NI 43-101 PRELIMINARY ECONOMIC ASSESSMENT

MANKARGA 5 GOLD DEPOSIT

TANLOUKA GOLD PROJECT, BURKINA FASO

TECHNICAL REPORT

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1. SUMMARY

1.1 Property Description and Ownership

West African Resources (WAF) is dual listed on the TSX and ASX.

The Tanlouka Gold Project is located approximately 90km east-southeast of Ouagadougou, the capital of Burkina Faso, lying approximately 20km south of Mogtedo the nearest regional town. Centroid co-ordinates for the Project are longitude 0° 51" W and latitude 12° 10" N. The Project covers an aggregate area of 115km^2, comprising one granted exploration licence.

WAF has a 90% interest in the Tanlouka property and has signed an agreement to acquire the remaining 10% of the project from GMC SARL, following completion of a positive feasibility study, a Burkina Faso registered entity.

1.2 Exploration History

The Mankarga 5 deposit was identified in 2000 by RAB Drilling following up anomalous rock chip and gold geochemistry anomalies that had been identified by surface sampling programs completed by previous worker Channel Resources Ltd in the late 1990's. Since then a number of RC and diamond drilling campaigns have been completed at the prospect by Channel and later West African Resources. By early 2014, a total of 60 RC Holes (7,296.2m), 79 diamond holes (16,722.8m) and 116 Aircore (AC) holes (4,601m) had been completed.

1.3 Geology and Mineralisation

The Tanlouka Gold Project occurs within the Manga-Sebba greenstone belt within a strongly arcuate volcano-sedimentary northeast-trending belt in the central domain that is bounded to the east by the Tiébélé-Dori-Markoye Fault, one of the two major structures subdividing Burkina Faso into three lithotectonic domains.

The geology of the Tanlouka area is characterised by metasedimentary and volcanosedimenatry rocks, intruded by mafic, diorite and granodiorite intrusions. The sediments vary from a mafic to felsic composition. At the Mankarga 5 area the metasedimentary pile is mostly composed of undifferentiated pelitic and psammitic metasediments as well as volcanosedimentary units. Psammite (Sps) and pelite (Spc) are consistently laminated and occasionally schistose. The metasediments pile has been intruded by a granodiorite which is occasionally porphyritic in texture, overprinted by shearing in places, and is generally parallel to sub-parallel with the main shear orientation.

The alteration mineralogy varies from chloritic to siliceous, albitic, calcitic and sericite-muscovite. The regional alteration is marked by chlorite, whereas sericite and silica are locally widespread in the sedimentary pile. Sericite/muscovite alteration is associated with weathering and also shears, with its intensity commonly decreasing with an increase in silicification overprint. Silicification appears shear-bound, which is likely to be associated with gold mineralisation. The metasediments are preferentially intensively silicified in close proximity to the granodiorite.

Observed gold mineralisation at Mankarga 5 appears to be associated with mineralised shear hosted quartz veins and veinlet arrays, silica, sulphide and carbonate-albite, and tourmaline-biotite alteration. Gold is free and is mainly associated with minor pyrite, chalcopyrite and arsenopyrite disseminations and stringers. The currently known mineralisation extends along strike for approximately 3km, approximately 100m across strike and approximately 300m in elevation.

The Markoye Fault is believed to be the main conduit for the gold mineralisation found on Tanlouka. Mankarga 5 is considered to be a shear zone hosted style disseminated sulphide gold deposit. Similar deposits are found in the late Proterozoic Birimian terranes of West Africa. These hydrothermal deposits are mostly late orogenic deposits and are associated with major shear zones.

1.4 Mineral Resource Estimate

Ravensgate has estimated an Indicated and Inferred Mineral Resource for the Mankarga 5 prospect (Table 1.1).

The most likely development scenario for the deposit is as an open cut (pit) mine. Based on this assumption reporting cut-offs of 0.5 g/t Au and 1.0 g/t Au are appropriate with the cut-off dependent on the scale of any potential future operation.

A breakdown of the estimate is as follows using a cut-off of 0.5g/t Au:

- Indicated Resource of 10.8 million tonnes at 1.3g/t gold for 0.437 million ounces gold;
- Inferred Resource of 32.7 million tonnes at 1.0g/t gold for 1.050 million ounces gold.

The Qualified Person understands that presently there are no major environmental, permitting, legal, taxation, socio-economic, marketing or political factors that have been identified that would materially affect the resource estimate.

Table 1.1 Mankarga 5 April 2014 Resource

Material Type	Cut-off (Au g/t)	INDICATED RESOURCE				INFERRED RESOURCE			
		Vol (m^3)	Tonnes	Grade (Au g/t)	Au Oz	Vol (m^3)	Tonnes	Grade (Au g/t)	Au Oz
Oxide	0.5	2,520,000	5,500,000	1.2	214,000	910,000	2,000,000	0.8	52,000
	1	1,210,000	2,700,000	1.7	145,000	160,000	400,000	1.5	17,000
Transitional	0.5	420,000	1,100,000	1.1	38,000	260,000	700,000	1.1	23,000
	1	180,000	500,000	1.6	23,000	70,000	200,000	2.2	13,000
Fresh	0.5	1,550,000	4,200,000	1.4	184,000	11,120,000	30,000,000	1.0	974,000
	1	970,000	2,600,000	1.7	146,000	4,020,000	10,800,000	1.5	538,000
Total	0.5	4,490,000	10,800,000	1.3	437,000	12,290,000	32,700,000	1.0	1,050,000
	1	2,360,000	5,700,000	1.7	315,000	4,250,000	11,400,000	1.6	568,000

1.5 Metallurgy

The Scoping Study assumes Mankarga 5 material will be processed by conventional heap leach processing with an initial production throughput of 1.6Mtpa. Test work completed to date confirms heap leach potential of oxide material with recoveries of up to 91.5% and averaging 82.5% returned in coarse feed size heap leach amenability cyanidation test work (ASX, TSXV: 09/05/2014). Test work also demonstrated low cyanide consumption of 0.3-0.4kg/t.

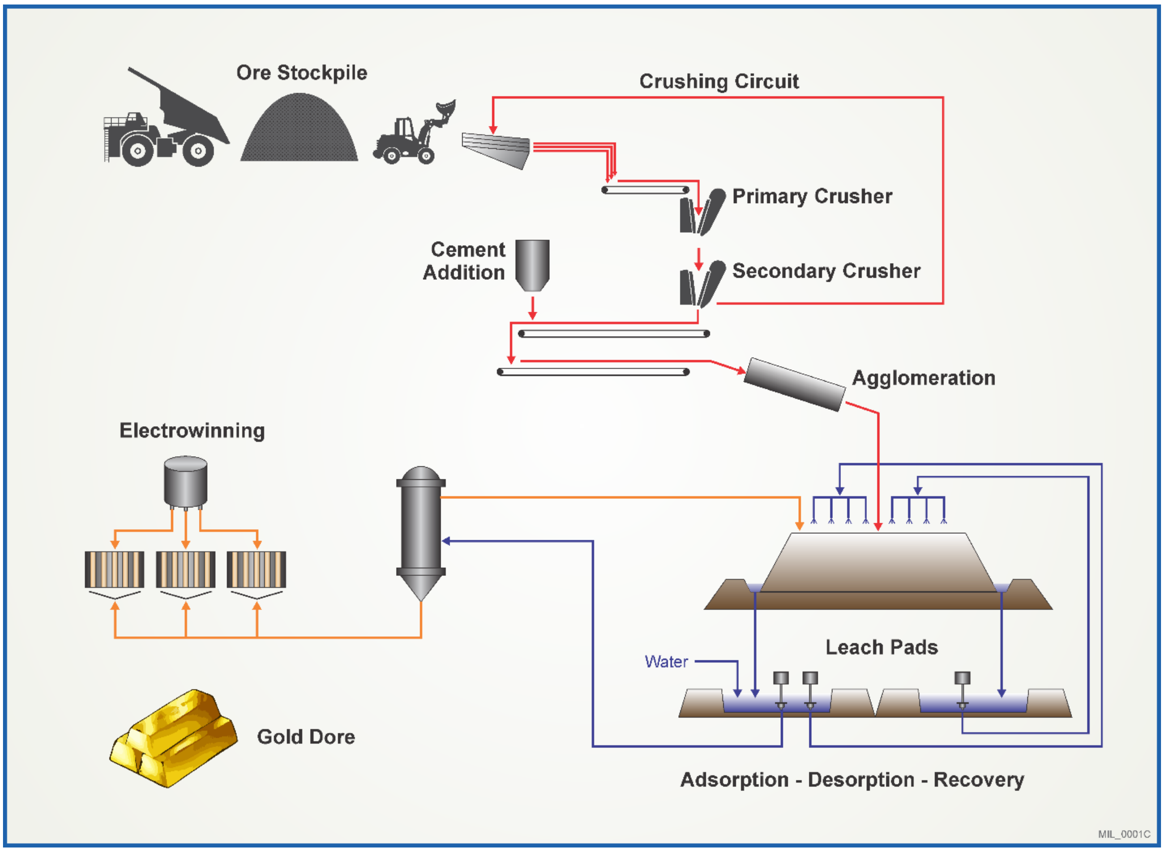
The process design proposes utilising existing plant and equipment purchased by West African earlier in 2014 with the installation of a new secondary crusher. The design proposes two stage crushing, cement addition and agglomeration, and overland conveying to heap leach pads. The pad area is designed with full plastic HDPE lining; conveyor stacking in three six metre lifts; and drip irrigation with dilute sodium cyanide solution. The adsorption plant is based on the purchase of new equipment which would be a modular design with gold recovery via elution, electrowinning and smelting to produce gold doré.

The relative proportion of plant feed over the LOM by Mineral Resource category is shown in Table 1.2 below.

Table 1.2 Plant feed by resource category

Plant Feed Mineral Resource Category	Tonnes (Mt)	Grade (g/t Au)	Contained Gold (Oz)
Indicated	6.5	1.10	231,000
Inferred	2.0	0.74	47,000

Figure 1.1 Simplified Process Flow Sheet



1.6 Mining

The Scoping Study proposes the development of the Mankarga 5 deposit via conventional truck and excavator open pit mining methods, including drill and blast, load and haul, using mining contractors. The mine design was completed in Surpac based on modified Whittle optimisation shells derived from the Ravensgate resource model. Various mining rates were considered however the optimal result was achieved based on the assumption of the open pit being mined out over a 26 month period using a mining contractor and a 100 tonne hydraulic excavator. Mining is proposed to advance continuously with ore stockpiled according to gold grade and oxidation state. The final open pit footprint will be approximately 2,800m long by up to 300m wide and up to a maximum depth of 60 vertical metres.

Total material movement over the life of mine is estimated at 16.8Mt including 8.5Mt of ore for a 1:1 LOM strip ratio. Over 90% of the material is classified as oxide. Strongly oxidised material is expected to be free dig and paddock scale drill and blast, required for the remainder of the material.

1.7 Project Infrastructure

There are no existing services currently available to support the proposed development of the Mankarga 5 heap leach project, as such the development project will require investment in a number of areas.

Site Development

The development plan proposes the plant ROM pad and primary crusher to be located approximately 600m from the northern side of the Heap Pad to minimise conveying distance from the agglomerate. The ADR, reagents, elution and gold room will be located close to the crushing and agglomeration area. Pregnant solution and storm water ponds will be located southeast of the heap utilising natural fall of the surface from northwest to southeast. Plant administration buildings will be located close to the crushing and agglomeration area. The study assumes that the mining contractor will be responsible for establishing all of the facilities required for all mining and maintenance.

Power Supply

The study proposes 3 x 750kW diesel-fired generators which will be modular and complete with acoustic enclosures and cooling systems. A Build Own Operate (BOO) contract will be adopted for the supply of this facility.

Operational Water Supply

The plants raw water will be supplied from a Water Storage Facility (WSF) which will be supplied from rain water runoff into nearby drainage system. It is intended to construct the WSF prior to the wet season to ensure sufficient water is stored when the plant goes into production. Potable water will be drawn from water bores.

Accommodation

The study proposes building a camp suitable to accommodate 65 personnel (with a financing agreement being used for provision of the camp) and assumes that the mining contractor will be responsible for the provision of their own camp.

Roads

The project area is located approximately 90km east southeast of the Capital Ouagadougou, and is accessed via bitumen highway (RN4) towards Koupela. Approximately 25km of existing dirt road will need to be upgraded from the town of Zempasgo to the proposed site. The development plan also accounts for general site access and haul roads.

1.8 Environmental

WAF is currently in the process of compiling an ESIA, through its main consultancy firm Knight Piésold Pty. Ltd. (KP). This firm will supervise the full environmental baseline studies, environmental and socio-economic impact assessments, and permitting with the assistance of a number of Burkinabe consulting firms such as INGRID, ExperiENS and SN-ERFAC. These Burkinabe environmental consultancies are experienced in this type of document, and this process will be managed in conjunction with WAF. Field baseline studies for both physical and social environments will be conducted from September 2014 through to June 2015 and the findings from these surveys will be incorporated into the ESIA submission when completed.

1.9 Capital and Operating Costs

The capital cost estimate has been prepared to a level equivalent of a scoping study, and is presented in US dollars to an accuracy level of ± 35%. A summary of the capital cost estimate is presented below.

Table 1.3 Capital Cost Summary			
Cost Area	**Sub-total US$**	**Contingency US$**	**Total US$**
Construction Overheads	$ 2,622,618	$ 393,393	$ 3,016,011
Plant Bulk Earthworks	$ 1,625,587	$ 243,838	$ 1,869,425
EPCM	$ 3,275,717	$ 491,358	$ 3,767,076
Area 10 - Crushing, Ag. and Stacking	$ 7,826,087	$ 1,173,913	$ 9,000,001
Area 30 - Leaching and Adsorption	$ 2,609,914	$ 391,487	$ 3,001,401
Area 50 - Metal Recovery and Refining	$ 2,595,410	$ 389,311	$ 2,984,721
Area 60 - Reagents	$ 482,182	$ 72,327	$ 554,509
Area 70 - Services	$ 572,759	$ 85,914	$ 658,673
Process Plant Costs	**$ 21,610,275**	**$ 3,241,541**	**$ 24,851,816**
WSF Facility	$ 2,000,000	$ 300,000	$ 2,300,000
Plant Infrastructure	$ 2,111,453	$ 316,718	$ 2,428,171
Camp	$ 2,182,894	$ 327,434	$ 2,510,328
Roads	$ 932,755	$ 139,913	$ 1,072,668
Misc. Electrical	$ 301,312	$ 45,197	$ 346,509
Plant Vehicles and Mobile Equipment	$ 780,800	$ 117,120	$ 897,920
Infrastructure Costs	**$ 6,126,320**	**$ 918,948**	**$ 7,045,268**
Temporary Construction Facilities	$ 442,799	$ 66,420	$ 509,219
Capital Spares	$ 373,373	$ 56,006	$ 429,379
First Fills	$ 764,076	$ 114,611	$ 878,687
Mining Pre-production	$ 1,000,000	$ 150,000	$ 1,150,000
Owner's Costs	$ 7,854,749	$ 1,178,212	$ 9,032,961
Indirect Costs	**$ 10,434,997**	**$ 1,565,250**	**$ 12,000,246**
Total Project Costs	**$ 38,579,404**	**$ 5,725,739**	**$ 43,897,331**

Mine operating costs for processing, maintenance, mining and administration have been estimated for a number of sources including:

- First principle estimates
- Consumption rates as provided in the Process Design Criteria
- Mintrex database of costs for similar operations the West African region

The LOM total cash costs for the project are estimated to be $671/oz and a breakdown is presented below in Table 1.4.

Table 1.4 LOM Operating Costs		
Operating Costs	**US$/t ore (processed)**	**US$/Oz (produced)**
Mining	$5.70	$206
Processing	$9.18	$332
G & A	$2.10	$76
Cash Operating Cost	**$16.98**	**$614**
Royalties	$1.58	$57
Total Cash Cost	**$18.56**	**$671**
Sustaining Capital	$0.39	$14
All-in sustaining Cash Cost	**$18.95**	**$685**

1.10 Economic Analysis

The base case is stated assuming 100% project basis and a gold price of $1,300/oz. All amounts are in US dollars unless otherwise stated. The results of the analysis of the Mankarga 5 Project, as it is currently envisaged, are very positive. The pre-tax Net Present Value (NPV) with a 5% discount rate is $84 million using a base gold price of $1,300/oz. Post-tax with the same 5% discount rate and $1,300 gold price the NPV is $64 million. Internal rates of return (IRR) are respectively 57% pre-tax and 49% post-tax. Payback on the project capital is expected to be 16 months pre-tax and 18 month years post-tax. The detailed results are shown in Table 1.5.

Table 1.5 Economic Summary			
Pre-Tax (100%)	**$1100/oz**	**$1300/oz**	**$1500/oz**
NPV$^{0\%}$ ($M)	$58	$103	$145
NPV$^{5\%}$ ($M)	$45	$84	$119
IRR %	37%	57%	71%
Payback (Months)	25	16	12
After-Tax (90%*)	**$1100/oz**	**$1300/oz**	**$1500/oz**
NPV$^{0\%}$ ($M)	$47	$80	$111
NPV$^{5\%}$ ($M)	$35	$64	$90
IRR %	32%	49%	62%
Payback (Months)	26	18	14
* Allows for 10% free carried Government interest			

1.11 Recommendations and Budget

Due to the positive results of this Preliminary Economic Assessment WAF will transition directly into the commencement of a Feasibility Study (FS) on the Mankarga 5 Project. It is recommended the following are included in the FS:

- Infill drilling at Mankarga 5 to upgrade the Mineral Resource to Indicated (400 holes 15,000m) enabling the estimation of updated Mineral Resources and Mineral Reserves. Estimated Cost: Completed
- Resource estimation studies. Estimated Cost: $0.08m

- Deeper drilling to test for high-grade shoot extensions and geotechnical studies. Estimated Cost US$1.0m
- Additional metallurgical test-work on Mankarga 5 oxide mineralisation enabling a final process plant flow sheet design. Estimated Cost: US$0.4m
- Completion of mine design and development of a mining plan and Life of Mine Schedule as well as refurbishment construction and development planning. US$0.5m
- Completion of environmental studies and monitoring as well as advancement of permitting of statutory requirements to enable mining and processing to commence. Estimated Cost: US$0.6m
- Technical management and field support $1.8m

FS Study and Permitting Total Planned Estimated Budget: US$4.4m.

2. INTRODUCTION

2.1 Terms of Reference

The Tanlouka Project is owned and operated by West African Resources Limited (WAF). WAF is a public company listed on the Australian Securities Exchange (ASX) and Toronto Stock Exchange (TSXV), and registered in Australia (ASX and TSX code: WAF).

WAF has prepared a Technical Report for the West Omai Gold Project to the standard of the Canadian National Instrument 43-101 "Standards of Disclosure for Mineral Projects" following the completion of a Preliminary Economic Assessment (PEA) covering the Mankarga 5 Deposit.

2.2 Purpose of Report

This report details the results of a PEA for the Tanlouka Project as outlined in the July 29st, 2014, new release by West African Resources Ltd. The following technical report conforms to the standards set out in NI 43-101, Standards and Disclosure for Mineral Projects, and pursuant to Form 43-101F.

2.3 Cautionary Notes

This report has been compiled based on information available up to and including the date of this report. The status of agreements, royalties or tenement standing pertaining to the assets, have not been investigated by contributing consultants and is not required to do so. All matters relating to ownership are to be directed to WAF for clarification if required.

2.4 Sources of Information

This report relies on information provided by Channel Resources as well as recent data generated since West African Resources completed a takeover of Channel Resources. WAF has engaged a number of specialist consultants and information from these reports prepared by previous independent consultants has been utilised in the compilation of this report. A full listing of the principal sources of information is included in Section 27 of this report.

2.5 Site Visits

The Independent Qualified Person (Mining Engineer), Declan Franzmann Principal Consultant CrossCut Engineering, visited the Tanlouka project in March 2014, a carried out meeting and discussions with key exploration personnel for project overview, field inspections of prospect areas including surface exposures, access to trenches, and field verification of drillhole locations and review of drill core.

Independent Mineral Resource consultants, Ravensgate, visited Tanlouka as well as WAF's neighbouring Boulsa project on several occasions between February 2010 and November 2012. These visits have included:

- Visits to the exploration sites, outcrop exposures, and observation of surface drilling, review of drill core from several diamond holes drilled at Mankarga 5 that form part of the Mankarga 5 resource estimate;
- Visits to neighbouring prospects including Meguet, Moktedu and Sartenga.
- Review of the exploration procedures used by WAF at the Tanlouka and Boulsa Project;
- Review of WAF exploration database;
- Review of geological setting of the deposit and surrounding area;
- Ravensgate carried out a site visit to the BIGS Assay laboratory in Ouagadougou (the main laboratory WAF has used for Au assays at the Tanlouka Project).

3. RELIANCE ON OTHER EXPERTS

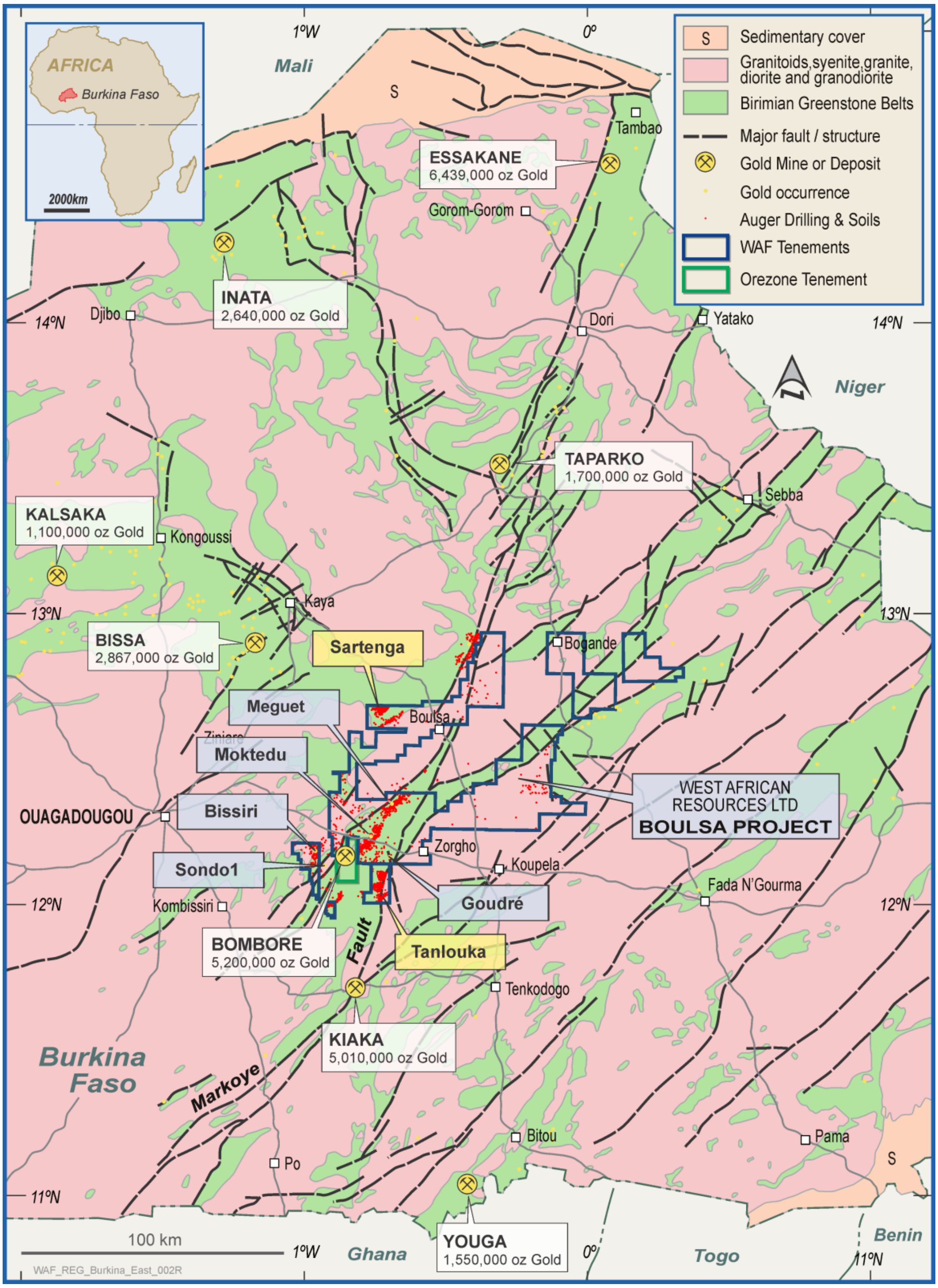
While information provided by WAF relating to mineral rights, surface rights and permitting has been reviewed, no opinion is offered in these areas. The Qualified Person is not expert in land, legal, permitting, and related matters and therefore has relied upon, and is satisfied, there is a reasonable basis for this reliance on the information provided by the WAF management regarding mineral rights, surface rights and permitting in Section 4 of this Technical Report. The qualified persons have relied upon the following information to compile Section 4; (1) the Information Memorandum titled "Tanlouka Gold Project – Project Review" dated April 2014 and authored by Richard Hyde of WAF, and (2) "Kere Avocats July 9 2012 Title Opinion Tanlouka Exploration Permit". The authors of this Technical Report, state that they are a Qualified Person for the areas as identified in the Certificate of Qualified Person attached to this report.

