3	1,513,600
Mana All	ALL	M+I	21,036,000	2.3	1,560,100	566,000	1.2	21,700	21,602,000	2.3	1,581,900
Mana All	ALL	INF	12,666,000	2.2	903,600	78,000	2.2	5,500	12,744,000	2.2	909,100

Table 22 Remaining resources of the Mana deposits at the end of 2009 (2 of 2)

All resources are given at the 0.6 g/t Au cut-off. They .Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

19 Other relevant data and information

+ Mining operations

All mining operations are realized by open pit method. Like in many oxidized ore deposits, the Mana open pits have so far been exploited without drill & blast, permitting low overall production costs with high waste to ore ratios. When going down in the direction of the fresh rock, drilling and blasting will be required.

The ore selectivity is done by assaying the mineralized zones along berm trench samples. The geologists are drawing sampling lines on berms that are sampled for every 1.0m of length. The vertical influence of these samples is for 3.33 meters. According to the assay results the ore/waste contacts are drawn on berms and selective mining is done to separate what is defined as good grade ore, low grade ore or waste material. Technicians are assigned to the follow-up of all of the mining operations.

The open pit walls, except for some local faults or shear zones look very stable. The average designed pit slopes are 45° in saprolite or oxide ore and 55° in saprock, fresh rock or sulphide ore.

Since the beginning of mining activities in early 2008, Semafo Burkina Faso is using his own equipments and workforce. At the time of our visit, the fleet was composed of new Komatsu equipments, mainly:

- Ten off-highway trucks, model HD-465-7 of 45 cu. yd capacity
- Three hydraulic excavators (two PC 800 and one PC400)
- Three dozers (two D275 and one D375)
- Three wheel loaders (two WA600 and one WA420)
- Three graders (two 705 and one Caterpillar 16M)
- One tank truck
- One drill Atlas Copco Rock F9 (just arrived)

In 2009, two trucks HD-465-7 and one hydraulic excavator PC1250 have been added to the mining fleet.

The maintenance facilities look properly installed and sufficient for the present fleet. Most of the fleet looks in good working conditions and if spare parts are being delivered on time the availability of equipments should not be a problem.

In 2009, the mine has produced 1.53Mt ore and 9.92Mt of waste for an average stripping ratio of 6.5. With the contemplated 50% increase of the mill throughput in June 2010, the planned production rate for year 2010 should be around 1.9Mt ore.

+ Recoverability

The metallurgical processing method (carbon in leach – see section 17) will be the same for the next coming years as the ore will be similar to the actual one. Planned mill recoveries are 94% for saprolitic Wona ore, 76% for saprock and bedrock Wona ore, 87% for Nyafe (and F67) oxide ore and 71% for Nyafe (and F67) sulphide ore. In 2009, the mill processed 1.402Mt ore at a reconstructed head grade of 3.49 g/t and poured 153.5koz of gold for an average mill recovery of 94.3% which is in line with the above forecast recoveries and compares favourably with a planned production of 125koz.

+ Markets and contracts

The company does not have hedging program or forward sales contracts for the Mana mine. The gold production (dore bars) is shipped by truck and plane from the mine site and entirely sold at spot price.

+ Environmental considerations

An environmental impact study of the project has been made (Socrège, 2006). It includes rehabilitation and mine closure plan. Environmental control and monitoring of the Mana mining and milling operations is under the responsibility of the Environmental Manager for all Semafo operations in Africa.

On a monthly basis a special team of employees under the supervision of a coordinator is performing regular environmental controls. Due to the high impact of the rainy seasons, a special care is given to the monitoring of all water effluents and to the water level controls of the tailing pond.

The community development has been an important issue during the past years and the company is still very active in this sector and seen on site and in the vicinities of the mining center. The environmental impact study has defined the rules for compensation to local populations with lodging and revenues affected by the project

Following a governmental recommendation, a regular budget of \$0.10 per tonne of material, (ore and waste) is allowed in the economic analysis for rehabilitation purposes.