4. PROPERTY DESCRIPTION AND LOCATION

4.1 Property Description

The Tanlouka Gold Project covers an aggregate area of 115km^2, comprising one granted exploration licence Arrete No: 2013/128/MME/SG/DGMG, as shown in Figure 4.1.

Figure 4.1 Tanlouka Project Location



4.2 Property Location

The Tanlouka property is located approximately 90km east-southeast of Ouagadougou (Figure 4.1), the capital of Burkina Faso. The Tanlouka property is approximately 20km south of Mogtedo. Centroid co-ordinates for the Project are longitude 0° 51" W and latitude 12° 10" N.

4.3 Mineral Tenure

The Burkina Faso Ministry of Mines and Energy grants an Exploration Permit for a three year term which can then legitimately be renewed for two further three year terms providing all permit conditions are met. The Exploration Permit gives the title holder the exclusive right to explore for the above/below ground substance nominated and to also apply for an Exploitation Permit should a deposit of economic significance be identified.

The holder of an Exploration permit is required to submit a work program to the Mines Administration each year and expend a minimum of 270,000 FCFA per square kilometre (approximately \$CAD600 per km^2). In addition, surface area taxes are payable annually which range from 2,500 FCFA to 7,500 FCFA per square kilometre depending on the year of permit tenure (\$CAD5.50 to \$CAD16.50 per km^2).

An Exploitation permit is valid for 10 years and the state obtains a 10% free carrying interest in the project and a free on board royalty of 4% for base metals and 3% for precious metals.

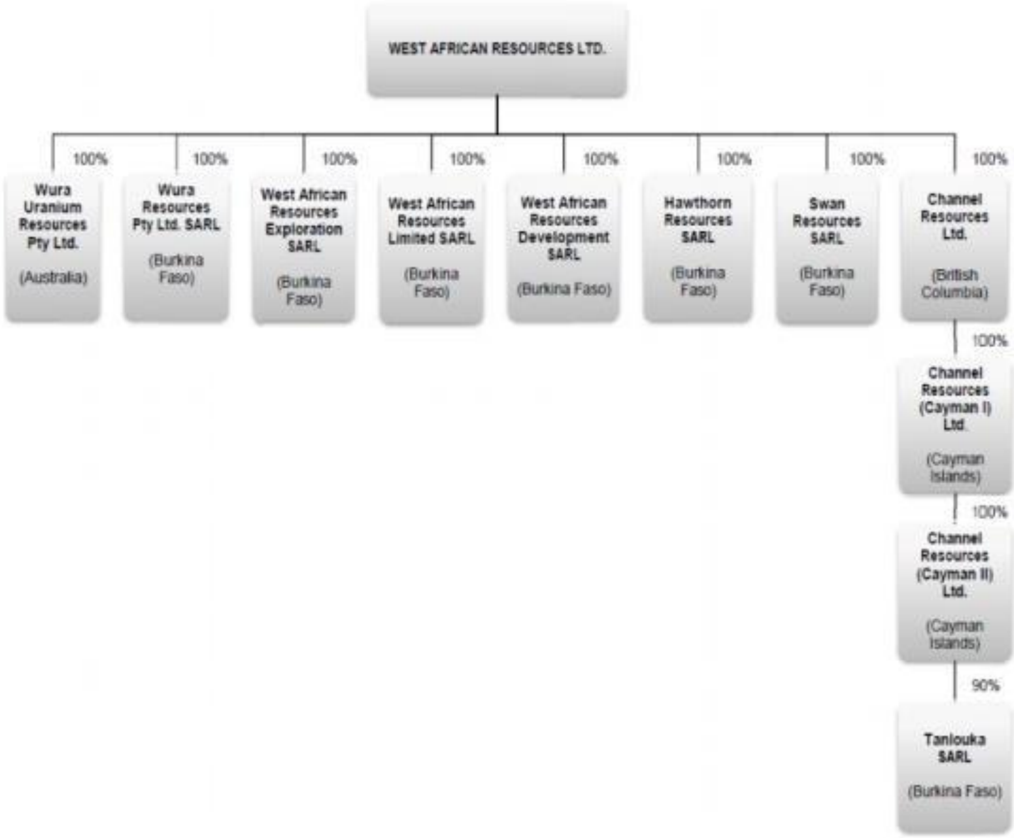
WAF has or is earning 100% interest in its key projects, which are exploration permits and have the necessary permitting and access to complete their proposed exploration work programs. Should areas that demonstrate economic viability be identified, these will need to be included within future mining licence applications. There is a history of foreign exploration companies successfully transitioning from explorer to miner in Burkina Faso and there is no reason why this would not be the case for WAF.

There is localised surface disturbance resulting from artisanal mining by local people. The project is at an early stage of development and aside from these minor surface disturbances there are currently no known environmental issues on the project. It is understood that no significant risks to project tenure or factors that would affect the ability to carry out planned work programs have been identified at this time.

4.4 Ownership

WAF is a Perth, Western Australia, based gold and copper exploration company dedicated to creating shareholder value through the acquisition, exploration and development of resource projects in Burkina Faso, West Africa. Its exploration assets consist of several Burkina Faso projects plus the Tanlouka Property. WAF acquired a 90% interest in the Tanlouka property through the acquisition of Channel Resources Ltd on 21 January 2014, and has signed an agreement to acquire the remaining 10% of the project from GMC SARL, a Burkina Faso registered entity. The following chart (Figure 4.2) illustrates the current corporate structure of WAF:

Figure 4.2 Corporate Structure - West African Resources Ltd



4.5 **Environmental**

Limited environmental studies on the Tanlouka property have been completed to date, but as the project continues to develop with positive results, collecting the appropriate environmental baseline data required for permitting will be initiated.

Artisanal mining activity has caused environmental impacts due primarily to the illegal use and disposal of chemical reagents; however, according to Burkina Faso law, WAF is not liable for any such impacts or reclamation. The environmental effects of artisanal mining have not been formally documented on the Tanlouka property.

5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Tanlouka gold project is located in central Burkina Faso, some 90km east of the capital Ouagadougou (Figure 4.1). The project includes major towns of Boulsa and Zorgho and is well serviced by grid power and mobile phone coverage. The project is accessed via the bitumen RN4 highway, which links Burkina Faso and Niger and crosscuts the south-western corner of the project area. Access within the project is excellent via all-weather formed gravel and sand roads and village tracks. Access during the rainy season, from July to September can be restricted, as parts of the permit can be waterlogged and flooded by temporary drainage.

The Tanlouka site is accessible by paved road from Ouagadougou to Mogtedo, a distance of approximately 80km, then by lateritic secondary road from Mogtedo to Tanlouka, a distance of about 25km (Figure 4.1). The secondary road is relatively flat with pot holes and is accessible for most of the year. From the exploration compound in Mogtedo to the Mankarga 5 deposit area, at the south end of the Tanlouka permit, the drive is approximately 45 minutes by truck.

5.2 Climate

Tanlouka is located south of the sub-Saharan Sahel of West Africa, and vegetation is predominantly open-forested savannah and grassland. The climate of the region is sub-tropical and semi-arid, with warm, dry winters and hot, wet summers. The wet season extends from mid-April until mid-October; peak rainfall months are August, September and October with an annual rainfall of 700mm to 1,000mm. During the wet season long grass covers uncultivated areas. Daytime temperatures range from 35°C to 45°C in the dry season and from 30°C to 35°C in the wet season.

Exploration activities can be curtailed during periods of heavy rain; however, it is expected that mining operations would be able to be conducted year-round.

5.3 Vegetation

Vegetation in uncultivated areas comprises savannah woodlands, with dense bush common along the seasonal watercourses. Crops under cultivation include millet, some rice, cotton, peanuts and corn. Wildlife is restricted to small game and birds, and snakes are common.

5.4 Local Resources and Infrastructure

The project is located in a relatively sparsely inhabited area of Burkina Faso. As such, infrastructure and local resources are poor and limited to communities close the major roads. Project execution would require building a Greenfields project with attendant infrastructure. Power for any future mining operation would have to be generated on site.

Rudimentary supplies to support exploration activities are available in the village of Mogtedo (population ~15,000), approximately 20km Northwest of the Tanlouka property. Mogtedo is the location of West African Resources' exploration compound and the location of archived sample and pulp rejects storage facilities, as well as a yard where drilling materials are being stored. In 2011, Channel built an exploration camp about 5km from the Mankarga 5 deposit area with sleeping quarters, bathrooms, showers and a kitchen. All major items and equipment must be imported or obtained from Ouagadougou.

The Bombore gold project, operated by Orezone Resources, is located approximately 8km northwest of Tanlouka. The Bombore project is currently at a more advanced stage than the Tanlouka project, so Tanlouka may benefit from possible infrastructure upgrades if Bombore continues to advance development ahead of Tanlouka.

Three water wells were drilled on the property. Two wells, located along Mankarga 5, were drilled to supply water for core drilling and are accompanied by holding ponds. The third well was drilled to provide potable water for the exploration camp. RC cuttings from these holes were assayed for gold.

Artisanal miners continue to operate in and around the Tanlouka project area. This workforce could be sourced to work on the Project but the local miners would need appropriate training in modern mining methods and processes.

5.5 Physiography

The property is flat to gently rolling with sparse outcrop (Figure 5.1). Locally, hills and ridges a few tens of meters high are capped by a hard, ferruginous laterite crust (cuirasse). The remainder of the terrain is composed of clay-rich saprolitic profiles that are up to 50m deep. Drainage patterns are rectangular to dendritic, reflecting late fracture systems trending mainly north-south, east-west and northwest-southeast.

Watercourses are dry for much of the year, but can quickly become wide and flooded during the rainy season.

Figure 5.1 Tanlouka Project: Photograph depicting typical physiography of the Tanlouka Permit

6. HISTORY

Work completed by Channel from 1996 to 2012 is well detailed in the report authored by Smith (2012) titled "NI 43-101 Technical Report on Mineral Resources for the Mankarga 5 Gold Deposit Tanlouka Property, Burkina Faso for Channel Resources". This NI 43-101 Technical Report was prepared by AMEC for Channel in August 2012 and details exploration work completed at the project and the maiden resource estimate for the Mankarga 5 prospect. The reader is referred to the above report for work done by Channel and their predecessors prior to 2012. A summary of this work is presented in the following sections.

GMC undertook the first known organized exploration over the Bombore permit from 1989 to 1993. This consisted of prospecting, hand panning of crushed rock and soils, some systematic rock sampling, hand excavation of trenches, plus limited mapping and site descriptions (Guérard, 1997).

Starting in 1994, the exploration work done on the Tanlouka permit was by Channel, while it was part of their Bombore permit. The following describes the work done on the Tanlouka portion of the Bombore permit.

In the period from 1994 to 1996, the permit area was covered by several reconnaissance style mapping and prospecting traverses, starting in the period of August to October of 1994 by Channel. During this time, when the end of the rainy season hampered other work, the Channel made 4-wheel truck traverses of the entire Bombore permit, and described all areas of artisanal workings and significant outcrop, classifying them for further work.

During this period, the main emphasis of work was the central area of the permit which became known as the Bombore First Target, and which is located northwest of the Tanlouka permit. At the time of this work, there were no known artisanal workings on what is now the Tanlouka permit, but eventually workings were found within the southwest corner of the Tanlouka property. There were other mapped areas, but these appear to be outside of the current Tanlouka permit area. A historical mineral resource estimate was carried out on the Mankarga 5 zone in 2012 by AMEC.

6.1 Geological Mapping and Rock Chip Sampling

In 1994 exploration on the Tanlouka property was undertaken by Channel while part of the Bombore permit. From 1994 to 1996, the permit area was covered by several reconnaissance style mapping and prospecting traverses by Channel. Channel further made 4-wheel truck traverses of the entire Bombore permit, which included the current outlined Tanlouka permit in the East and HRG's Mango Permit in the West. All areas of artisanal workings and significant outcrop were outlined.

Following positive soil geochemical results in the Mankarga area in September 1996, Channel's geologists recommended this area be geologically mapped at 1:50,000 scale. The first mapping and prospecting undertaken over the area of Tanlouka, with the exception of the early work by Anderson (1995) was completed in 1999. Most of the outcrops observed in the area of the gold-in-soils geochemical anomaly, were found to be composed of weakly to moderately deformed metagabbro with an associated major structural trend varying from 010° to 040°. These gabbros are intruded by metre scale, fine-grained felsic dykes, which are in turn fractured and injected by quartz stringers. A total of 14 rock samples were taken during this mapping program, mostly of quartz stringers plus a few intrusive rocks, and yielded uniformly low grade assay results for gold with a high value of 0.063 g/t Au in a grab sample. Between 2006 and 2012, a number of consultants (Anderson, Ouattara and SRK) were appointed to carry out mapping and desktop reviews so as to ascertain a geological interpretation of the area and establishing the mineralisation potential of the Tanlouka permit, and more specifically the Mankarga 5 ore body.

6.2 Geophysical Surveys

In March 1996 a fixed wing airborne geophysical survey was flown by Aerodat Inc. for magnetics, EM-VLF and Radiometrics, and (SPOT) images provided by MIR Teledetection Inc. Survey specs: 8,548 line km based on 300 m spacing with tie lines every 5 km.

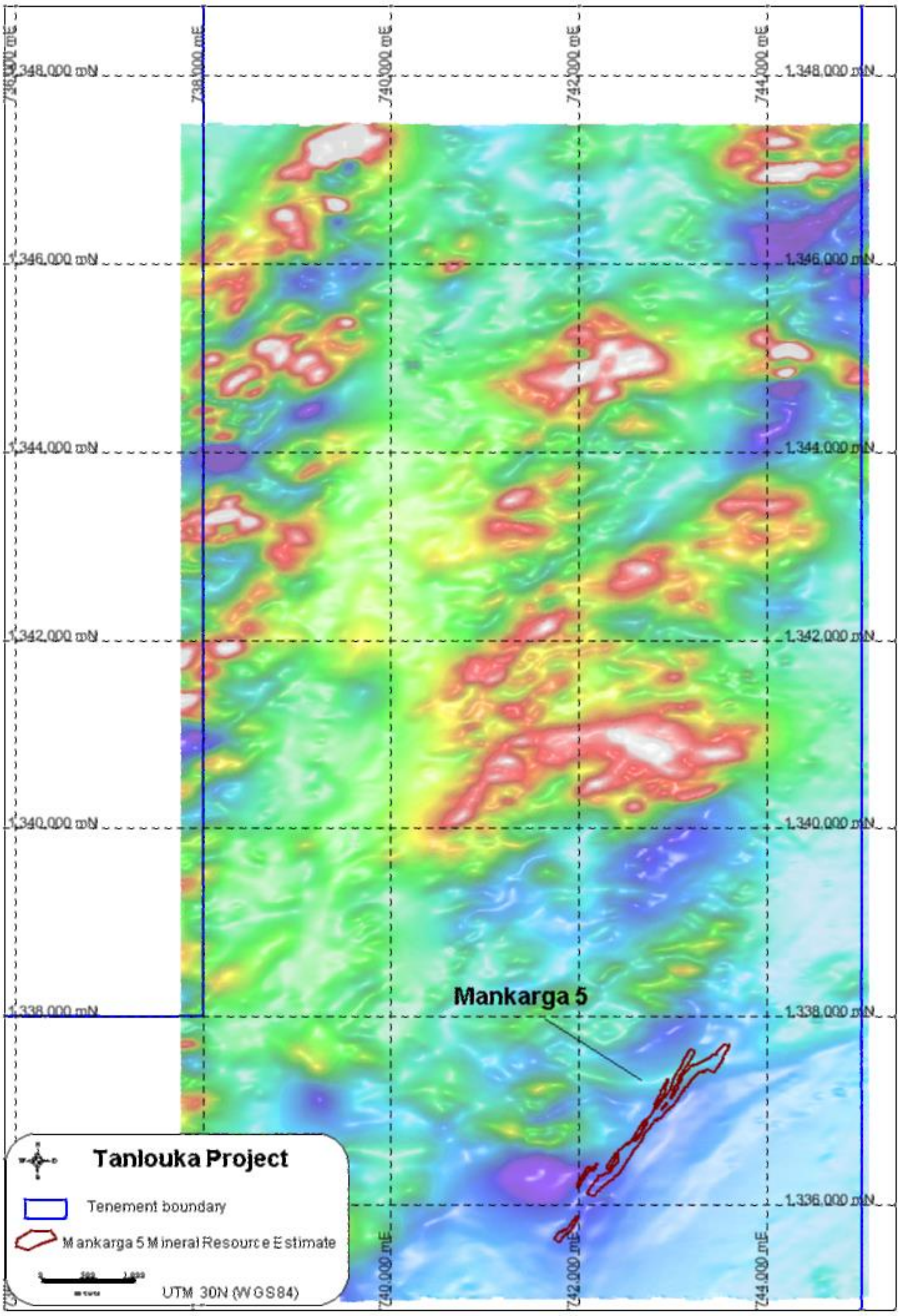
It should be noted that due to proximity to the equator, the EM-VLF data was not very useful and thus only the magnetics and radiometrics were used. Both data sets show the presence of northeast-southwest trending lithostructural domains. Most of the Tanlouka permit is underlain by a linear magnetic fabric, in an area thought initially to contain amphibolites. The far southeast corner of Tanlouka is underlain by a separate domain, characterised by a low magnetic and a very high radiometric signature, in an area thought to be dominantly post-tectonic K-granites and granitic gneisses.

In March to April, 2008, SAGAX carried out a ground geophysical survey for induced polarisation (IP) and magnetics (mag) for the area around the Mankarga 5 area. Survey specs were as follows: 10 x 300m profiles with a station reading conducted every 25m in an east-west direction. Each profile was 200m apart in a north-south direction. Three main resistivity domains corresponding to the main geological units were interpreted as a highly conductive zone in the south-western part of the grid (correlated with volcano-sedimentary schists), a highly resistive zone in the southeastern portion of the grid thought to be related to granitic rocks, and intermediate resistivity's in central part of the grid thought to be related to basaltic and amphibolitic formations.

In February 2011, UTS Aeroquest was contracted to carry out a low level magnetic airborne survey. The survey specifications were as follows: 1,994 line km on 50m line (N-S) with 500m spaced tie line (E-W).

A map showing the total gradient of the total magnetic intensity over the Tanlouka permit is shown in Figure 6.1.

Figure 6.1 Tanlouka Total Gradient of Total Magnetic Intensity (TMI)



6.3 **Soil Geochemistry**

Regional soil geochemistry was initiated in the spring of 1996 which covered Tanlouka at 500m centres in a triangular grid. Assay results for samples were received for Au, Cu, Pb and Zn, and highlighted two gold anomalies on the portion of Bomboré now covered by the Tanlouka permit.

A total of 765 samples at 500m (line spacing) by 100m spacing (sample spacing along the lines) in the southeast corner of the original Bomboré permit had been completed by December of

1996 (Guérard, 1997). The anomalous gold values previously noted at the limit of the Mankarga sub-domain, were confirmed to be associated with the western contact of the Mankarga sub-domain (Guérard, 1997). The Mankarga and Koloba-Samba gold-in-soil geochemistry zones were defined over areas of 2km by 5km (Guérard, 1997).

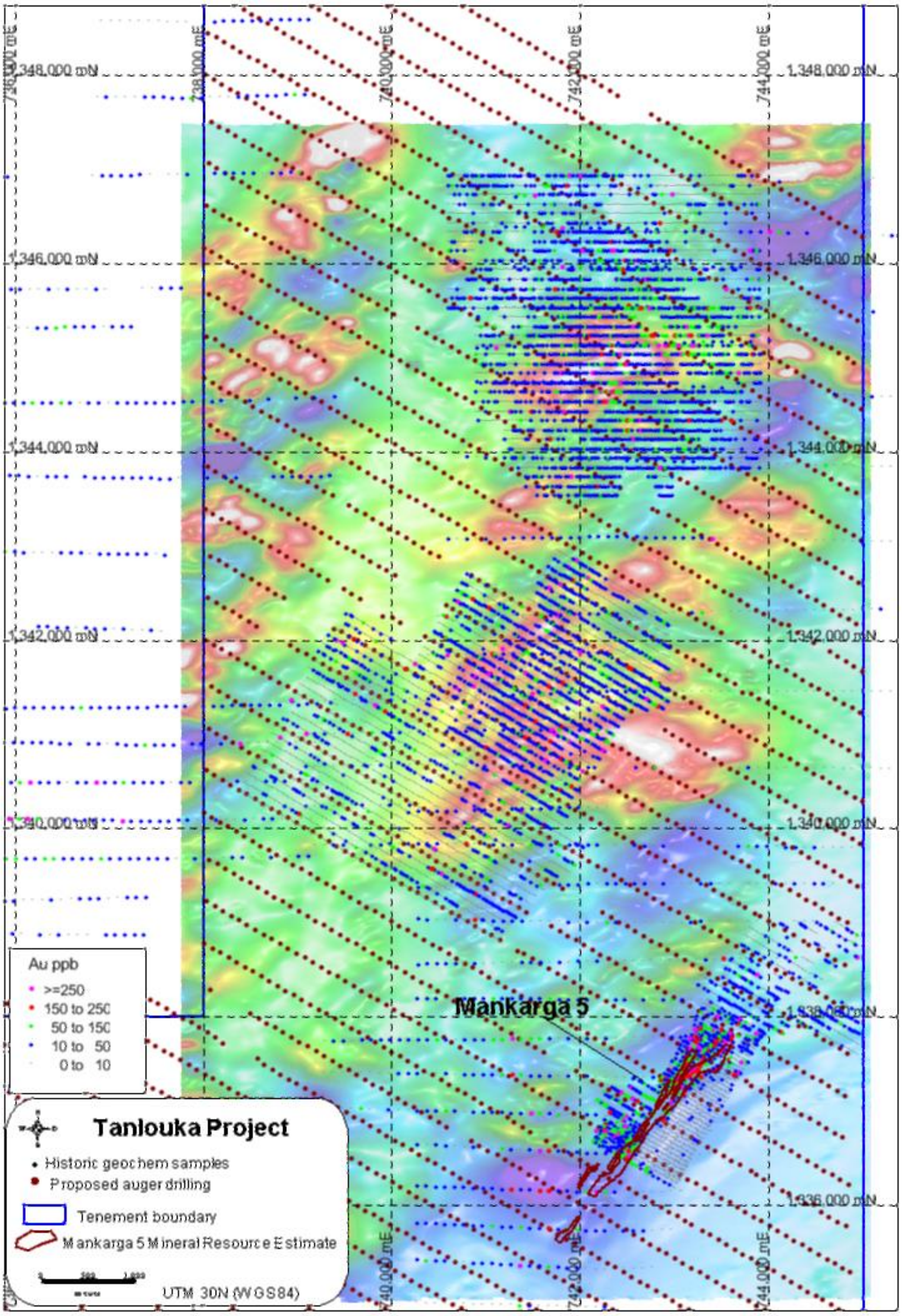
In 2000 three separate grids, called Mankarga East, West and South were sampled in more detail (Learn, 2000), with only the Mankarga East grid being entirely within the boundaries of the Tanlouka permit. Over the 3km long southern part of this (eastern) grid, a continuous soil anomaly > 3km long by 200 to 300m wide was defined. An oblique north-easterly trend, with anomalous values, penetrates into the granite terrain to the east, suggesting the presence of an oblique structure, possibly a splay or fold, in association with the principal deformation zone.

In early 2010, Channel conducted a detailed soil geochemistry program on and around the Mankarga 5 area. A total of 1,321 soil samples and several termite mound samples were collected. Two large soil grids were established in the central (Manesse grid) and northern (Tanwaka grid) portions of the Tanlouka Permit. Targets near the centres of each of these grids had been identified in a reconnaissance soil sampling program completed in 1998.

The central area of Tanlouka is covered by the Manesse grid, and has been covered by some 4,800 samples, whereas the Tanwaka grid in the northern part of the property has been covered by 3,754 soil samples.

West African Resources is in the process of auger drilling the entire Tanlouka permit on a 400m by 100m grid to better delineate current mineralised areas and to verify some of the historic anomalies. Auger anomalies will be in filled with 200m by 50m and 100m by 25m auger pattern drilling which will supersede all historic soil sampling and geochemistry. A summary of the historic soil sampling and the proposed WAF auger survey is shown in Figure 6.1.

Figure 6.2 Historic and proposed Auger sampling overlying TMI Magnetic image



6.4 Petrographical Studies

Three petrographic studies were completed between November 2010 and August 2011. The first one was based on nine rock samples collected by Channel in and around the artisanal workings. The suite of rocks included four samples of variably altered intrusive rocks, four samples of variably altered and deformed sediments and one as a rhyodacite. The initial identification of the samples by Channel was similar to the results completed by Geoconsult. Gold was identified in one of the altered intrusive rocks and the same sample showed evidence of silicification.

The second study was completed in March 2011 on thin sections made from RC chip samples. Of the 12 RC samples submitted, seven were from Mankarga 5 and five were from Mankarga 1. Geoconsult completed the requested analysis, but remarked that due to the small size of the chips provided, the analysis may not be entirely representative of the parent rock. This suite of rocks was divided into four different lithological units; intermediate intrusives, feldspar porphyry, schists and extensively altered porphyritic volcanic rock. Similar to the first study, the initial identification of the samples by Channel was more or less confirmed by Geoconsult. Silicification was the primary alteration observed in the schists and shearing was the prominent deformation observed. Sulphide mineralisation was primarily pyrrhotite with minor pyrite and arsenopyrite.

The third study was completed in August 2011 on twelve drill core samples from DDH Tan11-DD-02. The mineralogy and texture of the rocks suggest that they are fine-grained, variably silicified and metamorphosed argillaceous and arenaceous sediments, except for one sample of quartz diorite. This somewhat confirms the initial sample identification by Channel that these samples are primarily sedimentary in origin, but not wackes as identified by Channel. Metamorphic grade is middle greenschist facies.

6.5 Historic Drilling

Since 2000 various drilling programmes have been completed on the Tanlouka permit. RAB drilling was undertaken over the soil anomalies at Tanlouka in April 2000. In June 2003 an RC drilling campaign by Orezone drilled five RC holes. Drilling programmes did not resume until 2010 with Channel completing wide-spaced drilling at Mankarga 1, Mankarga 2, Mankarga 3, Mankarga 4 and Mankarga 5. Follow-up drilling commenced in November 2010 through to April 2011 comprising 81 RC drill holes on Mankarga 1, Mankarga 1 Nth, Mankarga 2 and the bulk of the drilling on Mankarga 5. Diamond core drilling commenced in July 2011 on the Mankarga 5 deposit and completed in February 2012.

A table compiling all drilling statistics by type and year prior to the acquisition of the Tanlouka permit by WAF is presented as Table 6.1 below. A summary of significant intercepts and drill hole location is presented in Table 6.2 and Figure 6.3 below.

Table 6.1 Tanlouka Project - RAB, Aircore, RC and Diamond Drilling Statistics								
	2000							
Permit	**RAB**		**AC**		**RC**		**Diamond**	
	Holes	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**
Tanlouka	138	3282						
Total	138	3282						
	2003							
Permit	**RAB**		**AC**		**RC**		**Diamond**	
	Holes	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**
Tanlouka					5	390		
Total					5	390		
	2010							
Permit	**RAB**		**AC**		**RC**		**Diamond**	
	Holes	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**
Tanlouka					23	3444.7		
Total					23	3444.7		
	2011							
Permit	**RAB**		**AC**		**RC**		**Diamond**	
	Holes	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**
Tanlouka					69	7959.5	61	13378.96
Total					69	7959.5	61	13378.96
	2012							
Permit	**RAB**		**AC**		**RC**		**Diamond**	
	Holes	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**	**Holes**	**Metres**
Tanlouka							22	4161.5
Total							22	4161.5

Table 6.2 Significant Results from Historic Drilling Programs											
Prospect	**Hole Id**	**From**	**To**	**Interval**	**Au g/t**	**Dip**	**Azimuth**	**Depth**	**Easting**	**Northing**	**RL**
Mankarga 1	TAN10-RC-10	56.0	72.0	16.0	4.80	-50	180	104	741579	1336954	325
Mankarga 1	TAN10-RC-10	78.0	88.0	10.0	3.86						
Mankarga 1	TAN10-RC-12	58.0	66.0	8.0	31.78	-50	210	186	741572	1337002	326
Mankarga 1	TAN10-RC-23	58.0	60.0	2.0	25.00	-50	225	192	741421	1337595	329
Mankarga 1	TAN11-RC-52	46.0	50.0	4.0	16.95	-50	230	150	741438	1337165	328
Mankarga 1	TAN12-DD-72	68.0	69.5	1.5	22.63	-50	210	152	741574	1337008	326
Mankarga 1	TAN12-DD-73	56.0	69.5	13.5	10.11	-50	180	152	741580	1336955	325
Mankarga 1	TAN12-DD-73	80.0	93.0	13.0	1.56						
Mankarga 1	TAN12-DD-74	64.2	68.0	3.8	3.25	-50	180	146	741606	1336958	326
Mankarga 5	TAN10-RC-07	52.0	58.0	6.0	2.49	-50	300	100	742712	1336745	316
Mankarga 5	TAN10-RC-07	66.0	78.0	12.0	2.85						
Mankarga 5	TAN10-RC-08	62.0	78.0	16.0	2.15	-50	300	141.5	742876	1336943	312
Mankarga 5	TAN10-RC-08	88.0	108.0	20.0	1.40						
Mankarga 5	TAN10-RC-17	134.0	148.0	14.0	1.05	-50	300	199.2	742921	1336918	314
Mankarga 5	TAN10-RC-18	60.0	66.0	6.0	4.69	-50	300	200	742811	1336866	314
Mankarga 5	TAN10-RC-20	88.0	96.0	8.0	1.28	-50	300	200	742928	1337033	312
Mankarga 5	TAN10-RC-20	166.0	172.0	6.0	6.57						
Mankarga 5	TAN10-RC-21	32.0	46.0	14.0	1.15	-50	300	186	742983	1337113	312
Mankarga 5	TAN10-RC-21	94.0	104.0	10.0	1.53						
Mankarga 5	TAN11-DD-01	76.0	95.9	19.9	0.90	-50	120	263	742904	1337156	314
Mankarga 5	TAN11-DD-01	110.0	140.0	30.0	1.29						
Mankarga 5	TAN11-DD-01	146.0	168.0	22.0	1.45						
Mankarga 5	TAN11-DD-02	34.0	61.1	27.1	1.97	-50	300	256	743043	1337076	312
Mankarga 5	TAN11-DD-02	65.8	90.0	24.2	1.93						
Mankarga 5	TAN11-DD-02	219.4	228.0	8.6	1.32						
Mankarga 5	TAN11-DD-03	9.0	19.5	10.5	1.09	-50	120	201	742963	1337235	314
Mankarga 5	TAN11-DD-03	36.0	40.5	4.5	5.81						
Mankarga 5	TAN11-DD-03	60.0	61.5	1.5	11.60						

Table 6.2 Significant Results from Historic Drilling Programs											
Prospect	**Hole Id**	**From**	**To**	**Interval**	**Au g/t**	**Dip**	**Azimuth**	**Depth**	**Easting**	**Northing**	**RL**
Mankarga 5	TAN11-DD-03	152.2	168.0	15.8	1.70						
Mankarga 5	TAN11-DD-04	123.0	136.0	13.0	1.17	-50	300	250	743194	1337223	312
Mankarga 5	TAN11-DD-04	161.2	166.5	5.3	2.24						
Mankarga 5	TAN11-DD-04	184.9	186.0	1.1	24.60						
Mankarga 5	TAN11-DD-04	210.5	211.5	1.0	22.15						
Mankarga 5	TAN11-DD-05	12.0	19.5	7.5	2.08	-50	300	252	743030	1337197	312
Mankarga 5	TAN11-DD-05	202.5	207.0	4.5	8.86						
Mankarga 5	TAN11-DD-06	43.0	44.8	1.8	6.03	-50	120	148.5	743148	1337364	311
Mankarga 5	TAN11-DD-06	49.2	72.0	22.8	0.82						
Mankarga 5	TAN11-DD-07	153.0	163.5	10.5	1.12	-50	120	192	743023	1337321	311
Mankarga 5	TAN11-DD-08	168.0	180.0	12.0	0.89	-50	120	249	743064	1337410	313
Mankarga 5	TAN11-DD-08	184.5	190.5	6.0	1.72						
Mankarga 5	TAN11-DD-09	92.0	104.0	12.0	2.51	-50	120	203	743106	1337387	312
Mankarga 5	TAN11-DD-09	114.5	135.5	21.0	0.84						
Mankarga 5	TAN11-DD-10	222.9	248.0	25.1	1.89	-50	120	301	743020	1337434	314
Mankarga 5	TAN11-DD-11	41.0	51.5	10.5	1.16	-50	120	272	743201	1337449	311
Mankarga 5	TAN11-DD-11	54.5	63.5	9.0	1.58						
Mankarga 5	TAN11-DD-11	87.9	101.8	13.9	1.61						
Mankarga 5	TAN11-DD-12	97.3	110.0	12.7	1.21	-50	120	305	743148	1337473	311
Mankarga 5	TAN11-DD-12	113.0	126.5	13.5	1.07						
Mankarga 5	TAN11-DD-12	167.0	176.0	9.0	1.16						
Mankarga 5	TAN11-DD-13	32.0	42.5	10.5	1.42	-50	120	250	743251	1337533	311
Mankarga 5	TAN11-DD-15	9.5	12.5	3.0	6.19	-50	120	155	743336	1337486	308
Mankarga 5	TAN11-DD-17	68.0	86.0	18.0	5.01	-50	300	202	742222	1336116	318
Mankarga 5	TAN11-DD-17	89.0	116.5	27.5	1.14						
Mankarga 5	TAN11-DD-17	122.5	127.0	4.5	2.96						
Mankarga 5	TAN11-DD-18	119.0	128.0	9.0	1.63	-50	120	196	743382	1337572	309
Mankarga 5	TAN11-DD-19	71.0	89.0	18.0	1.07	-50	300	203	742880	1336940	312
Mankarga 5	TAN11-DD-19	96.5	125.0	28.5	1.34						
Mankarga 5	TAN11-DD-20	120.5	144.5	24.0	3.23	-50	120	236	742094	1336195	319
Mankarga 5	TAN11-DD-21	68.0	87.5	19.5	1.45	-50	120	272	742781	1336998	315

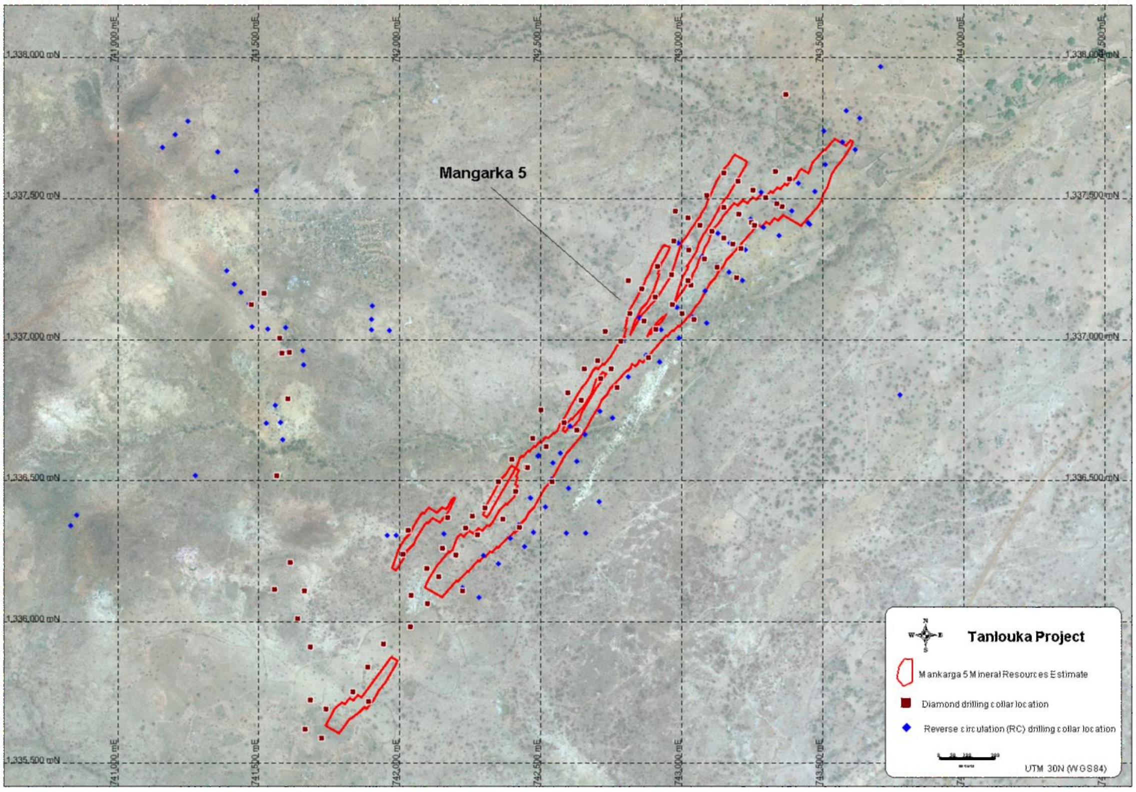
Table 6.2 Significant Results from Historic Drilling Programs

Prospect	Hole Id	From	To	Interval	Au g/t	Dip	Azimuth	Depth	Easting	Northing	RL
Mankarga 5	TAN11-DD-21	99.9	108.5	8.6	5.85						
Mankarga 5	TAN11-DD-22	65.0	81.2	16.2	2.25	-50	120	170	742365	1336369	319
Mankarga 5	TAN11-DD-23	162.5	170.0	7.5	2.62	-50	120	302	742815	1337097	316
Mankarga 5	TAN11-DD-23	195.5	207.5	12.0	1.01						
Mankarga 5	TAN11-DD-24	113.0	116.0	3.0	3.79	-50	120	260	742302	1336408	319
Mankarga 5	TAN11-DD-25	39.0	66.0	27.0	1.58	-65	120	201	742908	1337042	313
Mankarga 5	TAN11-DD-28	21.5	23.0	1.5	14.40	-50	120	323	742808	1337212	316
Mankarga 5	TAN11-DD-28	209.0	215.0	6.0	2.35						
Mankarga 5	TAN11-DD-28	285.5	303.5	18.0	0.91						
Mankarga 5	TAN11-DD-31	219.5	234.5	15.0	1.20	-50	120	272	742913	1337263	313
Mankarga 5	TAN11-DD-32	3.5	12.5	9.0	1.74	-50	120	173.7	741889	1335724	319
Mankarga 5	TAN11-DD-33	212.0	234.5	22.5	2.20	-50	120	263	742971	1337353	314
Mankarga 5	TAN11-DD-34	176.5	190.0	13.5	0.99	-50	120	321.5	742726	1337032	316
Mankarga 5	TAN11-DD-36	23.5	34.0	10.5	1.09	-50	120	205	742710	1336867	315
Mankarga 5	TAN11-DD-37	117.5	131.0	13.5	1.06	-50	120	223	742699	1336930	316
Mankarga 5	TAN11-DD-37	137.0	156.5	19.5	1.30						
Mankarga 5	TAN11-DD-38	49.0	52.0	3.0	3.34	-50	120	152	742749	1336900	315
Mankarga 5	TAN11-DD-39	57.5	80.0	22.5	1.57	-50	120	155	742964	1337128	313
Mankarga 5	TAN11-DD-39	83.0	95.0	12.0	1.64						
Mankarga 5	TAN11-DD-40	169.0	178.0	9.0	5.70	-50	120	242.2	742594	1336816	317
Mankarga 5	TAN11-DD-41	74.0	96.5	22.5	1.54	-50	120	152	743020	1337214	312
Mankarga 5	TAN11-DD-42	69.5	89.0	19.5	1.31	-50	120	168	743078	1337289	310
Mankarga 5	TAN11-DD-43	73.5	84.0	10.5	1.50	-50	120	159	742582	1336710	318
Mankarga 5	TAN11-DD-43	99.0	111.0	12.0	2.43						
Mankarga 5	TAN11-DD-45	0.0	19.5	19.5	1.52	-50	120	139.5	742625	1336685	317
Mankarga 5	TAN11-DD-47	5.0	33.5	28.5	3.41	-50	120	169	742865	1337071	314
Mankarga 5	TAN11-DD-47	88.0	106.0	18.0	1.67						
Mankarga 5	TAN11-DD-47	110.5	133.0	22.5	0.93						
Mankarga 5	TAN11-DD-49	272.0	300.0	28.0	1.50	-50	120	357	742977	1337459	315
Mankarga 5	TAN11-DD-50	92.0	99.5	7.5	2.72	-50	120	183.5	742409	1336467	319
Mankarga 5	TAN11-DD-52	172.5	196.5	24.0	1.26	-50	120	255	742257	1336380	320

Table 6.2 Significant Results from Historic Drilling Programs											
Prospect	**Hole Id**	**From**	**To**	**Interval**	**Au g/t**	**Dip**	**Azimuth**	**Depth**	**Easting**	**Northing**	**RL**
Mankarga 5	TAN11-DD-57	175.5	185.6	10.1	1.32	-50	120	297	741682	1335728	322
Mankarga 5	TAN11-RC-31	72.0	84.0	12.0	0.86	-50	300	86	743167	1337236	312
Mankarga 5	TAN11-RC-32	70.0	76.0	6.0	2.57	-50	300	96	743123	1337261	311
Mankarga 5	TAN11-RC-37	36.0	54.0	18.0	1.27	-50	300	120	742658	1336663	318
Mankarga 5	TAN11-RC-39	28.0	78.0	50.0	2.18	-50	300	149.5	743039	1337078	312
Mankarga 5	TAN11-RC-39	82.0	100.0	18.0	1.56						
Mankarga 5	TAN11-RC-39	104.0	112.0	8.0	1.33						
Mankarga 5	TAN11-RC-40	64.0	114.0	50.0	1.49	-50	300	116	743226	1337316	310
Mankarga 5	TAN11-RC-41	52.0	64.0	12.0	1.21	-50	300	96	743289	1337397	308
Mankarga 5	TAN11-RC-42	90.0	118.0	28.0	1.30	-50	300	158	742990	1337003	313
Mankarga 5	TAN11-RC-56	118.0	134.0	16.0	5.23	-50	300	134	742351	1336206	318
Mankarga 5	TAN11-RC-57	26.0	32.0	6.0	6.19	-50	300	120	742392	1336294	319
Mankarga 5	TAN11-RC-57	50.0	58.0	8.0	1.45						
Mankarga 5	TAN11-RC-57	102.0	106.0	4.0	13.37						
Mankarga 5	TAN11-RC-58	0.0	38.0	38.0	3.53	-50	300	124	742423	1336343	319
Mankarga 5	TAN11-RC-61	2.0	18.0	16.0	1.58	-50	300	90	743171	1337341	310
Mankarga 5	TAN11-RC-62	12.0	54.0	42.0	1.48	-50	300	90	743245	1337424	310
Mankarga 5	TAN11-RC-66	6.0	24.0	18.0	1.62	-50	300	132	743390	1337453	308
Mankarga 5	TAN11-RC-66	40.0	46.0	6.0	5.57						
Mankarga 5	TAN11-RC-67	46.0	54.0	8.0	1.55	-50	300	126	743472	1337522	308
Mankarga 5	TAN11-RC-69	4.0	32.0	28.0	1.39	-50	300	60	743084	1337171	311
Mankarga 5	TAN11-RC-70	150.0	178.0	28.0	1.47	-50	300	204	743089	1337058	313
Mankarga 5	TAN11-RC-70	182.0	196.0	14.0	0.78						
Mankarga 5	TAN11-RC-71	14.0	38.0	24.0	1.22	-50	300	138	742297	1336235	319
Mankarga 5	TAN11-RC-71	56.0	58.0	2.0	15.55						
Mankarga 5	TAN11-RC-72	54.0	70.0	16.0	1.89	-50	300	126	742225	1336121	318
Mankarga 5	TAN11-RC-72	74.0	92.0	18.0	1.68						
Mankarga 5	TAN11-RC-73	122.0	142.0	20.0	5.76	-50	300	180	742443	1336265	318
Mankarga 5	TAN11-RC-74	94.0	106.0	12.0	1.37	-50	300	180	742474	1336317	318
Mankarga 5	TAN11-RC-74	110.0	128.0	18.0	1.33						
Mankarga 5	TAN11-RC-87	10.0	28.0	18.0	1.62	-50	300	156	742538	1336505	319

Table 6.2 Significant Results from Historic Drilling Programs											
Prospect	**Hole Id**	**From**	**To**	**Interval**	**Au g/t**	**Dip**	**Azimuth**	**Depth**	**Easting**	**Northing**	**RL**
Mankarga 5	TAN11-RC-87	70.0	82.0	12.0	0.94						
Mankarga 5	TAN11-RC-87	90.0	98.0	8.0	2.84						
Mankarga 5	TAN12-DD-62	48.5	54.5	6.0	4.43	-50	120	251	743368	1337873	308
Mankarga 5	TAN12-DD-65	143.5	163.0	19.5	1.66	-50	120	275	742150	1336265	319
Mankarga 5	TAN12-DD-65	166.0	167.5	1.5	13.10						
Mankarga 5	TAN12-DD-66	91.0	98.5	7.5	2.07	-50	120	202	742197	1336242	319
Mankarga 5	TAN12-DD-67	142.5	144.0	1.5	8.66	-50	120	273	742232	1336337	320
Mankarga 5	TAN12-DD-67	150.0	174.0	24.0	4.86						
Mankarga 5	TAN12-DD-68	85.5	106.5	21.0	2.91	-50	120	201	742275	1336314	319
Mankarga 5	TAN12-DD-69	21.0	27.0	6.0	2.93	-50	120	180	742518	1336627	319
Mankarga 5	TAN12-DD-69	93.0	103.5	10.5	1.05						
Mankarga 5	TAN12-DD-70	48.0	58.5	10.5	1.29	-50	120	180	742642	1336791	316
Mankarga 5	TAN12-DD-70	76.5	85.5	9.0	1.41						
Mankarga 5	TAN12-DD-71	166.5	172.5	6.0	3.57	-50	120	252	742653	1336900	313
Mankarga 5	TAN12-DD-71	175.5	178.5	3.0	3.68						

Figure 6.3 Tanlouka Permit RC and Diamond Drilling



7. GEOLOGICAL SETTING AND MINERALISATION

7.1 Regional Geology

The gold deposits of West Africa largely lie within the Proterozoic domain of the Man Shield, the southernmost subdivision of the West African (or Guinean) Craton. Successions comprising the Man Shield overlie the Archaean Liberian Craton (Figure 7.1). The principal gold producing areas are associated with the coeval Lower Proterozoic systems of the Birimian (2.17-2.18 billion years) comprising metavolcanic (arc) and metasedimentary (basin) rocks, along with the marginally younger, unconformably overlying rocks of the Tarkwaian epiclastic system.

The Precambrian Birimian System of West Africa can be broadly subdivided into the Lower Birimian phyllites, tuffs and greywackes; and the Upper Birimian basaltic to andesitic lavas and volcanoclastics. These subdivisions are largely believed to be coeval and have been deformed and regionally metamorphosed to a range from lower greenschist to lower amphibolite facies grade (Bossière *et al*., 1996).

The Birimian System has been intruded by two distinctive granitoid types. The larger basin-type granitoids (and gneisses) are muscovite and/or biotite-rich, and distinctly foliated and deformed, providing a pre-tectonic appearance. The smaller belt-type (arc related) granitoids on the other hand, are hornblende-rich, lack the characteristic foliation of the former, and are generally interpreted to be syn or post-tectonic.

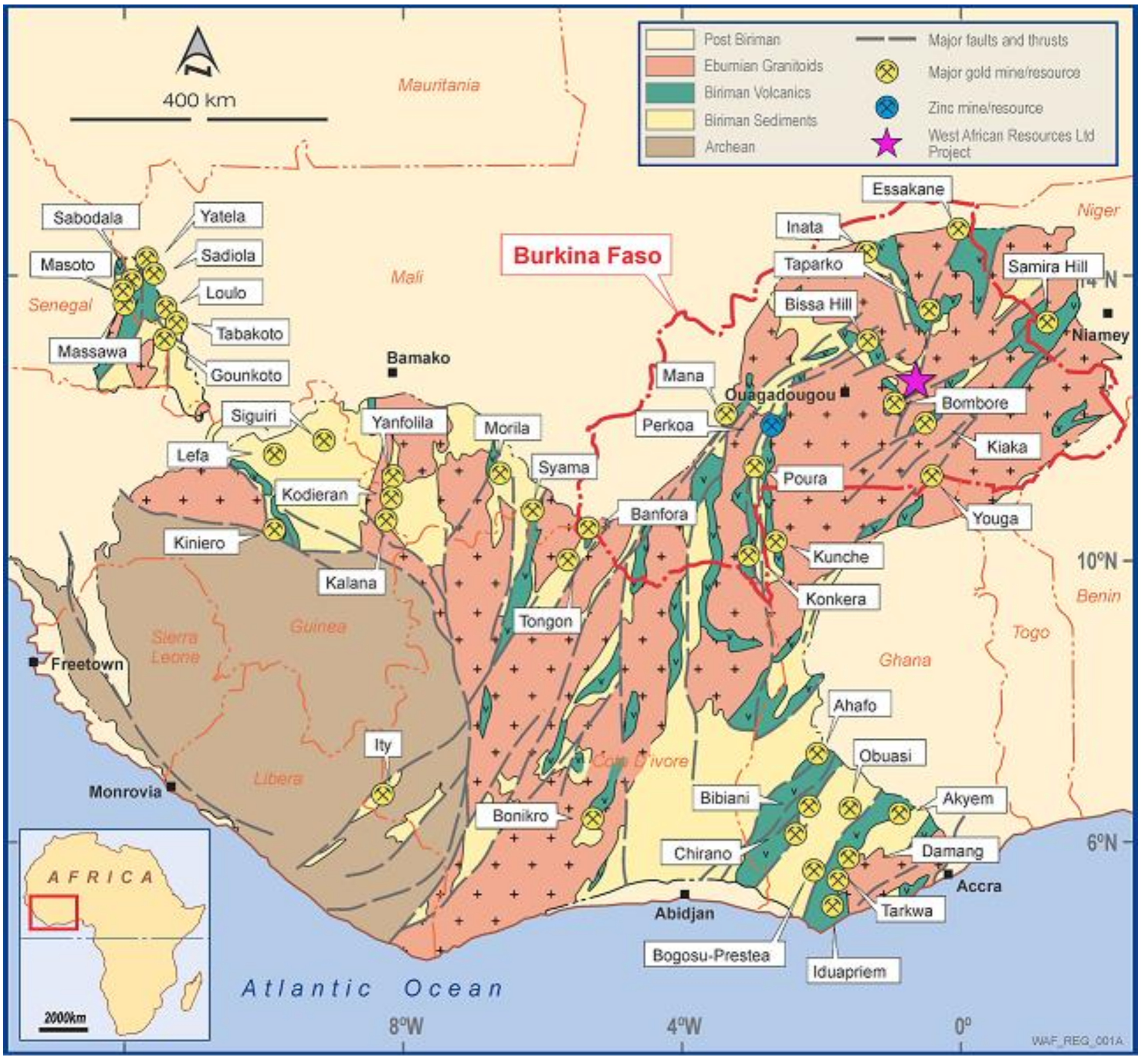
The younger Proterozoic Tarkwaian sediments consist of a thick series of arenaceous, and to a lesser extent argillaceous sediments, believed to be derived from erosion of the Birimian.