+ Taxation

Gold production is subject to a 3% royalty on gross value of gold sold. Profits by Semafo Burkina Faso SA are taxed with a rate of 20%. Repatriated dividends are subject to a 6.5% withholding tax. There is also a withholding tax of 10% on remuneration paid to outside suppliers (5% for suppliers with a place of business in Burkina Faso)

+ Capital and operating cost estimates

Semafo has been using new mining equipment since the beginning of its operations in early 2008. No major acquisition is contemplated in the years to come. An expansion of the mill throughput from 4000tpd to 6000tpd is planned for June 2010.

Estimated operating costs for the year 2010 are those used in the pit optimization exercises and listed in Table 5.

+ Economic analysis

A conceptual cash flow analysis is presented in Table 23. It is not based on a specific mine plan or pit mining schedule. It rather spreads the estimated reserves over the mine life of the operation, just based on the mill capacity. This capacity is estimated to be: 4500tpd for saprolite or oxide ore, 4200tpd for saprock ore and 4000tpd for bedrock or sulphide ore for the first 6 months of 2010 and 50% more after that, with an overall 90% utilization of the mill. In each pit, the strategy of the conceptual plan is to mine all saprolite or oxide ore first, then the saprock ore (Wona) and finally the bedrock or sulphide ore in the end. Annual stripping ratio (and average grade) for each type of ore in each pit is the total one for that type of ore in that pit as given in Table 6. Revenue and cost factors are those of the pit optimization exercises at the end of 2008 (Table 5). The discounting rate used is 5%. With those conditions, the NPV is estimated to be M\$154.2

+ Mine Life

As shown in Table 23, with the assumed mill capacity and utilization, the mine life is estimated to be a little bit more than 4 years.

Pit	Type	Year	2010	2011	2012	2013	2014	Total
Nyafe+F67	Waste OX	kTonnes	5,600	5,600				11,200
Nyafe+F67	Ore OX	kTonnes	270	270				540
Nyafe+F67	Ore OX	S/R	20.7	20.7				20.7
Nyafe+F67	Ore OX	g/t Au	5.0	5.0				5.0
Nyafe+F67	Ore OX	kOz Au	43	43				87
Nyafe+F67	Ore OX	Rec.kOzAu	38	38				75
Nyafe+F67	Waste SU	kTonnes			3,200	3,200		6,300
Nyafe+F67	Ore SU	kTonnes			300	300		600
Nyafe+F67	Ore SU	S/R			10.7	10.7		10.5
Nyafe+F67	Ore SU	g/t Au			5.2	5.2		5.2
Nyafe+F67	Ore SU	kOz Au			50	50		100
Nyafe+F67	Ore SU	Rec.kOzAu			36	36		71
Wona	Waste SP	kTonnes	16,700	6,000				22,700
Wona	Ore SP	kTonnes	1,580	560				2,140
Wona	Ore SP	S/R	10.6	10.7				10.6
Wona	Ore SP	g/t Au	2.9	2.9				2.8
Wona	Ore SP	kOz Au	143	51				195
Wona	Ore SP	Rec.kOzAu	135	48				183
Wona	Waste SK	kTonnes		7,000	600			7,700
Wona	Ore SK	kTonnes		1,290	110			1,400
Wona	Ore SK	S/R		5.4	5.5			5.5
Wona	Ore SK	g/t Au		2.5	2.5			2.5
Wona	Ore SK	kOz Au		103	9			112
Wona	Ore SK	Rec.kOzAu			90	8		
Wona	Waste BK	kTonnes			5,900	6,300	500	12,700
Wona	Ore BK	kTonnes			1,570	1,670	140	3,380
Wona	Ore BK	S/R			3.8	3.8	3.6	3.8
Wona	Ore BK	g/t Au			2.4	2.4	2.4	2.4
Wona	Ore BK	kOz Au			122	131	11	264
Wona	Ore BK	Rec.kOzAu				93	99	8
Rompad	Ore SP/OX	kTonnes					260	260
Rompad	Ore SP/OX	g/t Au					1.5	1.5
Rompad	Ore SP/OX	kOz Au					12	12
Rompad	Ore SP/OX	Rec.kOzAu						11
Total	Waste	kTonnes	22,300	18,600	9,700	9,400	500	60,600
Total	Ore	kTonnes	1,850	2,120	1,980	1,970	400	8,320
Total	Ore	Days	365	365	365	365	39	1499
Total	Ore	S/R	12.1	8.8	4.9	4.8	1.3	7.3
Total	Ore	g/t Au	3.1	2.9	2.8	2.9	1.8	2.9
Total	Ore	kOz Au	187	197	181	181	23	770
Total	Ore	Rec.kOzAu	172	175	136	135	19	639
Total	Gross	1000\$	124,600	126,700	98,500	97,400	14,000	461,300
Total	Mining	1000\$	31,600	27,300	19,600	19,600	1,100	99,200
Total	Milling	1000\$	36,000	44,000	52,900	53,400	3,700	190,200
Total	Net	1000\$	56,900	55,400	26,000	24,500	9,200	171,900
Total	NPV	1000\$						154,200

Table 23 Projected annual cash flows

Annual discounting rate of 5%. Because of some necessary rounding of estimates, the rounded totals may slightly differ from the sum of rounded individual estimates

20 Interpretation and conclusions

Reserves of the Mana deposits at the end of 2009 are estimated to be 8.32Mt @ 2.9 g/t or 770koz. Those reserves are distributed among six different pits plus the Rompad. Most of those reserves are in the Wona South pit with 6.49Mt @ 2.5g/t or 521koz. This is followed by the Nyafe North pit with 0.50Mt @ 5.8 g/t or 93koz. Both pits entered into production in 2008 and reconciliation numbers for 2009 indicate that the proposed average grade estimates for reserves in those two pits are realistic. The third pit that went into production in 2008 is the small Filon 67 (or F67) pit, next to Nyafe north, with remaining reserves estimated at 0.09Mt @ 3.7 g/t or 11koz.

The balance of reserves is spread between the Wona North pit (0.43Mt @ 3.6 g/t or 49koz), the Nyafe Center pit (0.33Mt @ 5.3 g/t or 56koz) and the Nyafe South pit (0.21Mt @ 3.9 g/t or 27koz). Those three pits have not been exploited in 2009 and their reserve numbers are the same as at the end of 2008.

With a large fraction of resources recognized by drill holes on sections at 12.5m spacing, most of the above reserves are in the proven category (a total of 6.97Mt @ 2.9 g/t or 696koz not including the Rompad reserves). Proven reserves dominate probable reserves in all the pits except the Wona North pit which is all probable with its drill holes on sections at 50m spacing.

No new open pit reserves have been declared in 2009, hence the reserves at the the end of 2009 are those at the end of 2008 less the production of 2009 in the Wona South, Nyafe North and F67 pits with adjustments from reconciliation (see section 18-2-2).

Remaining resources at the end of 2009 are estimated to be 21.6Mt @ 2.3 g/t or 1580koz in the M+I category and 12.7Mt @ 2.2 g/t or 910koz in the inferred category, both at the 0.6 g/t cut-off. This represents a significant increase from the remaining resources at the end of 2008 i.e. 12.9Mt @ 2.5 g/t or 1020koz in the M+I category and 7.2Mt @ 2.2 g/t or 510oz in the inferred category, always at the 0.6g/t cut-off. This increase of 560koz in the M+I category and 400oz in the inferred category is mostly the result of the 2009 surface core drilling (about 37,500m in 106 holes) on the Wona Deep sector i.e. from 15,800N up to 19,000N. Resources above 0.6 g/t of that Wona Deep sector now stand at 19.0Mt @ 2.3 g/t or 1390koz in the M+I category and 11.1Mt @2.1 g/t or 760koz in the inferred category. Metal wise, the part of Wona Deep in the overall remaining resources at 0.6 g/t cut-off is 88% for M+I resources and 84% for inferred resources. Given the underground reserves potential of the Wona Deep sector, a more significant resource estimate would be at the higher cut-off of 1.5 g/t i.e. 10.9Mt @ 3.3 g/t or 1150koz for M+I.