The Birimian belt-basin developed as oceanic plateaus or island arcs accreted (~2.1 Ga) to Archaean continental crust (Abouchami *et al*., 1990; Leube *et al*., 1990; Boher *et al*., 1992; Sylvester and Attoh, 1992; Feybesse and Milesi, 1994; Hirdes *et al*., 1996; Hirdes and Davis, 1998; Béziat *et al*., 2000), was followed at around 2.1 billion years by the Eburnean tectono-thermal event (Leube *et al*., 1990; Liégeois *et al*., 1991), a single-stage progressive southeast - northwest compressional and regional metamorphic episode, expressed by foliation and shear development oriented between 025 and 050. Tight isoclinal folding (foliation regionally oriented north northeast – south southwest), is regionally well developed in the argillaceous facies. Multiple episodes of strike-slip and over- thrust faulting from the northwest (and perhaps the southeast in part), are more apparent in the arc-related Birimian volcanics and Tarkwaian Series.

The spatial distribution of gold mineralisation in West Africa is closely governed by north to northeast trending belts of metavolcanic rocks, ranging from 15km to 40km in width, comprising the Upper Birimian. Almost without exception, the major gold deposits lie at, or close to the margins of the belts in close proximity to the strongly deformed contacts between the Upper and Lower Birimian sequences.

Gold mineralisation throughout the majority of the Birimian of West Africa is found in three principal settings. The most significant of these deposits are closely related to major structures at the Upper and Lower Birimian contact (Griffis *et al*. 2002). Deposits comprise numerous styles, including quartz reefs hosted within frequently carbonaceous phyllites, and greywackes associated with major semi-conformable shear structures and subsidiary oblique faults. Lower grade mineralisation may also be present as disseminations or associated with sheeted quartz veining within tuffs, greywackes and basic dykes situated in close proximity to major structures.

Figure 7.1 Gold Deposits of West Africa on Regional Geology



The second style of gold mineralisation is that associated with sheeted vein swarms and stockwork zones within granitoids. These deposits are typically lower grade than reef style mineralisation and appear to be confined to the smaller belt-type or Dixcove Suite granitoids and their regional equivalents.

Banket deposits represent the third significant style of mineralisation, hosted by quartz pebble conglomerates towards the base of the Tarkwaian Series. The gold is thought to be of detrital origin, derived from erosion of the Birimian Series upon which the Banket Group lie.

The geology of Burkina Faso can be subdivided into three major litho-tectonic domains: a Paleo-Proterozoic basement underlying most of the country; a Neo- Proterozoic sedimentary cover developed along the western, northern and southeastern portions of the country; and a Cenozoic mobile belt forming small inliers in the north-western and extreme eastern regions of the country.

The Paleo-Proterozoic basement comprises Birimian volcano-sedimentary and plutonic rock intruded by large batholiths of Eburnean granitoid. The overall structure of this basement is defined by two major north-northeast-trending sinistral shear zones sub-dividing the country into three domains: an eastern domain cut by a series of northeast-trending structures, a central domain characterized by arcuate structural patterns, and a western domain hosting north to northeast-trending structural features.

The Tanlouka project occurs within a strongly arcuate volcano-sedimentary northeast-trending belt in the central domain that is bounded to the east by the Tiébélé-Dori-Markoye Fault, one of the two major structures subdividing Burkina Faso into three lithotectonic domains.

The Tanlouka project is located near the southern extension of the Boulsa gold project, which straddles some 70km strike length of the lightly explored Manga-Sebba greenstone belt. The belt bifurcates and trends northeast and east-northeast respectively from southern-central Burkina Faso into Niger over some 450km. The central portion of the project is bisected by the Taparko Fault, which is a major crustal-scale feature that trends over some 500km from northern Ghana to northern Burkina Faso; and shear zones of this type have acted as one of the main conduits of gold-bearing fluid migration in the region. A number of significant deposits are associated with the Taparko Fault including Taparko-Bouroum and Essakane.

Lithologies comprise volcano-plutonic bodies including amphibolised basalts with amphiboloschists, andesites and basalts, rhyolites and rhyodacites, brecciated tuffs, and gabbroic bodies including pyroxenite and serpentinite. These volcano-plutonic bodies are associated with belts of metasedimentary rocks.

Volcano-sedimentary rocks dominate the western flank and central portion of the project area, with strike varying from north-northeast to northeast. The volcano-sedimentary sequences are separated by large elongate granitoids and are locally intruded by granodiorites, tonalities, quartz diorite porphyries, and late east-southeast trending dolerite dykes of varying ages. These granitoids are followed by the emplacement of sub-alkaline leucogranitic intrusions and pegmatite, microgranite and quartz veins.

7.2 Tanlouka Permit Geology

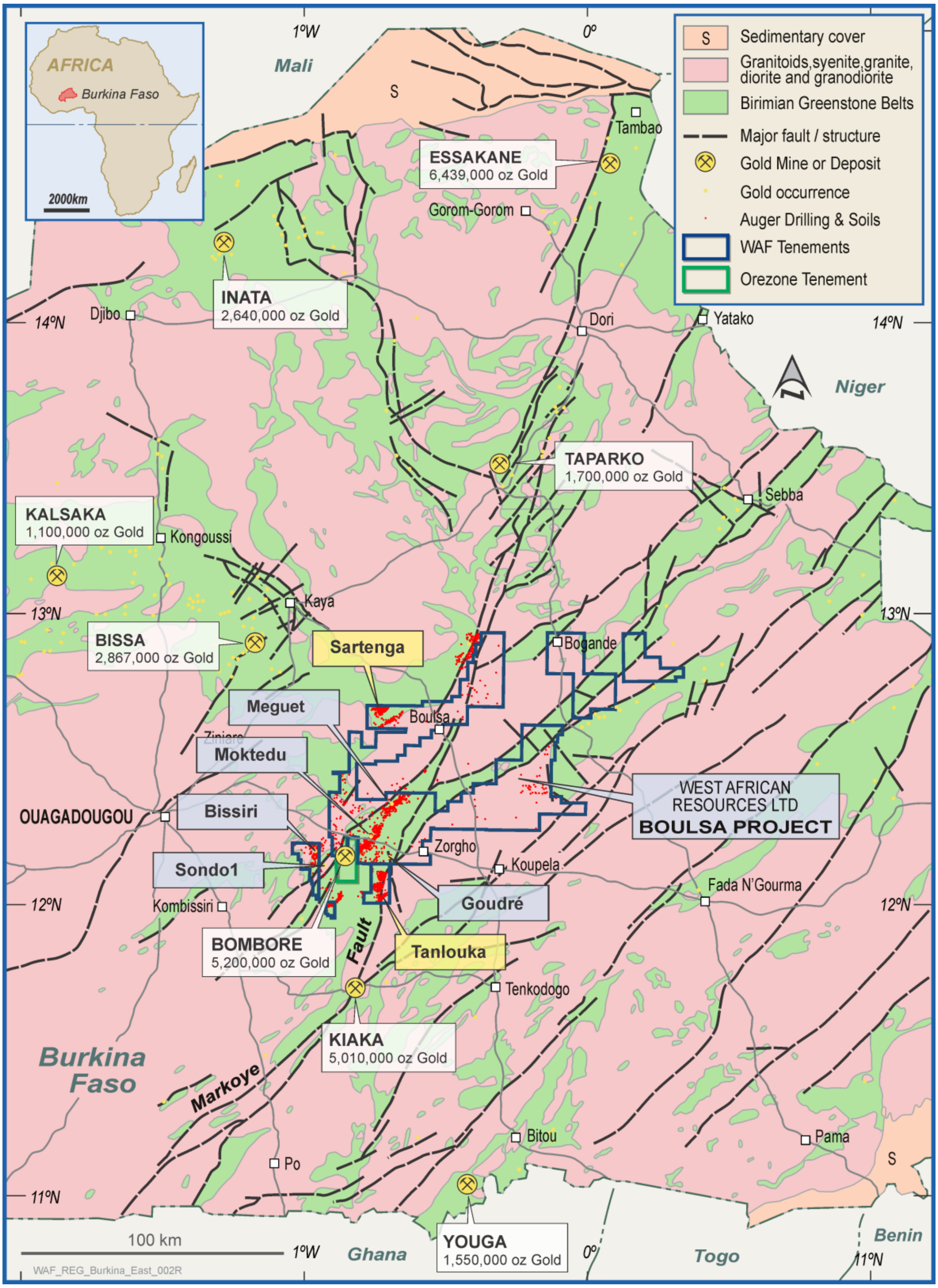
Tanlouka is located within a strongly arcuate volcano-sedimentary northeast-trending belt in the central domain that is bounded to the east by the Tiébélé-Dori-Markoye Fault (Markoye Fault), one of the two major structures subdividing Burkina Faso into three litho-tectonic domains (Figure 7.2).

The geology of the Tanlouka area is characterised by metasedimentary and volcanosedimenatry rocks, intruded by mafic, diorite and granodiorite intrusions. The sediments vary from a mafic to felsic composition.

The Mankarga 5 area is characterised by a sedimentary pile which is mostly composed of undifferentiated pelitic and psammitic metasediments as well as volcanosedimentary units. Psammite (Sps) and pelite (Spc) are consistently laminated and occasionally schistose. The sedimentary pile has subsequently been intruded by a granodiorite.

The granodiorite is occasionally porphyritic in texture, overprinted by shearing in places, and is generally parallel to sub-parallel with the main shear orientation. The lack of consistent shear textures throughout this unit could imply that it is pre-to syntectonic and that the strain associated with the shear event is partitioned over a broader area.

Figure 7.2 Regional Geological Map-Eastern Burkina Faso



A sedimentary schist (Sc) domain hosts the main mineralised zone, and can be distinguished from the broader metasediment package based on preferential silicification and quartz veining. It is also differentiated from shale by increased muscovite content (muscovite schist) and a weaker developed cleavage.

Gabbro has been identified in places, and appears to demarcate the onset of the footwall lithologies in that no mineralisation is apparent south east of this horizon, and hence can be used as an end marker for the broader low grade gold mineralisation halo.

The footwall lithologies appear more mafic in composition and are generally composed of intercalated shale/sedimentary schist (Ssh) bands and mafic schist (Msc). A low grade regional fine grained sedimentary metamorphic unit is apparent, and these lithologies are distinguished from Sc by its strong cleavage.

In a more regional context, the sedimentary pile appears *wedged* between regional granites and granodiorites.

A lithology present in the extremities of the broader mineralised halo domain is believed to be of magmatic origin displaying tectonic textures in drill core (mylonite / fault grinding). It is likely that this domain represents remnants of a stretched granodiorite within a fault zone, and displays as an occasional porphyritic unit with a fine groundmass.

Most of the Tanlouka permit is underlain by a linear magnetic fabric, in an area thought initially to contain amphibolites. The far southeast corner of Tanlouka is underlain by a separate domain, characterised by a low magnetic and a very high radiometric signature, in an area thought to be dominantly post-tectonic K-granites and granitic gneisses.

7.3 Alteration

The alteration mineralogy varies from chloritic to siliceous, albitic, calcitic and sericite-muscovite. The regional alteration is marked by chlorite, whereas sericite and silica are locally widespread in the sedimentary pile.

Sericite/muscovite alteration is associated with weathering and also shears, its intensity commonly decreasing with an increase in silicification overprint. Silicification appears shear-bound and is likely to be associated with gold mineralisation, and is intensively silicified in close proximity to the granodiorite. The onset of biotite alteration marks the footwall towards the southeast and is associated with the mafic schist domain beyond the gabbro intrusive.

Albite alteration appears associated with zones of intense silicification and hence mineralisation.

Graphite is apparent, and is commonly associated with breccia and fault zones, and appears to indicate the broader footwall and hangingwall contacts. It is likely that the graphite is residual and originated from remobilisation of carbon from the original sedimentary pile.

7.4 Mineralisation

In Burkina Faso, the majority of the known gold prospects and deposits occur in three northeast trending Birimian belts: the Hounde Greenstone Belt, the Boromo Greenstone Belt, and the Bouroum-Yalogo Greenstone Belt. The Bomboré and Tanlouka permits are located within the Bouroum-Yalogo Greenstone Belt. All of these belts are northerly extensions of auriferous belts in Ghana and Côte d'Ivoire. Huot *et al*. (1987) have recognised three different genetic types of gold occurrences in these belts:

- Syngenetic gold associated with manganese in carbonaceous schists and stratabound sulphides, exhalites, felsic tuffs, and pyritic cherts (e.g., Kiere)
- Structurally controlled gold vein deposits and gold-bearing shear zones with associated hydrothermal alteration minerals (e.g., Dossi, Bagassi, Poura, Koupela, Essakane and Aribinda)
- Gold in eluvial, placer, and paleo-placer deposits (e.g., Gambo, Seguenega)

The most important type of deposits in these greenstone belts are the shear hosted, multistage epigenetic vein deposits (Huot *et al*., 1987) which usually contain polymetallic sulphides and an assemblage of hydrothermal alteration minerals such as sericite, kaolinite, carbonate, silica, and chlorite. Most of these deposits occur in volcanic or volcano-sedimentary terrains, but a few small granitic stocks, intruded into volcanic piles, may contain structurally controlled gold-bearing veins as well.

These hydrothermal deposits are typically late orogenic deposits and exhibit a strong relationship with regional arrays of major shear zones. The gold mineralisation is frequently associated with a network of quartz veins containing subordinate amounts of carbonate, tourmaline, sulphides and native gold. In these deposits, the gold is typically free milling. Alternatively, the gold mineralisation can be also associated with disseminated sulphides in strongly deformed alteration zones.

The Markoye Fault is believed to be the main conduit for the gold mineralisation found on Tanlouka. Tanlouka is currently interpreted to host shear zone type quartz-vein gold deposits, similar to that found elsewhere in late Proterozoic Birimian terrains of West Africa.

Observed gold mineralisation at Mankarga 5 appears associated with quartz vein and veinlet arrays, silica, sulphide and carbonate-albite, tourmaline-biotite alteration. Gold is free and is mainly associated with minor pyrite, chalcopyrite and arsenopyrite disseminations and stringers. The geological and structural controls on the distribution of the gold mineralisation are not yet fully understood and will require additional studies.

The current mineralisation extends along strike for approximately 3km, approximately 100m across strike and approximately 300m in elevation.

7.5 Structure

Airborne geophysics data sets show the presence of northeast-southwest trending litho-structural domains. The Tanlouka project area displays a strong east-northeast trend, governed by the regionally tectonic strain in east Burkina Faso (Anderson, 2006 and Barnett, 2010). A number of interpreted shear zones and faults occur within the Tanlouka project area; the fault network can be subdivided both in terms of age and fault order (scale) (Morel and Hughes, 2014). A deformation history for the Mankarga prospects has largely been established from overprinting and geometric relationships in outcrop and from drill core, and comprises three events, D_1 to D_3, followed by brittle faulting (Morel and Hughes, 2014; Hughes, 2014).

The combined patterns of D_1-D_2 shear zones have produced a structural grain that trends NE-SW to ENE-WSW in the Tanlouka project area (Morel and Hughes, 2014; Davis, 2014). Pre-existing S_1 (only noted in the granodiorite to the north of the Mankarga Shear) has been progressively rotated and re-used by D_2 in the shear zone. This has resulted in formation of an intense S_1-S_2 foliation at the margins of the Mankarga Shear and total destruction of S1 in zones of highest D2 strain. The craton-scale MSZ intersects the south-eastern edge of the project area and is interpreted to have been reactivated as part of the D_1-D_2 shear zone system.

D_2 has been established as the most intense and complex event, comprising ductile structure formation, intense alteration, emplacement of igneous intrusions and the introduction of gold (Davis, 2014 and Hughes, 2014).

This history shows D_2 to have been a protracted, complex event comprising substantial fluid flow, structure formation and emplacement of gold. Mankarga 5 is hosted within the D2 Mankarga Shear, which has accommodated sinistral shearing (S_2) during regional transpression (Davis, 2014). On a prospect scale, D_2 structures strike N040 and dip 70-80 NW, which is concordant with most regional structural orientations in the Boulsa Project. Post

A number of dextral shear zones are developed across the Mankarga Shear and lie obliquely clockwise of the NE-SW strike of the Mankarga Shear. The oblique dextral structures are interpreted as developing coeval with sinistral D2 shearing in response to volume changes and necessity to compensate for the intense strain during transpression (Davis, 2014).

The dextral shears have been reactivated as brittle faults during D_3. D_3 manifests as chevron-style folds, crenulations and a commonly developed crenulation cleavage. Generally, post- D2 structures are evident and strike N060 dipping 70-80 NNW, and these appear reactivated later dislocating mineralisation in the NE and SW. Late structures (D_3 and/or D_4?) strike E-W (090) or N120-140 dipping N/NE and appear to be post-shear event fractures and faulting, and dislocate the mineralisation, the granodiorite, the gabbro and mafic schists.

Structural geological controls to gold show that mineralisation was deposited during D_2 in the Tanlouka area. Furthermore, the geometry of relatively higher grade mineralisation appears to define linear shoots parallel to F_2 folds of lithological layering and S_1 within overall S2-parallel envelopes. Flexures in the trend of D_2 structures, such as S_2 trend lines and D2 shears at major lithological boundaries (e.g. granodiorite-metasediment contacts), have also been important for focusing gold emplacement.

Observations from Tanwaka and Manesse are consistent with timing of gold deposition and the structural history of Mankarga.

8. DEPOSIT TYPES

Most West African gold deposits occur in the Lower Proterozoic part of the craton, in sedimentary and volcano-sedimentary formations, which have undergone multiphase deformation, a setting analogous to many other gold-producing Precambrian greenstone belts in other parts of the world. Of note when examining the gold deposits of the West African Craton, is the Proterozoic age, as opposed to the Archaean age of the Abitibi greenstone belt in Canada. The Proterozoic of West Africa lacks the extensive series of ultramafic intrusions and extrusive volcanics, which are characteristic of Archean belts around the world. It can be expected that the types of deposits that will be located in this region will be variations from those seen in the Archaean gold deposits of Canada.

These West African Lower Proterozoic greenstone belts are also capable of producing world class size gold deposits. The Obuasi Mine (AngloGold-Ashanti) in Ghana has been in continuous production since 1897 and has produced over 20 million ounces of gold. Other large deposits include Sadiola (8 million ounces) and Morila (5.9 million ounces) in Mali. West Africa has also had the fastest growth in gold production in the world over the past five years. Based on specific examples (in brackets), these deposits have been classified by Milesi *et al*. (1989) into the following empirical types:

- Type 1 Gold associated with sulphides in tourmalinised turbidites (Loulo, Mali).
- Type 2 Gold with disseminated sulphides and associated hydrothermal alteration in volcanic or plutonic rocks (Yaoure-Angovia, Côte d'Ivoire).
- Type 3 Gold-bearing paleo-placer quartz pebble conglomerates (Tarkwa, Ghana).
- Type 4 Gold-bearing arsenopyrite and quartz veins associated with regional structures in metasediments or dykes and sills (Obuasi, Ghana).
- Type 5 Native gold and polymetallic sulphides in quartz veins in shear zones usually exhibiting evidence of hydrothermal alteration (Poura, Burkina Faso).
- Type 6 Alluvial and eluvial placers mined by "orpailleurs" throughout the shield.
- Type 7 Nugget gold in laterite with no evident underlying primary mineralisation (Ity, Côte d'Ivoire). This deposit is located in the Archean Man Shield.

The distribution of gold in the Lower Proterozoic, as indicated by both production reserve figures and total number of deposits, is mainly concentrated in the Birimian Type I volcanic facies. Within these volcanics the most common gold deposit category, by far, is the shear zone sulphide-bearing quartz veins (Types 4 and 5 above) which includes the giant Obuasi deposit in Ghana and the Poura deposit in Burkina Faso.

Typically in gold deposits in tropical climates, including Burkina Faso, the weathering profile is deep and results in a saprolitic cover consisting of extensive surface oxidation of bedrock to a depth of up to hundreds of metres. Gold deposits frequently display a surface oxide zone, a transition zone and a deeper sulphide zone. Gold is often free milling in the oxide zone.

9. EXPLORATION

9.1 Introduction

Exploration activities on the Tanlouka permit have included geological mapping, rock and chip sampling, geophysical surveys, geochemical sampling and drilling, both reverse circulation and diamond core. From 1994 to 2012, all exploration activities have been completed by Channel personnel and their consultants. From early 2014 exploration work has been undertaken by West African Resources following their acquisition of Channel and the Tanlouka permit which was part of the Channel tenement portfolio.

Exploration work completed by Channel from 1996 to 2012 is well documented in the report authored by Smith (2012) titled "NI 43-101 Technical Report on Mineral Resources for the Mankarga 5 Gold Deposit Tanlouka Property, Burkina Faso for Channel Resources". The exploration work by Channel detailed in this section and summarised below is based on that report.

No exploration activities of substance were undertaken since from mid-2012 until early 2014 when WAF began an infill drilling program at the Mankarga 5 prospect. WAF also completed an auger drilling program encompassing the entire Tanlouka Permit on a 400m by 100m grid to validate existing anomalies generated via historic soil sampling.

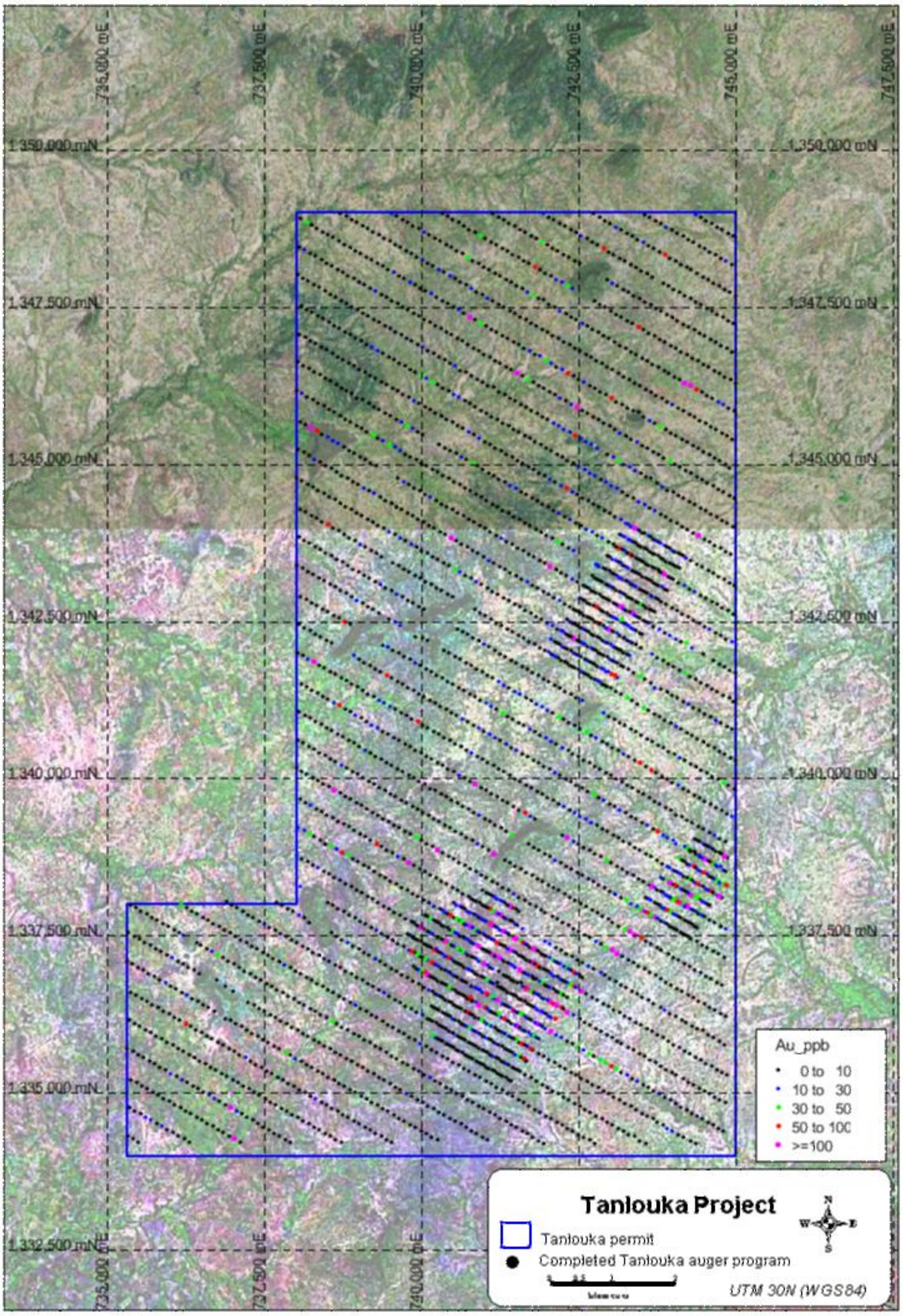
9.2 Survey Coordinate system

The coordinate system used for all data collection and surveying on the Tanlouka property is the Universal Transverse Mercator (UTM) projection, Zone 30 North, using the World Geodetic System 1984 datum (WGS84).