21 Recommendations

Most of the recommendations that we had at the end of 2008 have been followed, in particular those dealing with the drill hole database in Access, the QA/QC samples, the reconciliation of production and projected reserves to adjust modifying factors and the classification of resources beyond the purely automatic approach. Some are still pending hence we would like to take the opportunity of this report to re-iterate them:

+ Additional drilling to firm up probable reserves at the bottom of the Wona south pit: a significant fraction of the reserve blocks at the bottom of the Wona South pit are in resource blocks with bedrock material the grade of which is extended from the last (deepest) hole on the drill sections. It is suggested to add one additional RC hole about 25m below the currently last (deepest) hole on sections at 25m spacing in order to firm up the grade estimates of those resource blocks which have some significant influence on the profile of the final pit on most sections of this South Wona sector.

+ Test mining and milling of saprock and bedrock ore: since more than 60% of the open-pit reserves (metal-wise) at the end of 2009 lies in saprock and bedrock, it is important to start a test program to verify the mineability (blast hole patterns, blasting efficiency...) and millability (throughput, recovery) of that type of ore. That program would also allow verifying the validity of the cost factors applied to that type of ore in the optimization studies, hence the derivation of their reserves.

Obviously, the next big effort in 2010 is to try and convert some of the new M+I resources of the Wona deep sector into underground reserves. We understand that a positive scoping study was completed in the summer of 2009 with a resource model derived from core hole results up to WDC99 and that a prefaisability study based on the resource model presented in these pages has been launched.

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23 Certificate of qualifications

CERTIFICATE
To accompany the report entitled
"Technical Report on the Resources and Reserves
of the Mana gold deposits, Burkina Faso
(as of Dec. 31st, 2009)"
dated February 28th, 2010
(the "Technical Report")

I, Michel Dagbert, do hereby certify that:

1. I reside at 35 Anse Pleureuse, Laval, Quebec, Canada, H7Y 1V3.
2. I am a graduate from the Paris School of Mines with a B.Sc. Degree in Mining Engineering (1971) and McGill University of Montreal with a Dip. Grad. Studies in Geology (1972), and I have practiced my profession continuously since that time.
3. I am a member of the Professional Engineers of Quebec (Membership Number 45944).
4. I am a Senior Consultant with SGS Geostat Ltd, a firm of consulting geologists and engineers, based in Blainville, Quebec, which I have co-founded in 1981.
5. I am a Qualified Person for the purposes of National Instrument 43-101 "*Standards of Disclosure for Mineral Projects*" ("NI 43-101") with regard to a variety of mineral deposits and have knowledge and experience with mineral reserve and mineral resource estimation parameters and procedures including those involved in the preparation of technical reports.
6. I have reviewed all of the technical data provided by SEMAFO inc. regarding the mineral resource and reserve estimation for the Mana gold deposits at the end of 2009. I visited the Mana mine project site most recently in November 2008 for a period of five days.
7. I am responsible for the preparation of all sections of the Technical Report.
8. I have no personal knowledge as of the date of this certificate of any material fact or change, which is not reflected in the Technical Report.
9. I am independent of SEMAFO inc. as per the definition of section 1.4 of NI 43-101 and neither I, nor any affiliated entity of mine, is at present, under an agreement, arrangement or understanding or expects to become, an insider, associate, affiliated entity or employee of SEMAFO inc.
10. Neither I, nor any affiliated entity of mine own, directly or indirectly, nor expect to receive, any interest in the properties or securities of SEMAFO inc. and I have had no prior involvement with the property or project that is the subject of the Technical Report except for having been and being the author of the Technical Report.
11. Neither I, nor any affiliated entity of mine, have earned the majority of our income during the preceding three years from SEMAFO inc.
12. I have read NI 43-101 and Form 43-101F1 and I have prepared the Technical Report in compliance with NI 43-101 and Form 43-101F1 and in conformity with generally accepted Canadian mining industry practice.
13. As of the date of the certificate, 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.



Michel Dagbert, P.Eng.