9.3 Auger Geochemistry

WAF commenced work on the Tanlouka permit in early 2014. Auger has been completed across the entire Tanlouka permit, in order to verify the existing soil geochemical anomalies and also cover areas in the western and southern parts of the tenement that had previously not been covered. The auger drilling was based on a 400m x 100m spaced grid along N120-300 oriented lines. Areas of interest have been infilled to 200m by 50m spacing. At the time of reporting no results have been received. A figure showing the complted auger program, is shown below in Figure 9.1.

Figure 9.1 Tanlouka Project – Completed Soil Auger Geochemistry Program



10. DRILLING

10.1 Introduction

The area of the Mankarga 5 resource was sampled using Reverse Circulation (RC), Aircore (AC) and Diamond drill holes (DD) on a nominal 100m x 25m grid spacing. A total of 116 AC holes (4,601m) and 8 DD holes (1,283.2m) were drilled by WAF in 2013-2014. A total of 60 RC holes (7,296.2m) and 71 DD holes (15,439.6m) were drilled by Channel in 2010-2012. The strike of the mineralisation is approximately 030° and dips approximately 70-80° to the northwest. The majority of the core holes were drilled at 120° azimuth and all core holes have a dip of -50°, whereas the majority of the RC holes were drilled at 300° azimuth with a dip of -50°, in order to optimally intersect the mineralised zones.

Since 2014, all drilling work has been managed directly by WAF's personnel. WAF also owns and operates a fleet of seven drill rigs which are working continuously during the field season on the Boulsa Project. Their drill fleet includes three auger rigs, one RAB rig and two multi-purpose RC-diamond rigs with 70m RC and 150m core capacity, and one dedicated diamond rig capable of drilling to 500m. In Burkina Faso, WAF has a local exploration, drilling and support team of more than 50 people.

Since 2000 there have been five drilling campaigns on the Tanlouka permit, including a RAB program in 2000 by Channel and a RC program in June, 2003, both by Orezone Resources (Orezone). Drilling completed by Channel includes two phases of RC drilling (Jun 2010 to April 2011) and a diamond drilling programme (Phase 3, Jul 2011 to Feb 2012). Only Channel's Phase 1, 2 and 3 drill programs, as well as AC/RC and diamond drilling by WAF have been used for estimating mineral resources.

Drilling completed by Channel from 2000 to 2012 is well documented in the report authored by Smith (2012) titled "NI 43-101 Technical Report on Mineral Resources for the Mankarga 5 Gold Deposit Tanlouka Property, Burkina Faso for Channel Resources". The drilling programs by Channel detailed in this section are summarised below and are based on that report. For additional information on drilling methods, procedures and results from Channel's drilling please refer to the aforementioned report.

10.2 Drilling Procedures

The drilling procedures used by WAF at the project from early 2014 are detailed in this section. WAF has set up drilling and logging protocols and procedures to which all the company geologists adhere. These include systematic drill hole planning, site preparation, drilling and logging.

10.2.1 *Hole Planning, Site Preparation and Set-up*

The procedure followed by West African Resources to plan new RC and diamond drilling programs starts with the senior geologist designing proposed holes with the help of maps and sections drawn with MapInfo-Discover and Micromine software. The proposed program is reviewed and revised by the Exploration Manager and the Managing Director of WAF. Finally, the drill program is discussed, agreed upon and finally double-checked by the senior geologist to mitigate errors.

Holes are drilled perpendicular to the strike of mineralisation. At Mankarga 5, holes have been drilled on both southeast and northwest azimuths to intersect the steeply northwest dipping, northeast striking shear zone.

A hand-held GPS is used to locate and prepare the pads for the planned holes. The hole collars are spotted in the field and pegged using a GPS that gives accuracy of measurement generally to within several metres. The field geologist uses a compass to mark the fore and back sights using pickets for drill rig alignment and orientation purposes. The geologist assists the positioning of the drill and checks the requested dip angle.

Once drilled, the casing is surveyed using a DGPS. The DGPS measurements are validated on a known control station and generally has <10cm accuracy.

10.2.2 *Surveying and Orientations*

All hole locations have been located by DGPS in UTM grid WGS84 Zone 30 North. Down hole surveys are used to map hole paths, with single shot readings taken during drilling (at 25m, then every 50m), and the company owned DGPS RL data was used for topographic control.

10.2.3 *Hole Logging Procedures*

Geotechnical logging is carried out on all diamond drill holes for recovery, Rock Quality Designation (RQD) and number of defects (per interval). Information on structure type, dip, dip direction, alpha angle, beta angle, texture, shape, roughness and fill material is stored in the structure/geotech table of the database.

Logging of diamond core and RC samples recorded lithology, mineralogy, mineralisation, structural (DDH only), weathering, alteration, colour and other features of the samples. Core is photographed in both dry and wet form.

All drilling is logged to a standard that is appropriate for the category of resource which is being reported.

10.2.4 *Aircore and RC Logging*

Logging of the chips is done at the drill site in order to ensure that potential mineralised zones are intersected and that drill holes can be extended if and when necessary. The detailed logging of the cuttings is done in a manner similar to the core. The logging mainly concentrates on the geological features such as mineralogy, rock type, weathering, alteration and specific features such as veining and particular textures such as shearing and foliation.

Small samples of screened and washed chips from all the 1m runs are saved in clearly labelled plastic boxes (chip trays) bearing the depth markers and hole identification. Once the hole is logged, sampled and the chip trays filled, the bags containing the remainder of the AC/RC chips are transported from the drill site to a bag farm close to the Poussighin campsite.

Bags are weighed directly after the sample is collected from the cyclone, so that recoveries can be estimated accurately.

All the measurements in the field, the parameters related to geological and sampling of the RC and core holes are captured directly in fixed forms with menus on an Excel platform loaded in toughbook computers, to eliminate description and transcription errors. All the features are logged using standard codes. The logs are checked daily by the senior geologist for completeness and accuracy.

All the holes are also recorded on datasheets, where all the relevant non geological data such as hole ID, dip, dip direction, hole depth, bit size, date, water ingress etc. are recorded.

10.2.5 *Diamond Drill Logging*

Drill core is recovered by the drillers and stored in boxes with markers inserted after each run to indicate the depth and any core loss or gain. At the end of the shifts, the boxes are closed and transported to a new, covered enclosed storage area at the Poussighin core shed.

A geologist calculates the RQD at the core shed. Prior to logging, the core pieces are fitted together on rails in order to check the depth markers placed by the drillers and possible core mix-ups, and to calculate the core recovery. The reference line of the oriented core is drawn from the spear imprint and the geotechnical parameters are logged. The core is placed back in the boxes to clearly display the line of reference or the angle between the dominant fabric (bedding, foliation) and the core axis. Subsequently the lithological contacts, structural features, mineralised zones and the samples are marked up.

The following information is recorded in the core logs in an Excel spreadsheet:

- Geology - Lithology, colour (using a standard colour chart), texture, grain size, weathering (oxide [strong/moderate/weak], transition, fresh), alteration, veins, sulphides, mineralogy;
- Structure – Azimuth/dip direction and dip, shear, fracture, joint, infill, colour, thickness, bedding, crenulation, veins, quality of the measurement;
- Sample sheet - Number (allowing for the control samples), weight, mineralogy and abundance (volume%) of veins and mineralisation; and
- Geotechnical - Rock strength, weathering, joint sets with type, count, angle, roughness, alteration, infill, roughness;
- Bulk Density;
- All the core is photographed wet and dry before the core is marked and cut for assaying. The photographic records are downloaded as individual computer files, and relabelled according to their depth;
- All drill core is laid out in clearly marked one meter long moulded plastic boxes stored at the core shed near the Poussighin campsite.

10.3 Bulk Density

The prospect area is moderately to deeply weathered /oxidised with the top of fresh rock over mineralised zones around 50 to 60 metres below surface. Bulk densities are based upon over 5,000 density measurements completed by WAF (carried out internally) and Channel (carried out by SGS laboratories). Both utilised industry standard immersion techniques.

Bulk densities used were 2.2, 2.6 and 2.7 for oxide, transitional and fresh, respectively.

Regolith domains were constructed, coded into the resource model and used to assign appropriate bulk densities. All are dry densities and void spaces in core are understood to be negligible.

10.3.1 *Historical Bulk Density Test work by Channel*

A total of 3,494 drill core density determinations (also referred to as specific gravity, or SG determinations), were performed on drill core using water immersion methods at the SGS laboratory. Data were collected from a representative suite of all rock types, mineralisation types and grade ranges, but for the purpose of this initial mineral resource estimate, all samples were coded as either saprolite or sulphide rock types. A total of 3,372 drill core density determinations were performed on drill core. There were 700 density determinations coded as saprolite and 2,672 density determinations coded as sulphide.

10.3.2 *WAF Bulk Density Test work*

Bulk density has been estimated from density measurements carried out on more than 1,500 ten centimetre core billets using the Archimedes method of dry weight versus weight in water. Wax was used to seal the core. Steel billet density standards were used for QA/QC.

10.3.3 ***Drilling Results***

WAF commenced drilling on the Tanlouka permit, focusing on upgrading the Mankarga 5 Resource in early 2014. Table 10.1 below provides a summary of additional drilling completed by WAF to update the Mankarga 5 Resource. Significant intercepts are presented in Table 10.2, and a typical cross-section of mineralisation and drilling plan are presented as Figure 10.1 and Figure 10.2.

Table 10.1 Tanlouka Project – WAF Aircore and Diamond Drilling included in Resource Estimate To March 2014

Permit	RAB		AC		RC		Diamond	
	Holes	Metres	Holes	Metres	Holes	Metres	Holes	Metres
Tanlouka			109	4313			2	430.4
Total			109	4313			2	430.4

Table 10.2 Tanlouka Project – Significant Results from WAF Drilling Programs

Prospect	Hole Id	From	To	Interval	Au g/t	Dip	Azimuth	Depth	Easting	Northing	RL
Mankarga 5	TAC0009	30	46	16	2.58	-50	120	46	742163	1336151	319
Mankarga 5	TAC0024	17	32	15	4.69	-50	300	32	742266	1336198	318
Mankarga 5	TAC0029	8	36	28	1.87	-50	120	49	742299	1336295	319
Mankarga 5	TAC0029	40	49	9	5.95						
Mankarga 5	TAC0038	53	59	6	3.54	-50	120	60	742546	1336614	318
Mankarga 5	TAC0042	10	24	14	1.10	-50	120	56	742665	1336776	315
Mankarga 5	TAC0042	27	38	11	3.11						
Mankarga 5	TAC0045	48	57	9	1.44	-50	120	57	742735	1336909	313
Mankarga 5	TAC0048	38	50	12	8.82	-50	120	54	742812	1336981	313
Mankarga 5	TAC0050	35	43	8	5.69	-50	120	60	742839	1337081	315
Mankarga 5	TAC0051	9	23	14	2.42	-50	120	49	742882	1337056	315
Mankarga 5	TAC0052	6	23	17	0.99	-50	120	44	742931	1337027	312
Mankarga 5	TAC0054	5	9	4	4.28	-50	120	45	743011	1337094	312
Mankarga 5	TAC0058	15	39	24	1.33	-50	120	57	743111	1337269	309
Mankarga 5	TAC0060	21	24	3	3.52	-50	120	35	743044	1337422	314
Mankarga 5	TAC0062	36	42	6	2.00	-50	120	42	743130	1337372	311
Mankarga 5	TAC0066	11	21	10	1.21	-50	120	25	743125	1337483	312
Mankarga 5	TAC0068	1	18	17	0.77	-50	120	27	743231	1337428	311
Mankarga 5	TAC0070	5	10	5	2.65	-50	120	42	743259	1337411	309
Mankarga 5	TAC0072	18	34	16	0.95	-50	120	39	743173	1337580	312
Mankarga 5	TAC0101	9	23	14	1.12	-50	120	39	743524	1337734	308
Mankarga 5	TAC0102	3	15	12	1.53	-50	120	27	743544	1337720	308
Mankarga 5	TAN14-DD001	244	282	38	2.19	-50	120	350	742010	1336244	320
Mankarga 5	TAN14-DD003	333	340	7	4.09	-50	120	410	742028	1336328	321

Figure 10.1 Tanlouka Project – Mankarga 5 Typical Cross-section

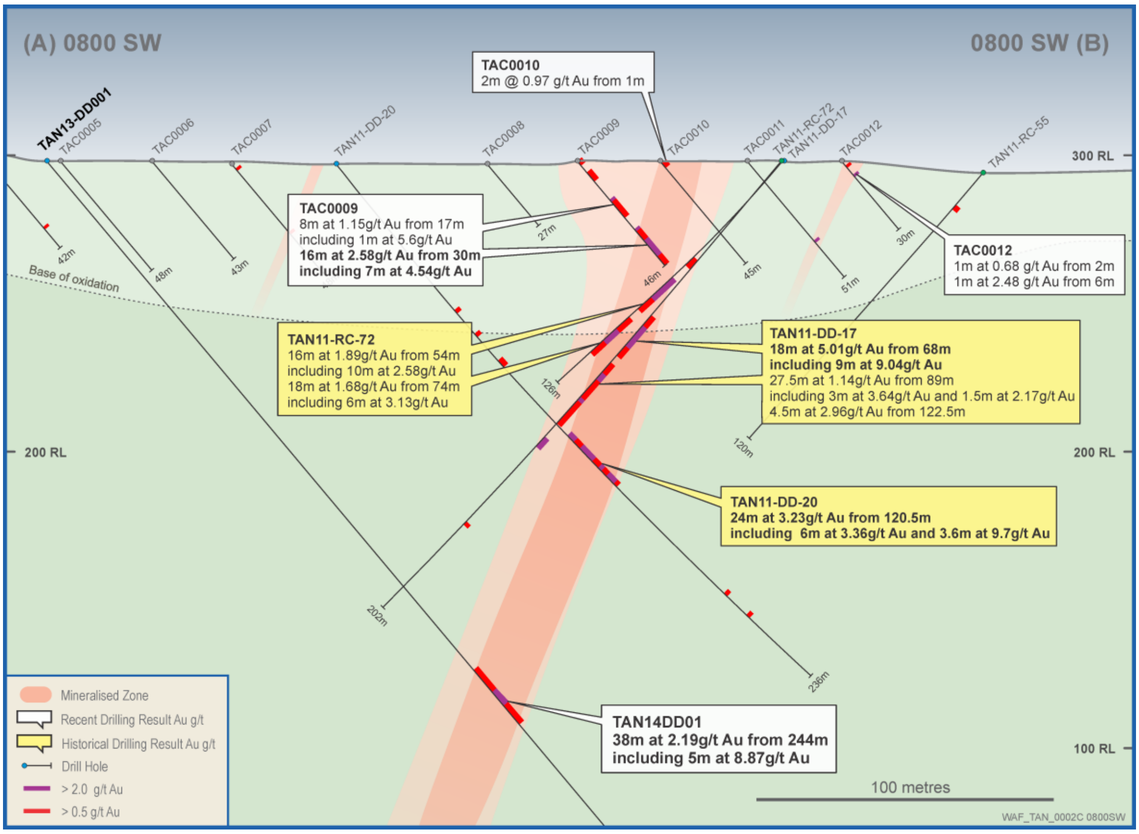
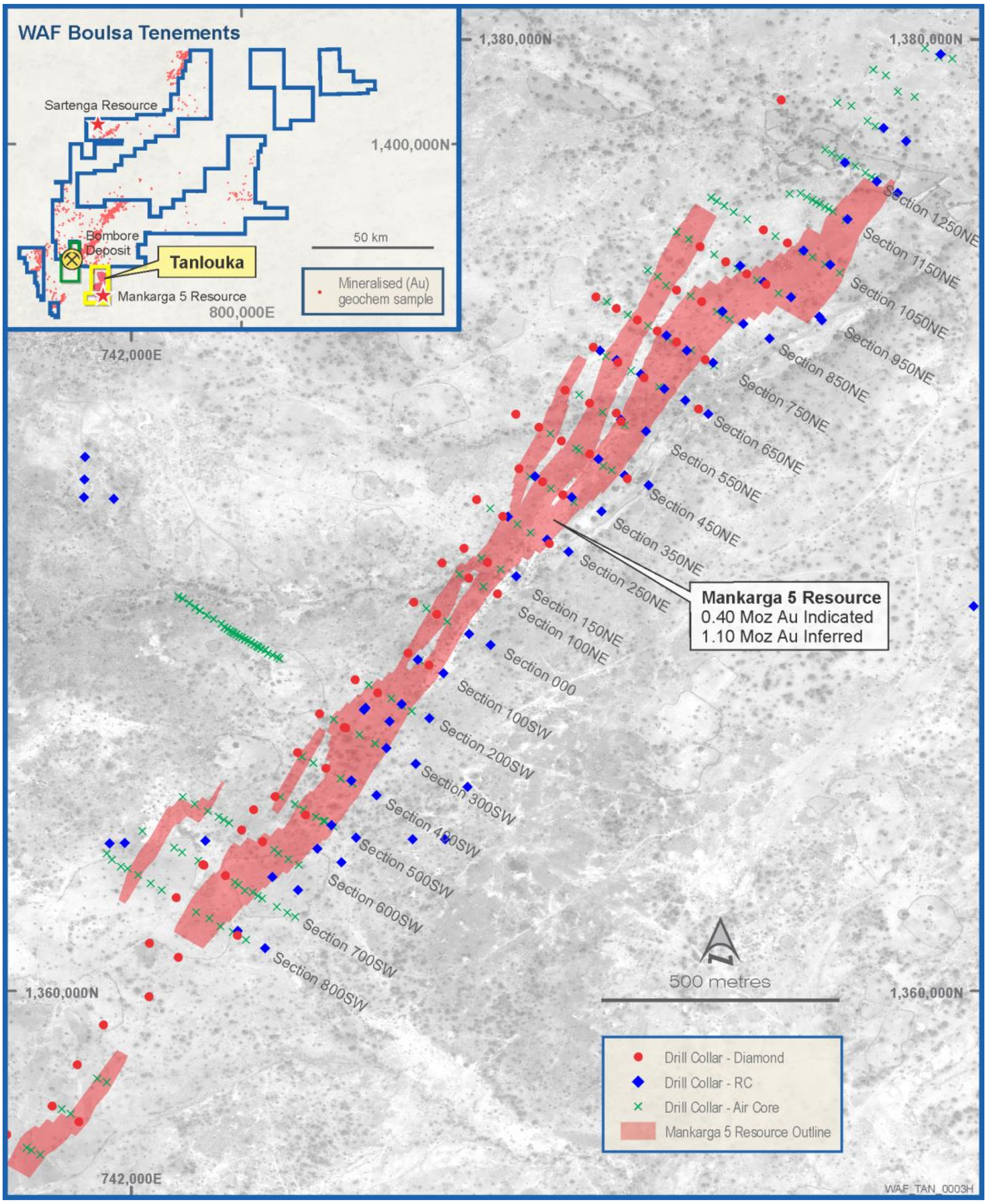


Figure 10.2 Tanlouka Project – Mankarga 5 Typical Cross-section



11. SAMPLE PREPARATION, ANALYSES AND SECURITY

Four commercial laboratories are established in Ouagadougou, namely ALS-Chemex (formerly Abilab), SGS, Intertek and BIGS, all of which offer sample preparation services, with three of them offering a range of analytical services including bottle-roll cyanidation and fire assay.

Sampling and assaying completed by Channel from 2000 to 2012 is well documented in the report authored by Smith (2012) titled "NI 43-101 Technical Report on Mineral Resources for the Mankarga 5 Gold Deposit Tanlouka Property, Burkina Faso for Channel Resources". The sampling and assaying programs by Channel detailed in this section are summarised below are based on that report. For additional information on sampling and assaying methods and procedures from Channel's programs please refer to the aforementioned report.

11.1 RC Drilling Sampling Methodology

11.1.1 *Channel Sampling Methodology*

During the Phase 1 RC drilling program, samples were collected at 2m intervals from the cyclone attached to the RC rig. Each sample was then passed through a multistage riffle splitter which effectively divided the sample into 1/8th and 7/8th portions. The 1/8th portion was passed through a single-stage riffle splitter to yield two equal samples of between 2kg and 3kg each. Each split was placed in plastic sample bags. One bag was designated the archive portion and the other as the laboratory sample split. Stubs of the same sample ticket number were stapled to the top of both split portions. Sample numbers were also written on the plastic bags with red marker in the case of the archive split and black marker for the laboratory split. At the end of each day all samples were locked in a secure room.

The Phase 2 RC drilling was performed by Forages Technic-Eau Burkina SARL of Ouagadougou using a truck mounted Ingersoll Rand T3W equipped for RC drilling. The maximum depth of drilling requested by Channel was 200m. All of the Phase 2 RC drill holes were down hole surveyed using a GYRO SMART instrument.

The Phase 2 RC drilling program was sampled in similar fashion to the Phase 1 program. Samples were collected at 2m intervals from the cyclone attached to the RC rig. Each sample was then passed through a multistage riffle splitter which effectively divided the sample into 1/8th and 7/8th portions. The 1/8th portion then passed through a single stage riffle splitter to yield two equal samples of between 3 and 4kg each. Each split was placed in plastic sample bags. One bag was designated the archive portion and the other as the laboratory sample split. Stubs of the same sample ticket number were stapled to the top of both split portions. Sample numbers were also written on the plastic bags with red marker in the case of the archive split and black marker for the laboratory split. At the end of each day all samples were locked in a secure room.

11.1.2 *WAF Sampling Methodology*

RC/AC samples were collected on the rig using a three tier splitter. All samples were dry. Samples are weighed prior to splitting. The 1m splits are then bagged and dispatched to the laboratory for analysis.

Field QC procedures involve the use of certified reference material as assay standards, blanks and duplicates. The insertion rate of these averaged 3:20. Field duplicates were taken on 1m composites for WAF RC/AC samples, using a riffle splitter.

11.2 Diamond Drilling Sampling Methodology

The core is placed in the saw cradle facing down hole. If the core is oriented, the core is cut perpendicular to the orientation line. For consistency, the orientation line is placed on the left hand side of the saw blade with the right hand side of the core taken for assay sample. The half core with the orientation line is retained in the core box. If there is no orientation line for reference, the core is still placed in the saw cradle facing down hole with the right hand side taken for assay and the left retained in the core box.

Once the core is cut in half, it is sampled on a 1m sample interval (unless otherwise noted) with the in-put of blank and standard material at a rate of not less than one (each) every 20 samples. Half core samples are placed within a calico sample bag and identified with the sample number. Field duplicates are taken from the original sample at the laboratory following crushing and inserted into a specifically numbered sample bag provided to the laboratory.

The sample preparation for all samples follows industry standard practice. The samples were dispatched to the laboratory (as per section 'Sampling Techniques') where they were crushed, dried and pulverised to produce a sub sample for analysis. Sample preparation involved oven drying, coarse crushing, followed by total pulverisation LM2 grinding mills to a grind size of 90% passing 75 microns.

The sample sizes are considered to be appropriate to correctly represent the style of mineralisation, the thickness and consistency of the intersections.

11.3 Chain of Custody and Transport

11.3.1 *Channel*

The chain-of-custody for RC and core samples collected and shipped from the exploration compound is as follows:

- RC samples or core boxes are transported to the exploration compound by the drill contractors or Channel geologists and placed in the logging area;
- The logging and sample preparation area is a fenced compound and all prepared samples are locked in the sample holding room. Only authorised personnel have access to the sample holding room;
- RC samples or split core samples are placed in sealed rice sacks in groups of about 15-20 samples per rice sack for shipping;
- A sample submission form accompanies each batch of samples;
- Sample batches are transported to Ouagadougou by Channel employees in company-owned vehicles.

All pulp rejects and coarse rejects are retained by Channel and are stored in two secure locations in Mogtedo. The first warehouse stores all of the coarse rejects and the second warehouse stores all of the pulp rejects from the laboratories.

11.3.2 *West African Resources*

Chain of custody is managed by WAF. The AC/RC samples and the drill core retrieved by the drillers are collected and handled at the drill site by WAF personnel. The samples are transported to the core shed area at the basecamp at Poussighin and delivered by WAF personnel to BIGS Ouagadougou for sample preparation. Whilst in storage, they are kept under guard in a locked yard. Tracking sheets are used to track the progress of batches of samples. The samples are continually under the direct control of WAF, who monitors the preparation and shipment of the samples. This ensures reasonable chain of custody by WAF from the drill sites to the analytical laboratory.

11.4 Assay Sample Preparation

11.4.1 *Channel*

A total of 555 samples from the Phase 1 RC program and a total of 3,446 samples from the Phase 2 RC program were collected and submitted to Abilab Burkina SARL (Abilab). Samples, representing two metre intervals were prepared using the following laboratory codes at Abilab:

- WEI-21: all samples weighed as received from client;
- DRY-21: high temperature drying (max temp=105°C) for rock chip and core samples;
- LOG-22: sample received without barcode;
- LOG-24: sample received without barcode. At least one out of every 50 samples is selected at random for routine pulp QC tests (LOG-QC). For routine pulps, the specification is 85% passing a 75 micrometre screen;
- CRU-31: used if rock particles are too large for PREP-31;
- PREP-31: 250g to 500g are split off and pulverised with LM2 to better than 85% passing 75 micrometres;
- SPL-21: crushed sample is split using a riffle splitter;
- PUL-31: Pulverise a split or total sample of up to 250 g to 85% passing 75 micrometres or better.

Also, a total of 11,128 samples from the Phase 3 core program were assayed, primarily at the SGS Burkina Faso SA (SGS) in Ouagadougou. Towards the end of the Phase 3 program, Channel sent some of the remaining samples to Abilab, due to the slow turnaround time experienced at SGS. Samples, representing 1.5m intervals were prepared using the following laboratory codes at SGS:

- WGH79: weighing of samples and reporting of weight;
- DRY10: Dry samples <3.0 kg at 105°C;
- SPL26: Sample volume reduction-riffle split;
- CRU21: Crush <3.0 kg to 75% passing 2mm;
- PUL45: Pulverise 250 g in Cr steel to 85% passing 75 micrometers.

11.5 Methodology of Sample Assay Analysis

All Phase 1 and 2 RC samples were then analysed by Abilab laboratory code Au-AA26 in which a 50 gram charge is subjected to standard fire assay (FA) followed by an atomic absorption spectrometry (AAS) finish for samples with a grade range of 0.01 ppm to 100 ppm Au. The detection limit for gold is 0.01 g/t Au (0.01 ppm).

In addition, Channel sent all of the Phase 1 RC coarse rejects for a multi-element analysis to determine if gold was the only significant commodity on the Tanlouka permit. After an aqua regia digestion, all samples underwent a 35 element analysis by inductively coupled plasma mass spectrometry (Code ME-ICP41) at an ALS Chemex laboratory in Johannesburg, South Africa. The multi-element analysis did not return any significant results on any of the assayed elements.

The majority of the Phase 3 core samples were prepared and analysed at SGS using laboratory code FAA505, in which a 50 gram charge is subjected to standard FA followed by an atomic AAS finish for samples with a grade range of 0.01 ppm to 100 ppm. This is the same sample analysis procedure used at Abilab for the RC samples and the core samples analyses at the end of the Phase 3 program.

11.6 Assay Quality Control Measures (QA/QC)

Sample preparation checks for fineness are carried out by the laboratory as part of their internal procedures to ensure the grind size of 90% passing 75 micron was being attained.

Laboratory QA/QC involves the use of internal lab standards using certified reference material, blanks, splits and duplicates as part of the in house procedures. Certified reference materials, having a good range of values, are inserted blindly and randomly. Results highlight that sample assay values are accurate and that contamination has been contained.

Repeat or duplicate analysis for samples reveals that precision of samples is within acceptable limits. For Diamond core, one blank and one standard is inserted every 18 core samples and no duplicates. For RC samples, one blank, one standard and one duplicate is inserted every 17 samples.

12. DATA VERIFICATION

12.1 Independent Qualified Person Review and verification

The Independent Qualified Person, Mr Don Maclean, has undertaken the following steps to verify the data upon which this report is based:

Mr Don Maclean has visited the Tanlouka Project in April 2014, and visited the neighbouring Boulsa project on several occasions between 2010 and 2014. Steps undertaken to verify the integrity of data used in this report include:

- Field visits to most of the prospects outlined in this report including the Tanlouka permit and Mankarga 5 deposit;
- Inspection of mineralised and un-mineralised drill core and RC drill chips from Tanlouka;
- Inspection of Aircore and Diamond drilling activities, sampling and logging;
- Review of WAF's data collection, database and data validation procedures;
- Site visit to BIG's laboratory in Ouagadougou (the laboratory WAF have used for assaying their 2014 drilling program);
- Review of the previous NI 43-101 report for the project authored by Smith (2012) titled "NI 43-101 Technical Report on Mineral Resources for the Mankarga 5 Gold Deposit Tanlouka Property.

The Independent Qualified person has reviewed and cross-checked sections of this report prepared by WAF.

The Independent Qualified Person also completed the updated resource estimate for the Mankarga 5 Deposit. Additional data verification steps undertaken during this estimate process included:

- Validation of drilling, geology and assay data on import into Minesight Torque® (ie checks overlapping intervals, samples beyond hole depth and other data irregularities);
- Review of WAF QA/QC charts for standards, blanks and duplicates;
- Visual and statistical analysis of resource estimate model outputs versus primary data;
- Random cross checks of assay hardcopy reports against the database.

Based on the review work above the Qualified Person is of the opinion that the data set provided by WAF is of an appropriate standard to use for resource estimation work.

12.2 Mankarga 5 Prospect: QA/QC Data Analysis

QA/QC data from WAF's 2014 drilling program is presented in the following sections. QA/QC data from Channel's drilling from 2000 to 2014 is documented in the report authored by Smith (2012) titled "NI 43-101 Technical Report on Mineral Resources for the Mankarga 5 Gold Deposit Tanlouka Property, Burkina Faso for Channel Resources". For information on the QA/QC programs from Channel's programs please refer to the aforementioned report.

The following Mankarga 5 data has been assessed:

- Standards: The standards assays provide a measure of relative analytical precision. Sample batches which fall outside specified tolerance ranges are flagged and investigated;
- Laboratory Repeats (i.e. represents a second 50g pulp sample taken from the first 200g pulp);
- Laboratory Duplicates (i.e. represents a second 200g pulp sample taken from the initial pulverised material);
- Field Duplicates (i.e. represents a second sample split (3kg) taken from the original field sample interval. This sample is taken at the same time as the original sample.

This data has been analysed by Fire Assay method and has been statistically evaluated.

Statistical Evaluation

The quality control data has been statistically evaluated, and summary plots have been produced for interpretation using the functions available in QC Assure software. The types of plots produced are described in summary form below:-

Thompson and Howarth Plot

Shows the mean relative error in percent of grouped assay pairs across the entire grade range. Used to visualise precision levels by comparing against given control lines.

Rank % HARD Plot

Ranks all assay pairs in terms of precision levels measured as half of the absolute difference from the mean of the assay pairs (% HARD). Used to visualise relative precision levels, and to determine the percentage of the assay pairs population occurring at a certain precision level.

Mean vs. % HARD Plot

Used as another way of illustrating relative precision levels by showing range of % HARD over the grade range.

Mean vs. %HRD Plot

The same sort of plot as above, but the sign is retained, thus allowing negative or positive differences to be computed. This plot gives an overall impression of precision, and also shows whether or not there is significant bias between the assay pairs by illustrating the mean percent half relative difference between the assay pairs (mean % HRD).

Correlation Plot

This is a simple plot of the value of assay 1 against assay 2. This plot allows an overall visualisation of precision and bias over selected grade ranges. Correlation coefficients are also used.

Quantile-Quantile Plot

This is a similar plot to the correlation plot, but smooths the data by reducing the effects of outliers. This is achieved by grouping the assay pairs into quantiles of grade. The Q-Q plot is a good indicator of bias (accuracy).

Standard Control Plot

This plot shows the assay results of a particular reference standard over time. The results can be compared to the expected value, and the ±10% precision lines were also plotted. This gives a good indication of precision and accuracy.

Custom Plots

These plots illustrate the cumulative sum of the deviation from the expected value of a particular reference standard or from the mean of the assays over time. Used to determine direction and severity of bias, and to illustrate changes in grade over time.

Results of the analysis of the BIGS laboratory data are presented the following sections.

12.3 Fire Assay Analyses

Standards

Summary plots for the standards are presented in Figure 12.1 to Figure 12.9. The standard details and comments are presented in Table 12.1.

Table 12.1 WAR Internal Standards					
Standard	No of Assays	Expected Value Au g/t	Standard Deviation	No. samples outside EV range	% samples in EV range
G310-6	8	0.52-0.78	0.07	1	88
G311-1	70	0.42-0.62	0.03	1	99
G901-1	11	2.06-3.10	0.07	0	100
G901-7	68	1.22-1.82	0.09	0	100
G908-7	44	3.86-5.78	0.26	0	100
G995-1	47	2.20-3.30	0.19	2	96
G996-4	13	0.41-0.61	0.03	0	100
GS-1P5F	31	1.12-1.68	0.14	1	97
GS-P7H	36	0.64-0.96	0.05	1	97

In general, the standard assay results indicate that acceptable accuracy is being achieved, with all but one of the standards falling within 90% of the standard tolerance values. Standard G995-1 has two outliers from 47 assays with the remainder of the assays falling within their respective two standard deviations. Standard G310-6 is the only material that has recorded a sample percentage of less than 90% within the Expected Value (EV) range.

Few standards reported results outside the tolerance range, with the exception of G310-6, but the sample population is deemed too small to be properly representative, even though the variability is fairly low overall which exhibits a high degree of variability.

Overall, the analysis population for each individual certified standard is average (~40), but the overall results are consistent.

Blanks

Blanks are commonly used to test for contamination during the sample preparation process. Blanks are usually composed of clean silica sands, such as pool filter sand or beach sands. Unmineralised granitic material can also form a good medium for blanks.

The blank material used by WAF at Mankarga 5 has been sourced by the company from Southwest Burkina, and the material was tested by two different laboratories. The quality of the blanks is deemed adequate, and gives an adequate indication of the quality of the sample preparation at BIGS Global. The standard deviations for both the blank material is however deemed high.

Table 12.2 shows that the blank material BLANKWAR4 is fairly consistent, but that a number of outliers are observed, however the general pattern is consistent and variability is within an acceptable range.

Table 12.2 WAR Blanks					
Standard	No of Assays	Expected Value Range Au g/t	Standard Deviation	No. samples outside EV range	% samples in EV range
BLANKWAR4	396	0.00-0.01	0.01	8	98

Pulp (laboratory) Repeats

Statistics and summary plots for the FAA repeats for 336 pairs are presented in Figure 12.11. No lower cut or upper cut has been applied to the dataset. The minimum value is 0.002ppm Au and the maximum is 7.855ppm Au.

Precision of the repeats for the FA method is considered good, with 96.25% of the assay pairs reporting within acceptable limits (20% HARD), with no bias present in the dataset.

Field Duplicates

Field duplicates are used to determine sampling error and also give an indication of the precision of the data pairs (original vs. duplicate). The quality of the data will depend greatly on the quality of the actual duplicate prepared in the field; for instance, diamond drill core field duplicates are hard to prepare in the field, and are best prepared by crushing and homogenising the sample prior to splitting into two identical sub-samples and submitting to the laboratory. Percussion sample duplicates can be prepared by passing the original field sample through a splitter.

Statistics and summary plots for the FAA repeats are presented as Figure 12.12. No lower cut-off or upper cut have been applied to the dataset.

Precision of the field duplicates for the FAA method are considered passable. The duplicates correlate relatively poorly with the original and only 80.12% of all the data fall within an acceptable 20% precision limit.

The Thompson and Howarth (T&H) plots show a large scatter of the data points between 10% and 30% lines indicating a poor assay correlation between the duplicate pairs, mainly due to the poor duplication of the extreme grades (>10 ppm Au). Furthermore, the correlation plots appear to indicate that there is a low bias in the dataset.

Laboratory Splits

In this case the laboratory splits are in effect laboratory duplicates, where two splits are taken from the original sample crush. A total of 281 splits were taken, and the statistical results are shown in Figure 12.3.

From the graphs it is evident that 97.2% of the pairs are within a 20% HARD precision limit, which is acceptable, and that similarly 96% of the pairs are within a 10% HARD.

Similarly, the T&H plots show a mean relative error for most of the pairs of less than 10%, which is acceptable. The correlation plots show that there appears to be no marked bias in the data.

Conclusion

Standard Control Plot: Standard control plots allow the investigation of analytical drift, accuracy and bias on the basis of assays undertaken on laboratory standard media. The control plots for the various standards show that the certified standards are within acceptable ranges with no evident outliers, however, it must be noted that the standard populations are relatively small.

For the various sample pairs, the following precision limits have been calculated:

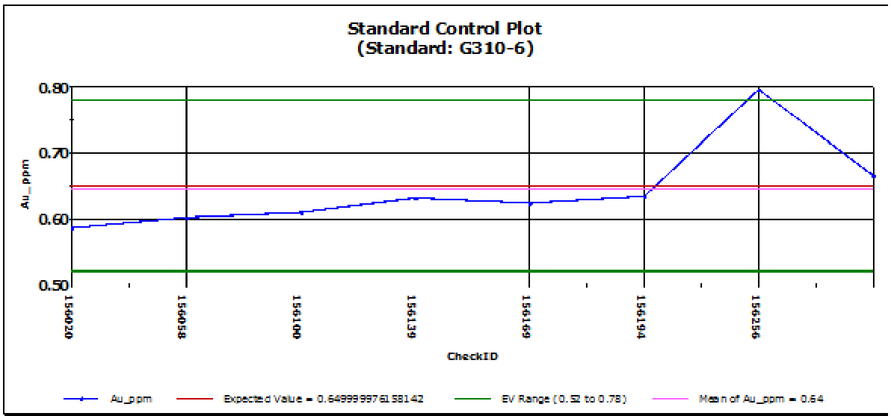
- Field Duplicates –80.12% passing 20% HARD
- Lab splits –97.2% passing 20% HARD (or 96% passing 10% HARD)
- Lab repeats –.96.25% passing 20% HARD

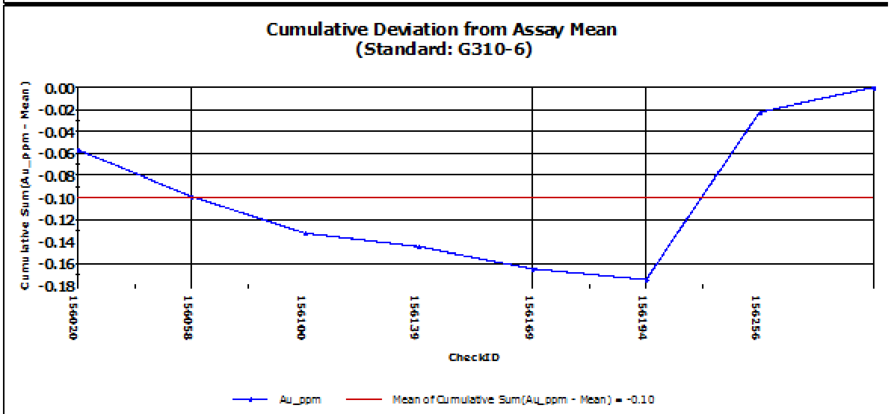
This shows that the laboratory splits and repeats are within acceptable precision limits but that the field duplicates are not very accurate for very high grade values (>10g/t Au).

Figure 12.1 Standard G310-6

Summary G310-6

Standard:	G310-6	No of Analyses:	8
Element:	Au_ppm	Minimum:	0.59
Units:	ppm	Maximum:	0.80
Detection Limit:	0.005	Mean:	0.64
Expected Value (EV):	0.65	Std Deviation:	0.07
E.V. Range:	0.52 to 0.78		





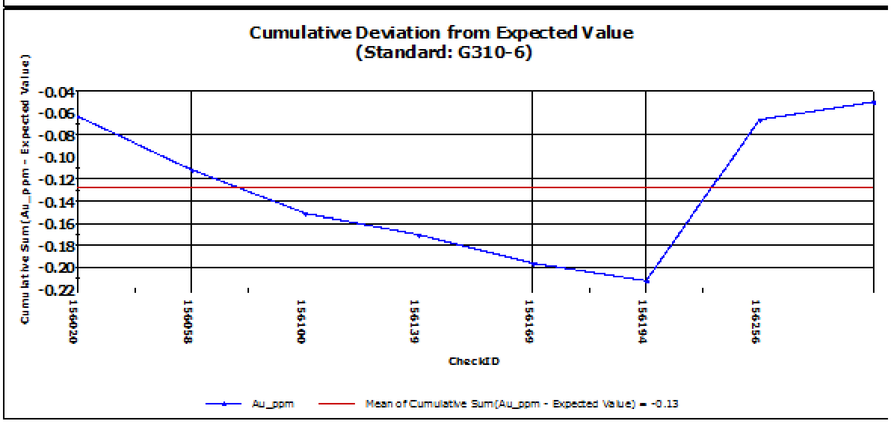


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Figure 12.2 Standard G311-1

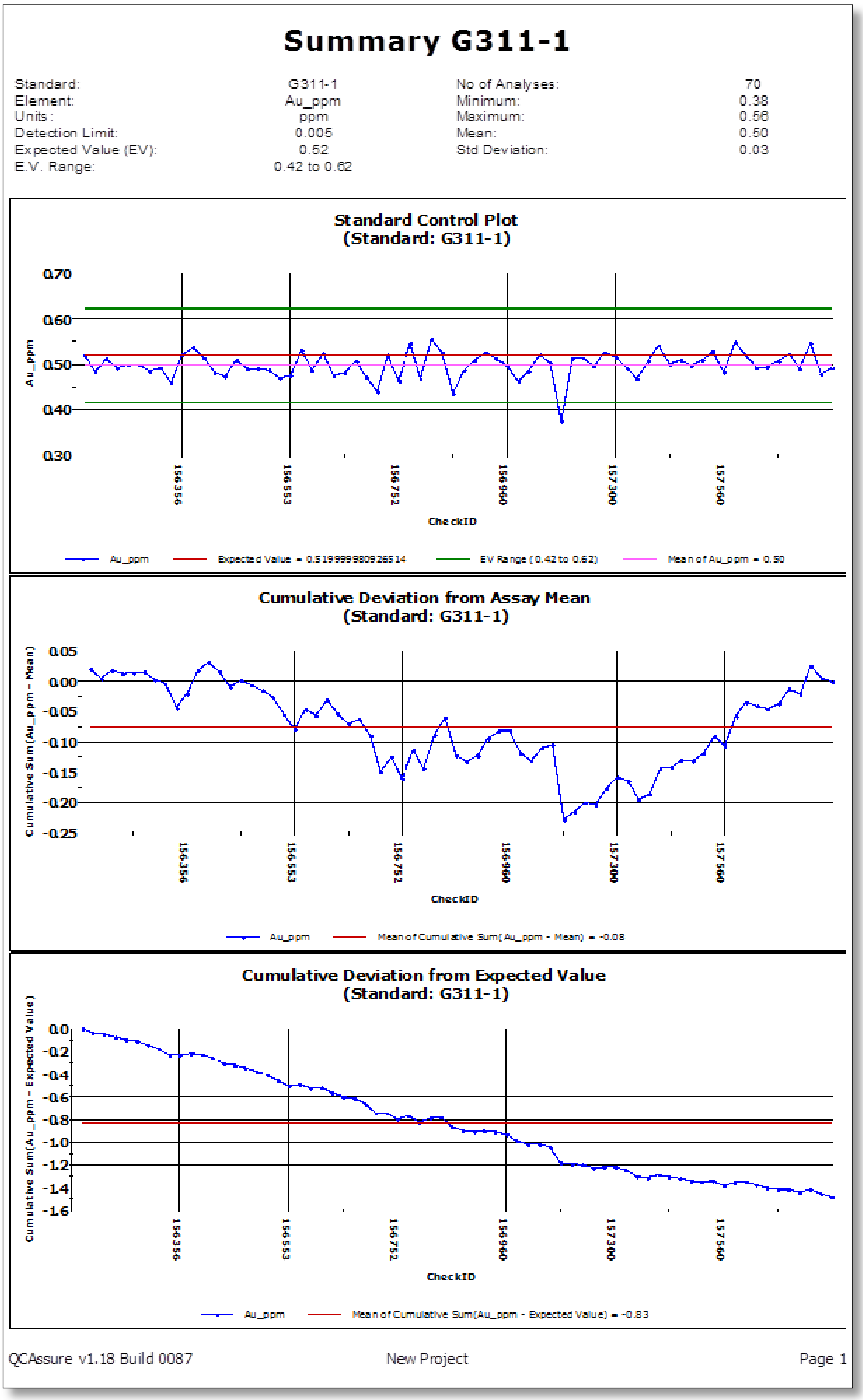

Figure 12.3 Standard G901-1

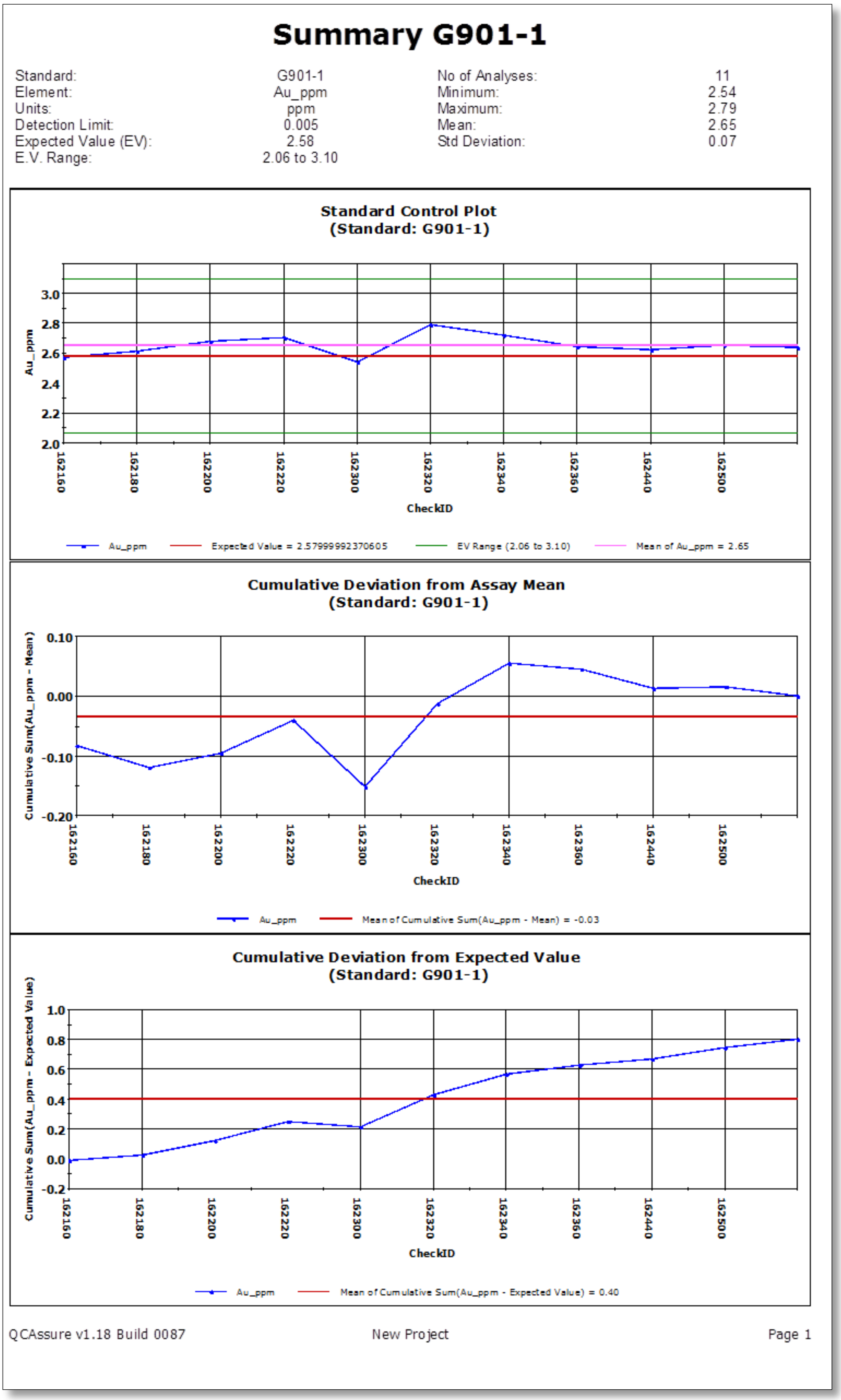

Figure 12.4 Standard G901-7

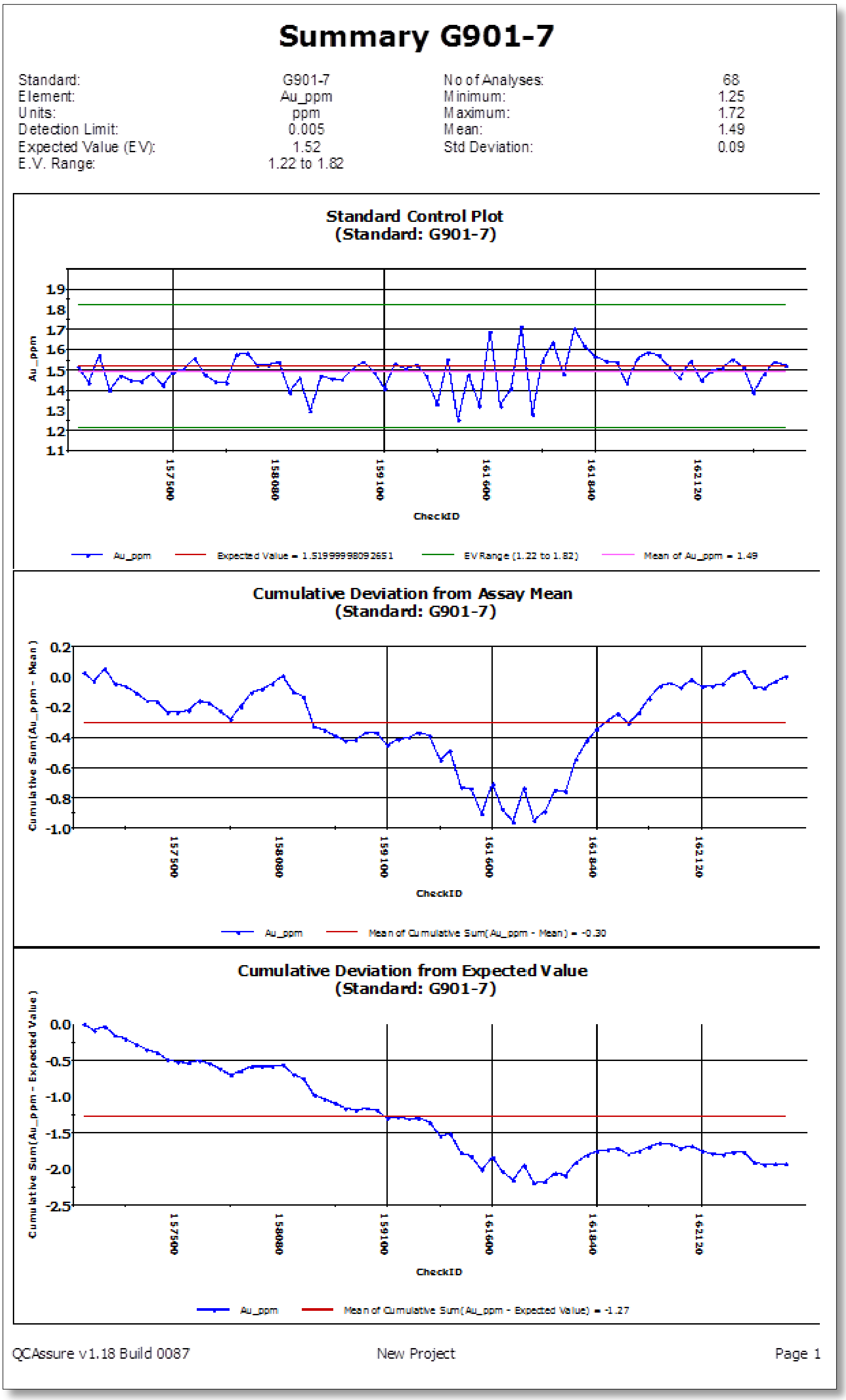

Figure 12.5 Standard G908-7

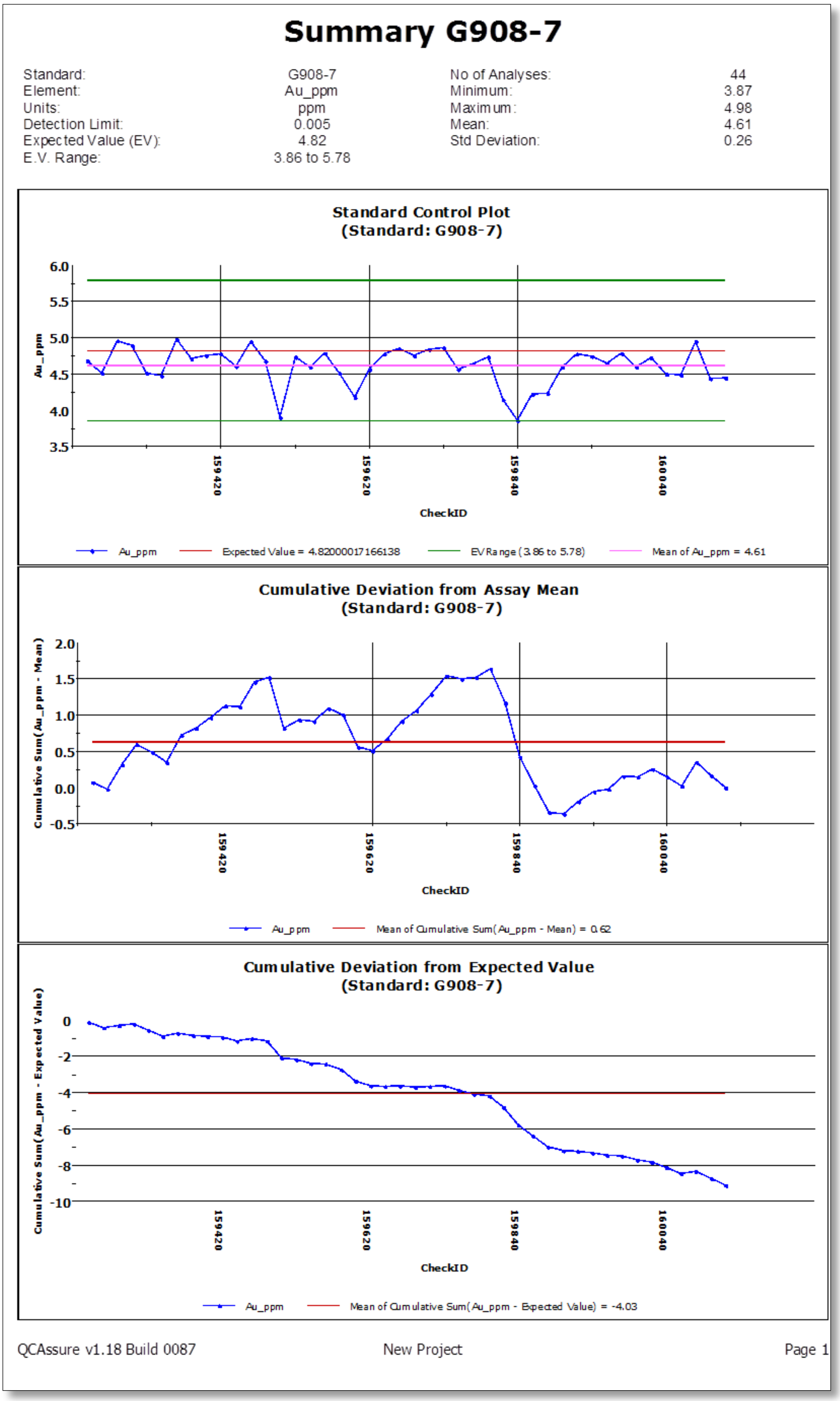

Figure 12.6 Standard G995-1

Summary G995-1

Standard:	G995-1	No of Analyses:	47
Element:	Au_ppm	Minimum:	2.51
Units:	ppm	Maximum:	3.35
Detection Limit:	0.005	Mean:	2.82
Expected Value (EV):	2.75	Std Deviation:	0.19
E.V. Range:	2.20 to 3.30		

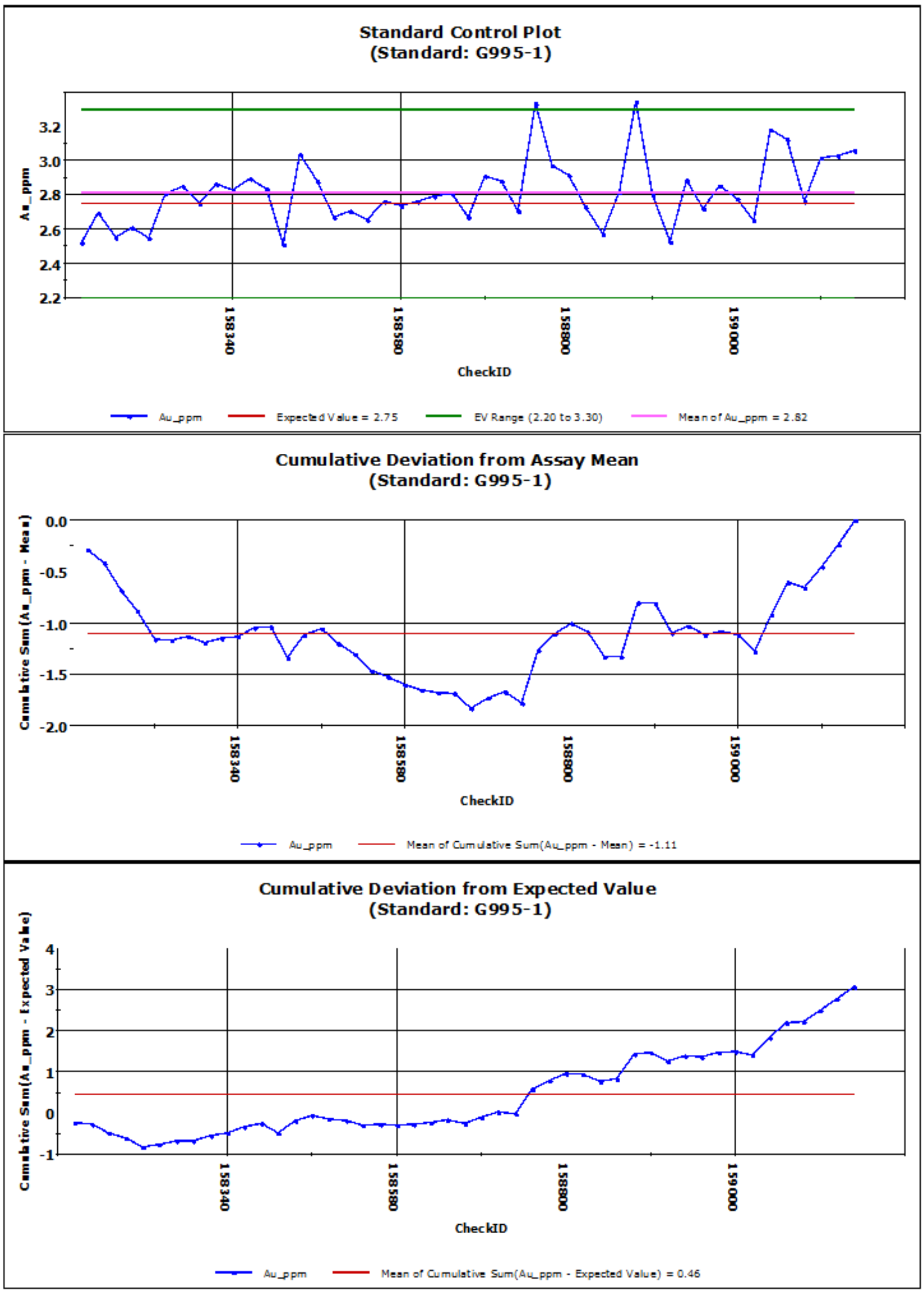

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Figure 12.7 Standard G996-4

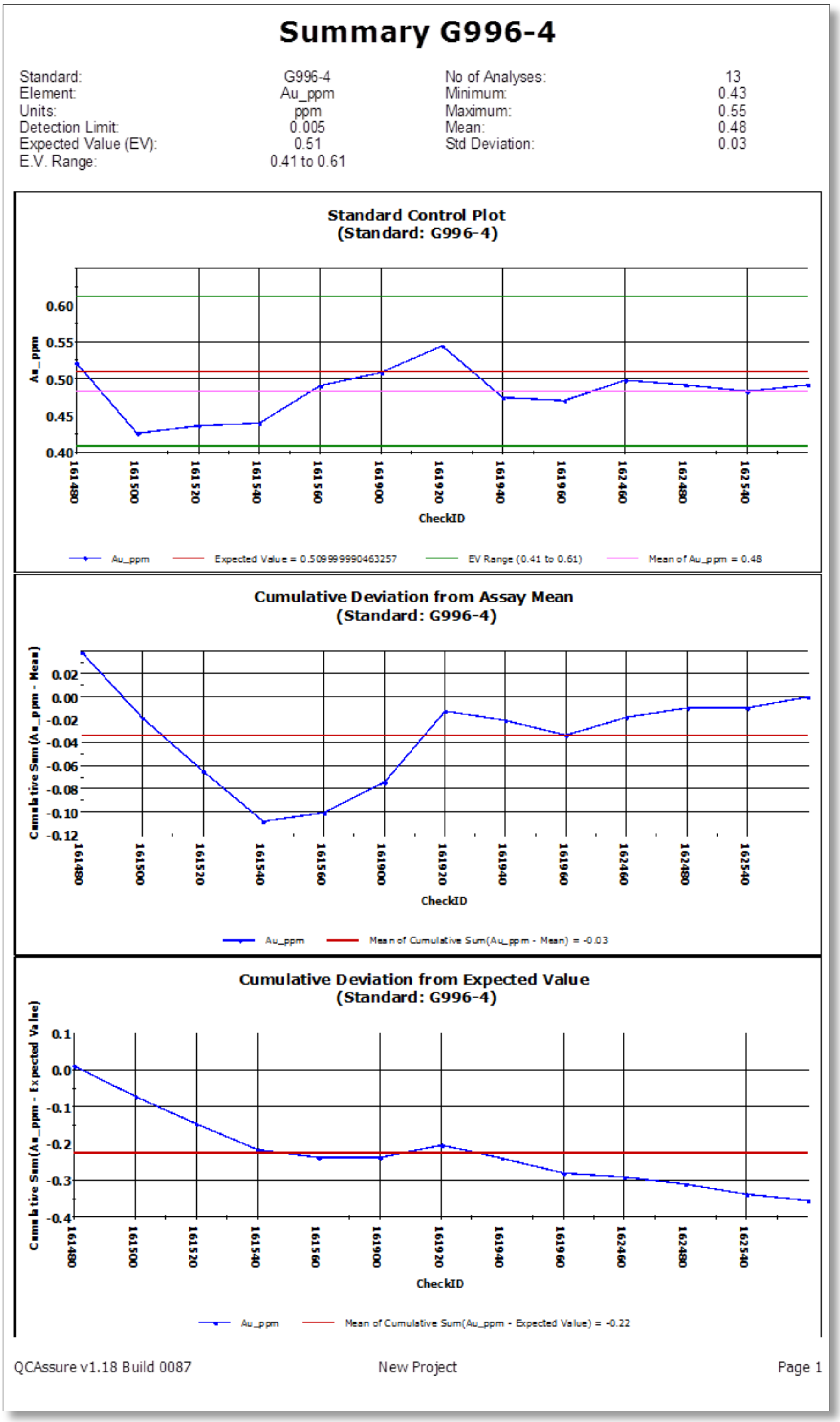


Figure 12.8 Standard GS-1P5F

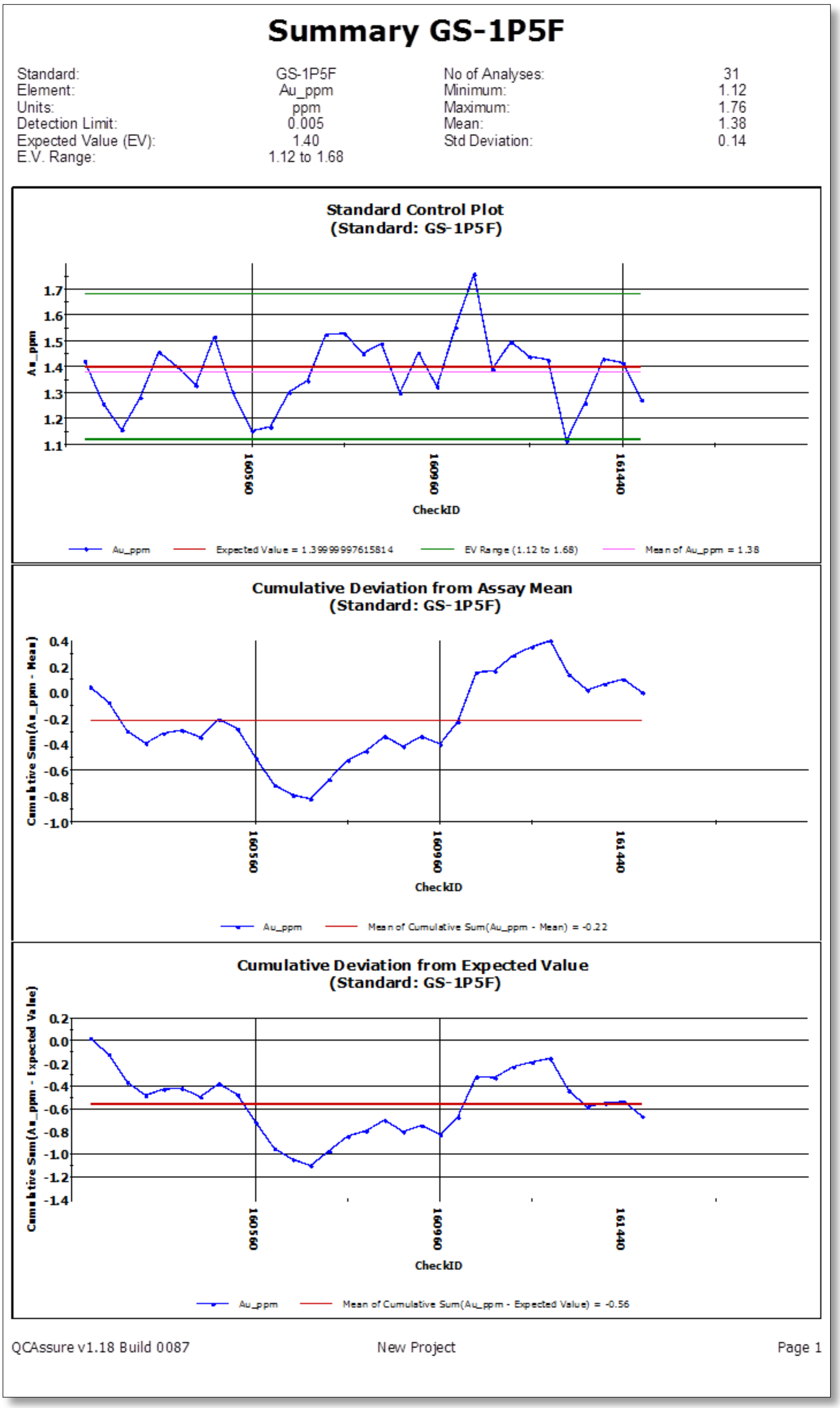


Figure 12.9 Standard GS-P7H

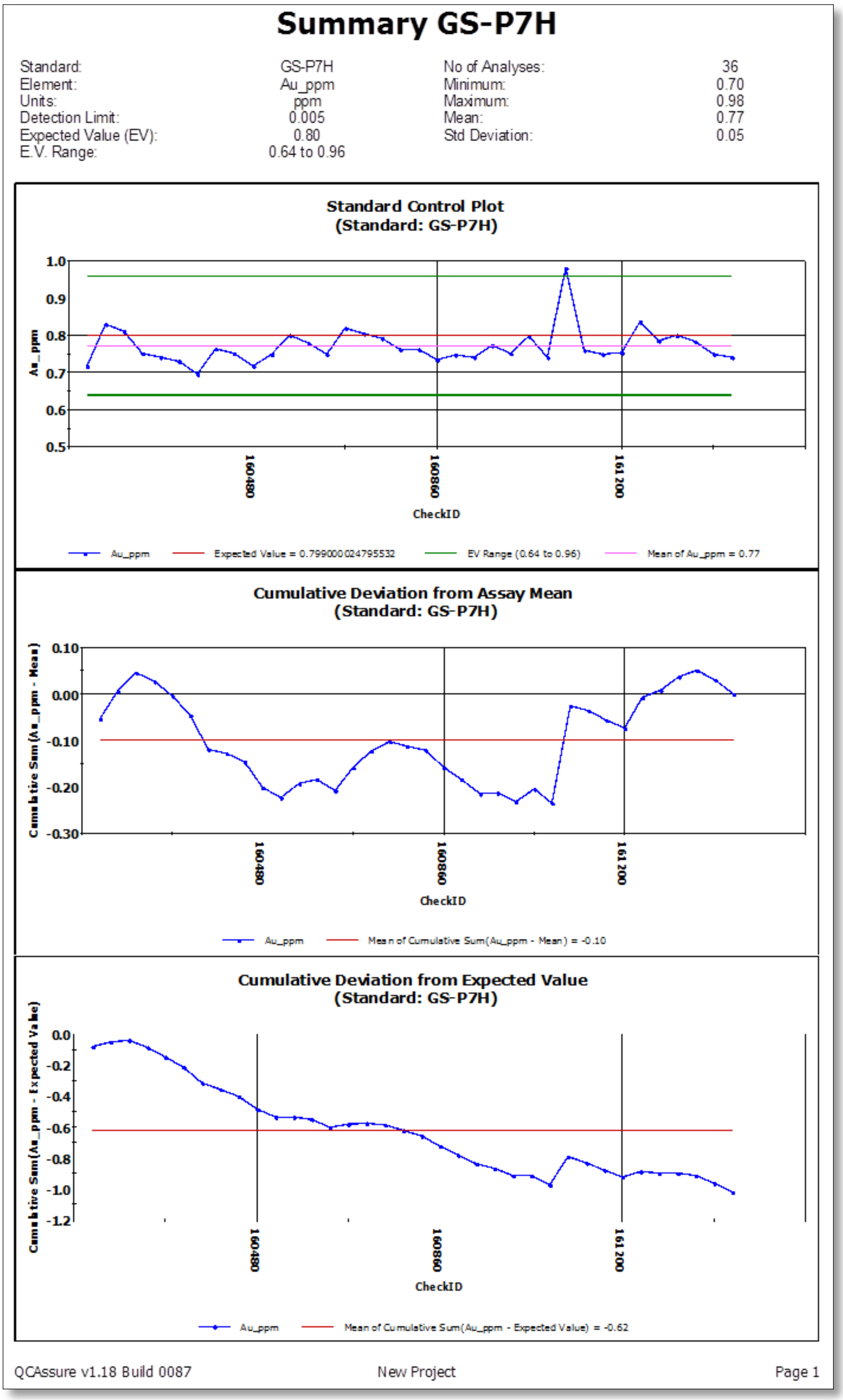


Figure 12.10 BlankWAR4

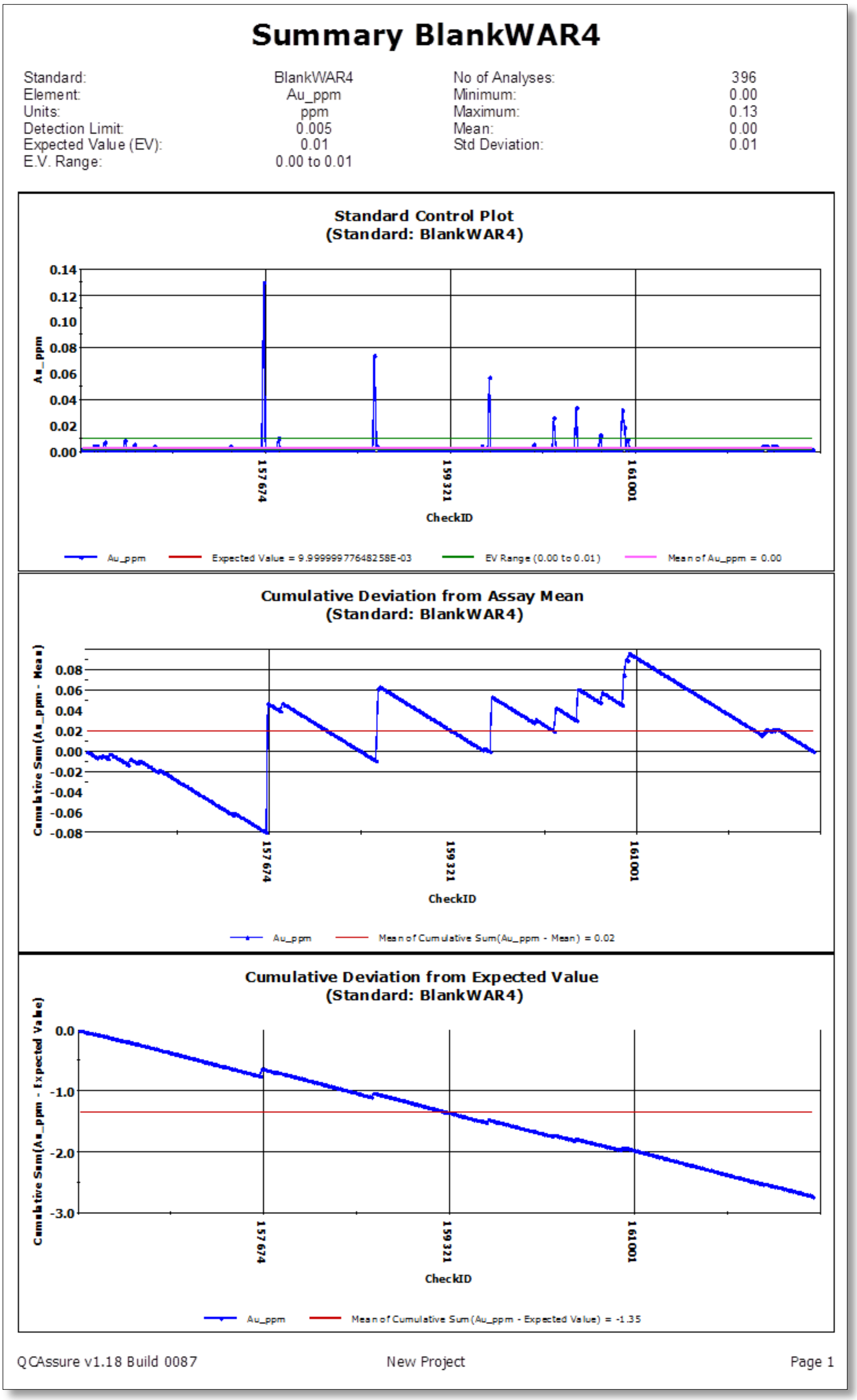
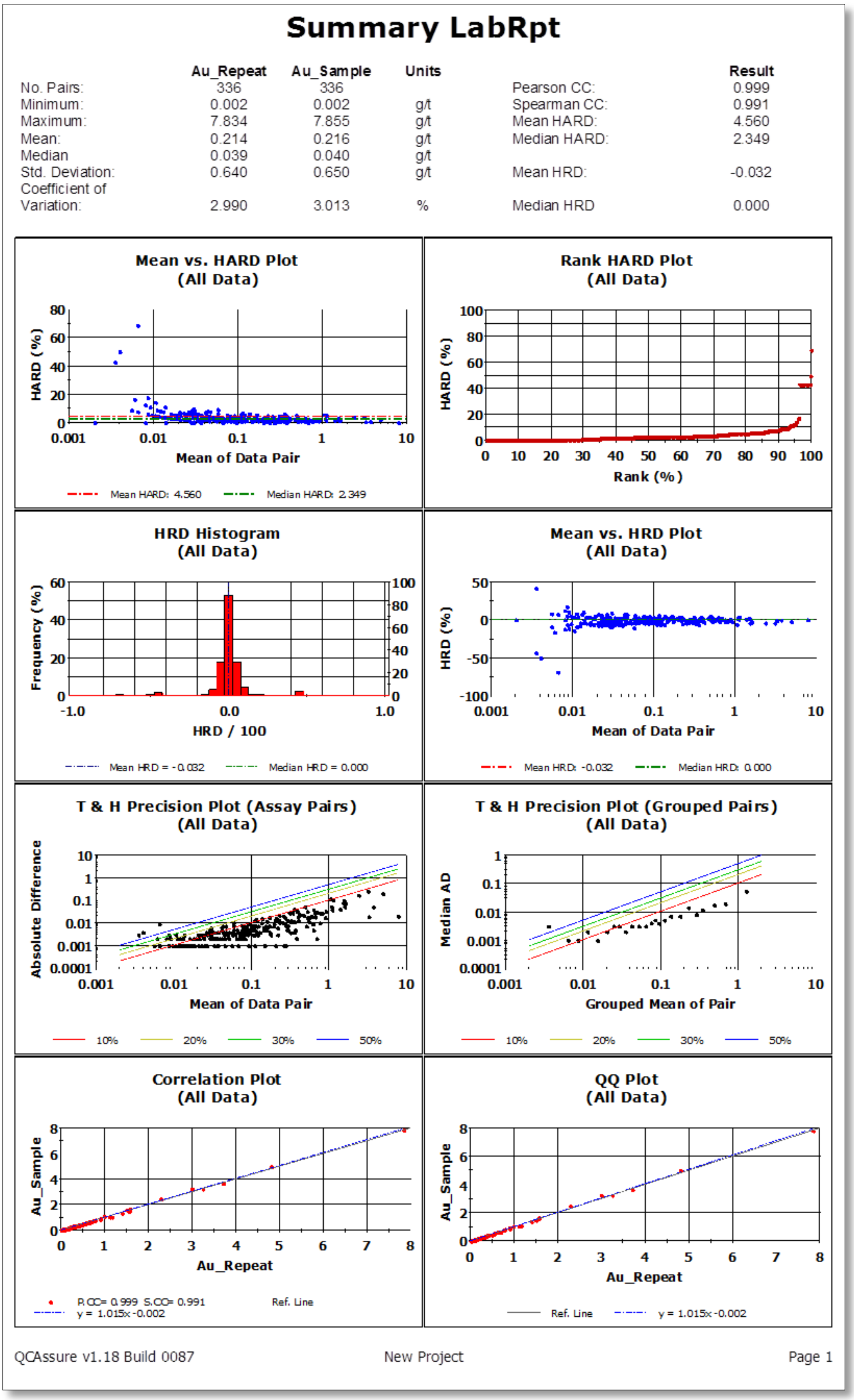


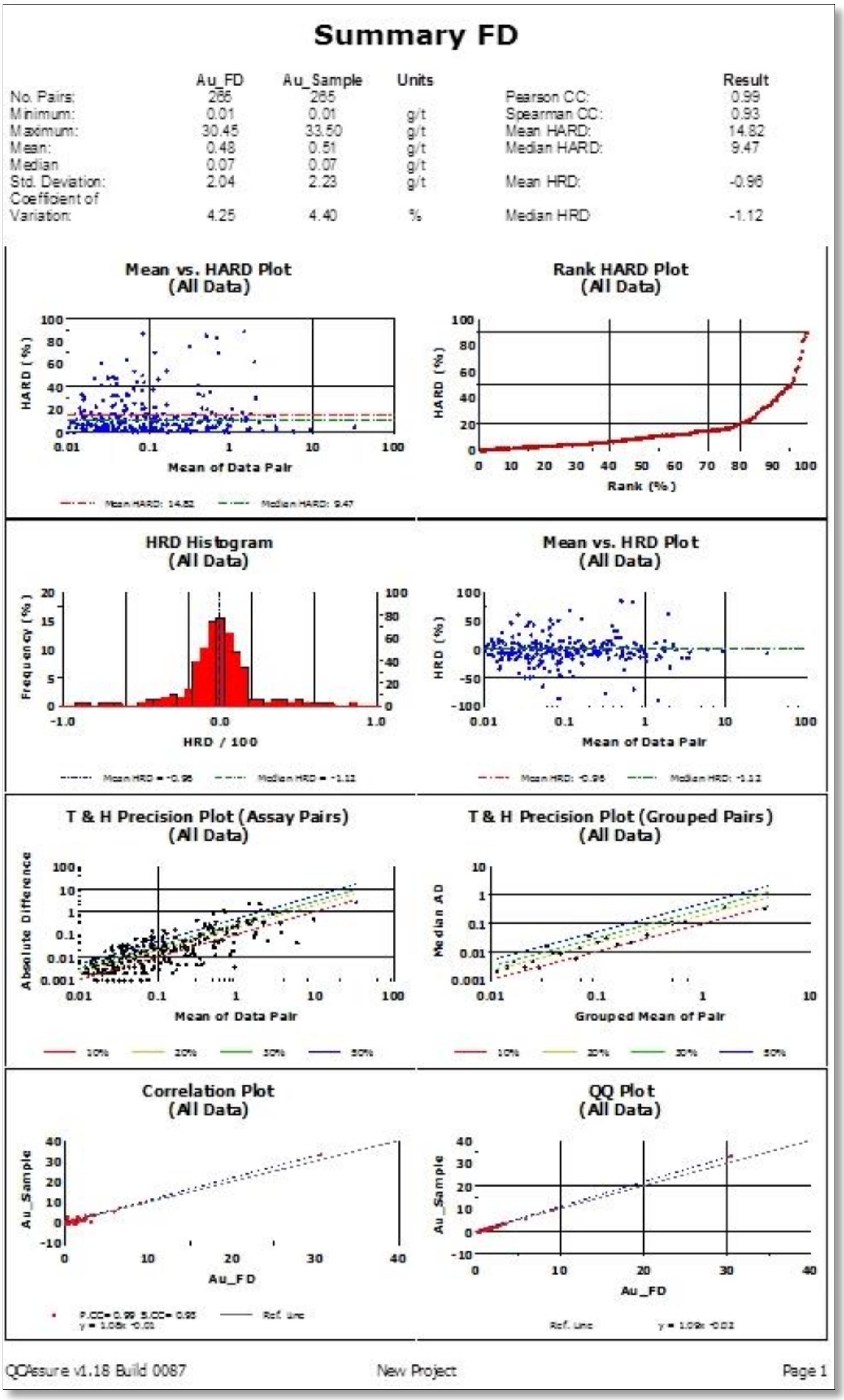
Figure 12.11 Laboratory Repeats



Summary LabRpt

	Au_Repeat	Au_Sample	Units		Result
No. Pairs:	336	336		Pearson CC:	0.999
Minimum:	0.002	0.002	g/t	Spearman CC:	0.991
Maximum:	7.834	7.855	g/t	Mean HARD:	4.560
Mean:	0.214	0.216	g/t	Median HARD:	2.349
Median	0.039	0.040	g/t		
Std. Deviation:	0.640	0.650	g/t	Mean HRD:	-0.032
Coefficient of Variation:	2.990	3.013	%	Median HRD	0.000

Figure 12.12 Field Duplicates



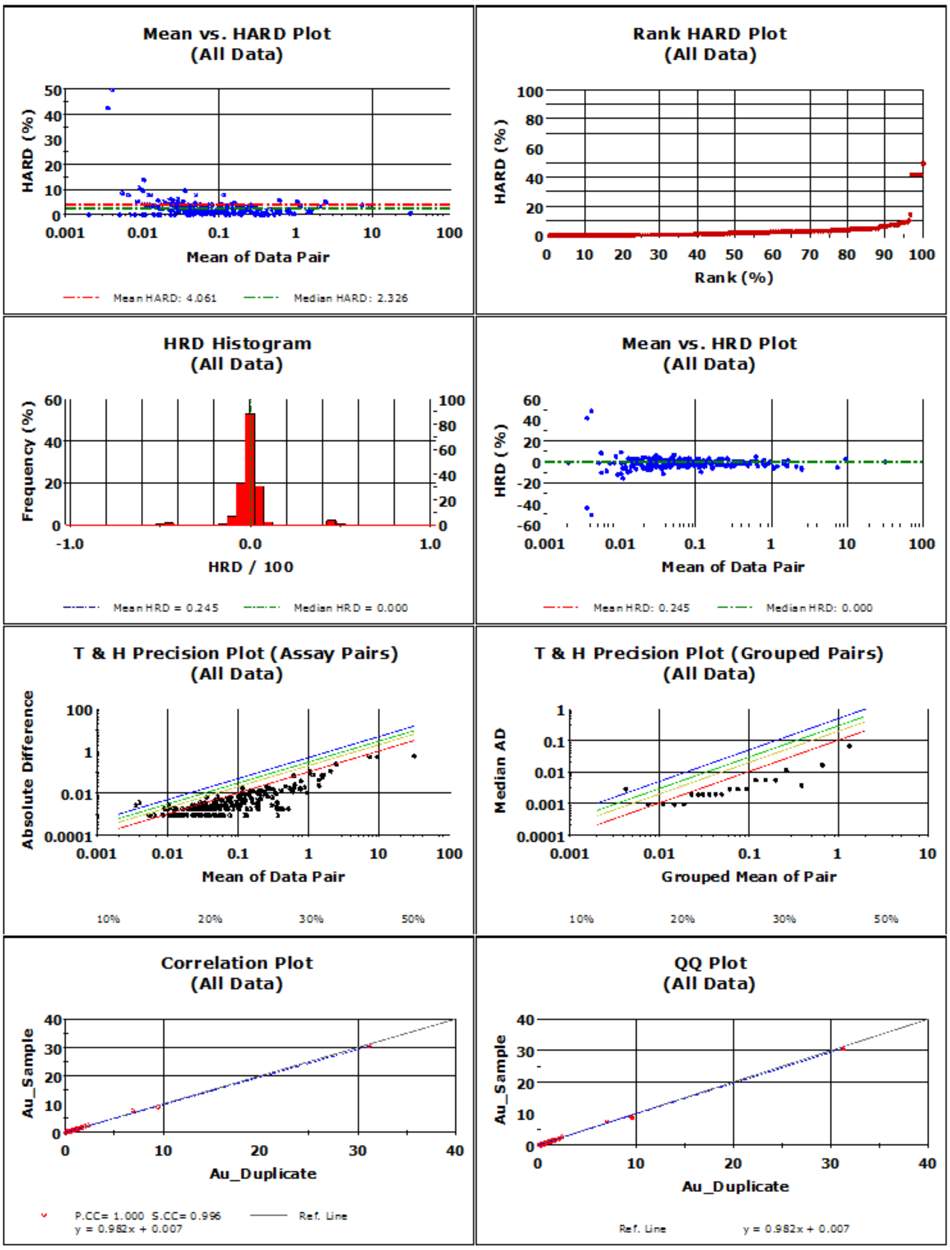
Summary FD

	Au_FD	Au_Sample	Units		Result
No. Pairs:	265	265		Pearson CC:	0.99
Minimum:	0.01	0.01	g/t	Spearman CC:	0.93
Maximum:	30.45	33.50	g/t	Mean HARD:	14.82
Mean:	0.48	0.51	g/t	Median HARD:	9.47
Median	0.07	0.07	g/t		
Std. Deviation:	2.04	2.23	g/t	Mean HRD:	-0.96
Coefficient of Variation:	4.25	4.40	%	Median HRD	-1.12

Figure 12.13 Laboratory Duplicates

Summary LabDup

	Au_Duplicate	Au_Sample	Units		Result
No. Pairs:	281	281		Pearson CC:	1.000
Minimum:	0.002	0.002	g/t	Spearman CC:	0.996
Maximum:	31.115	30.447	g/t	Mean HARD:	4.061
Mean:	0.329	0.330	g/t	Median HARD:	2.326
Median	0.035	0.036	g/t		
Std. Deviation:	1.998	1.962	g/t	Mean HRD:	0.245
Coefficient of Variation:	6.066	5.938	%	Median HRD	0.000



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13. MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

WAF is currently completing a metallurgical test work program designed to determine the heap leach processing amenability. Results to date confirm the oxidised ore types could be processed using heap leach technology whilst the weakly oxidised ores provide some potential for heap leach processing depending on grade and applicable mining costs. More detailed testing is to be progressed as the project continues to be developed.

Channel completed preliminary mineralogical and metallurgical test work at SGS Laboratories in Vancouver, BC, in 2012. This work is documented in the report authored by Smith (2012) titled "NI 43-101 Technical Report on Mineral Resources for the Mankarga 5 Gold Deposit Tanlouka Property" which is summarised below.

13.2 2012 Test Work Program

On January 30, 2012, SGS of Vancouver, BC, Canada received a shipment of 139 core samples from Channel to perform preliminary mineralogical and metallurgical test work at Tanlouka. The scope of the program included:

- Mineralogy - to investigate the liberation, association and nature of the contained gold.
- Gravity Testing - to explore the option of recovering gravity recoverable gold as a preliminary step before leaching.
- Leach Testing - which includes fine and coarse leaching kinetics to compare heap leaching amenability versus direct cyanidation for recovery of gold.
- Environmental Testing - which includes ABA (acid base accounting), NAG (net acid generation) and MWMP (meteoric water mobility procedure). The mineralogical examination of the two samples was carried out with X-ray diffraction (XRD), quantitative evaluation of materials by scanning electron microscopy (QEMSCANTM), electron microprobe analysis (EMPA) and chemical analysis. The XRD analysis of the sulphide sample consisted of quartz, plagioclase, mica, pyrite, amphibole, calcite, chlorite and trace pyrrhotite. The oxide sample consisted of quartz, plagioclase, mica and trace kaolinite and amphibole.

The analysis by QEMSCANTM was in agreement with the XRD analysis.

In terms of gold mineralogy, the average gold grade for the sulphide sample was 1.58 g/t Au with 142 gold grains identified occurring mainly as native gold and electrum with gold content averaging 86.8% in the 19 gold grains analysed. The gold particles range in size from 1 micrometre to 60 micrometres, with the highest percentage (30.5 weight%) of grains between 10 micrometres and 15 micrometres.

The oxide sample average gold grade was 1.79 g/t Au with 73 gold grains identified occurring mainly as native gold and gold content averaging 87.8% in the 14 gold grains analysed. The gold particles range in size from 1 micrometre to 60 micrometres, with the highest percentage (22.0 weight%) of grains between 2 micrometres and 5 micrometres.

Six cyanide bottle roll leach tests were conducted on both oxide and sulphide samples. The tests assessed the effects of primary grind, cyanide dosage and density at a leach time of 72 hours and maintained a pH range of 10.5 to 11. The oxide composite was able to produce a final pregnant leach solution with recoveries ranging from 92.9% to 95.3%.

For the sulphide composite, leaching by cyanidation was able to produce a final pregnant solution with recoveries ranging from 84.7% to 92.3%.

Channel also conducted coarse feed size heap leach amenability cyanidation test work. Samples weighing approximately 5kg of 3/8 inch and ¾ inch whole ore were used. The samples were leached for eight days at 50% solids, maintaining a cyanide concentration of 1.0 g/L and a pH environment of 10.5 to 11. The samples were rolled (wetted) for one minute every hour at 22 rpm. Intermittent solution samples were analysed for gold. The residue was screened into size fractions and each fraction analysed for gold. The coarse whole ore leach tests showed the following results:

- The sulphide sample demonstrated poor recovery with recoveries of 30.1% for the $^3/_8$ inch sample and 16.6% for the ¾ inch sample.
- The oxide sample demonstrated good recovery with recoveries of 79.1% for the $^3/_8$ inch sample and 51.1% for the ¾ inch sample.

13.3 2014 Test work Program

A testwork program was developed to investigate the amenability of the Tanlouka Mankarga 5 Prospect to heap leaching processing.

The testwork is currently being carried out at ALS Global in Perth on four metallurgical holes which were drilled at various locations in the Mankarga 5 deposit by WAF (West African Resources, 2014).

In total, 1.6 tonnes of whole core was shipped to ALS Global for metallurgical test work including:

- Coarse feed intermittent bottle rolls (IBR) at 100% passing 6.25mm and 12.5mm crush sizes, to determine suitability of oxide ore to heap leach processing.
- Direct cyanidation bottle rolls at P80 100 µm of all ore types.
- Size by size gold analysis on IBR residue.
- Percolation rate test work.
- Agglomeration test work.
- Column cyanidation leach test work.

13.4 Samples

Four NQ drill holes were located to represent those areas of the Mankarga 5 Prospect where most of the tonnes and associated gold ounces we considered to reside. The locations of the holes are summarised by Table 13.1 below.

Table 13.1 Metallurgical Sample Drill Hole Locations

Hole ID	Drill Hole Type	Easting (UTM)	Northing (UTM)
TANMET001	NQ	743179	1337344
TANMET002	NQ	743352	1337473
TANMET003	NQ	743000	1337095
TANMET004	NQ	742630	1336680

To retain the maximum mass of core the sample was sent to ALS complete without assay.

The geological logging of the core included a grade estimate as a function of the mineralisation based on historical experience and observation. Grade ranges were limited to high, medium, low and very low (waste).

On receipt the samples were dried, weighed and crushed to nominally 19.5 mm. The samples were grouped as a function of anticipated head grade ranges as well as the oxidation state of the core. Oxidation states logged were:

- SOX - Saprolite, being totally oxidised showing little or no primary rock texture. Complete oxidation of all primary minerals.
- MOX - Moderately oxidised. This material shows some primary rock texture, total oxidation of feldspar to clay, and total oxidation of sulphides.

- WOX - Weakly oxidised. Material showing strong primary rock textures, partial oxidation of feldspars to clay, partial oxidation of sulphides (often showing iron oxide staining).
- FRS - Fresh ore - no oxidation present.

In general three metre intervals were combined to make a series of short range composites, some 25 to 32 of these were prepared per metallurgical drill hole.

In some instances one or two metre composites were generated instead of three metre composites for reasons of a change of oxidation state or possible significant changes in head grade. In these cases it was decided that the shorter range characteristics needed to be understood in place of blending out these characteristics with a larger three metre composite length.

Sub-samples were split and sent for head assay for each of the short range composites. Additional splits were taken for select comminution tests which required sample at the coarse crush size of 19.5 mm.

Additional sample preparation included crushing to nominal 12.5 mm, 6.5 mm and 3.35 mm sizes in preparation for intermittent coarse bottle roll tests and additional comminution testing.

13.5 Results

Head assays for the 110 sub-composites were determined for gold. Select random check assays were also undertaken with acceptable repeatability. Head assay results are summarised in Table 13.2 below.

Table 13.2 Summary of sub-composite head assays.

Sample ID	Au (ppm)	Sample ID	Au (ppm)	Sample ID	Au (ppm)	Sample ID	Au (ppm)
Met 1 - 1	0.16	Met 2 - 1	0.52	Met 3 - 1	0.08	Met 4 - 1	4.12
Met 1 - 2	0.64	Met 2 - 2	0.26	Met 3 - 2	1.16	Met 4 - 2	4.06
Met 1 - 3	0.18	Met 2 - 3	0.64	Met 3 - 3	1.26	Met 4 - 3	0.58
Met 1 - 4	3.04	Met 2 - 4	0.16	Met 3 - 4	0.06	Met 4 - 4	0.26
Met 1 - 5	0.48	Met 2 - 5	0.16	Met 3 - 5	2.40	Met 4 - 5	0.40
Met 1 - 6	1.00	Met 2 - 6	0.10	Met 3 - 6	0.30	Met 4 - 6	0.44
Met 1 - 7	1.96	Met 2 - 7	0.04	Met 3 - 7	0.16	Met 4 - 7	0.24
Met 1 - 8	2.12	Met 2 - 8	1.48	Met 3 - 8	0.70	Met 4 - 8	0.90
Met 1 - 9	0.18	Met 2 - 9	0.62	Met 3 - 9	1.36	Met 4 - 9	0.10
Met 1 - 10	0.04	Met 2 - 10	0.14	Met 3 - 10	0.92	Met 4 - 10	0.18
Met 1 - 11	0.88	Met 2 - 11	0.34	Met 3 - 11	0.54	Met 4 - 11	0.22
Met 1 - 12	0.28	Met 2 - 12	1.24	Met 3 - 12	0.52	Met 4 - 12	0.06
Met 1 - 13	0.24	Met 2 - 13	1.10	Met 3 - 13	0.22	Met 4 - 13	0.12
Met 1 - 14	5.08	Met 2 - 14	0.26	Met 3 - 14	0.68	Met 4 - 14	0.20
Met 1 - 15	2.38	Met 2 - 15	0.26	Met 3 - 15	1.96	Met 4 - 15	0.26
Met 1 - 16a	0.58	Met 2 - 16a	2.52	Met 3 - 16	1.34	Met 4 - 16a	0.38
Met 1 - 16b	0.40	Met 2 - 16b	0.24	Met 3 - 17	1.20	Met 4 - 16b	0.30
Met 1 - 17	0.78	Met 2 - 17	0.12	Met 3 - 18	1.78	Met 4 - 17	1.24
Met 1 - 18	1.34	Met 2 - 18	<0.02	Met 3 - 19	3.30	Met 4 - 18	0.68
Met 1 - 19	1.58	Met 2 - 19	<0.02	Met 3 - 20	1.84	Met 4 - 19	0.34
Met 1 - 20	1.20	Met 2 - 20	0.04	Met 3 - 21	1.14	Met 4 - 20	0.44
Met 1 - 21	0.34	Met 2 - 21	<0.02	Met 3 - 22	2.14	Met 4 - 21	1.28
Met 1 - 22	1.44	Met 2 - 22	0.74	Met 3 - 23	1.08	Met 4 - 22	0.34
Met 1 - 23	0.52	Met 2 - 23	0.66	Met 3 - 24	2.42	Met 4 - 23	0.34
Met 1 - 24	1.28	Met 2 - 24	0.56	Met 3 - 25	0.96	Met 4 - 24	0.38
Met 1 - 25	0.82	Met 2 - 25	0.06	Met 3 - 26	1.12	Met 4 - 25	0.36
				Met 3 - 27	0.76		
				Met 3 - 28	0.08		
				Met 3 - 29	0.10		
				Met 3 - 30	3.40		
				Met 3 - 31	1.00		
				Met 3 - 32	2.72		

Contiguous sub-composites were then combined to generate ten composites to be subjected to leaching testwork. The ten composites represented the different oxidation conditions of the ore from the different metallurgical drill holes. Composites were identified by the metallurgical drill hole number from which the original intervals came from and a letter to designate the sequence of oxidation. Table 13.3 below summarises the composites, oxidation state represented and the corresponding head assays.

Table 13.3 Composite Details

Composite	Head Assay Au g/t	Oxidation
1A	1.17	MOX
1B	0.90	WOX
1C	1.36	FRS
2A	0.80	MOX
3A	0.92	SOX
3B	1.15	MOX
3C	0.87	WOX
3D	1.84	FRS
4A	2.78	SOX
4C	0.97	FRS

The ten composites were subjected to various intermittent bottle roll leaching tests at two different crush sizes as well as a conventional bottle roll test at a grind size of nominally 80% passing 100 µm.

Four of the composites were leached a crush size of 100% passing 12.5 mm and at 100% passing 6.25 mm as well as subjected to bottle rolls. The other six were only subjected to intermittent bottle roll tests at 100% passing 6.25 mm and conventional bottle roll tests with the exception of composite 4A. This composite was only subjected to intermittent bottle roll tests to conserve sample.

The intermittent bottle roll tests provide a first pass assessment of the potential application of heap leaching techniques. The use of two different crush sizes gives and indication of the liberation characteristics at what would be considered a moderate/fine crush size of nominally 12.5 mm and what would be considered a fine crush size of 6.25 mm.

The conventional bottle roll tests highlights the sensitivity the composites have to grinding and agitated tank leach (akin to CIL or CIP processing) as well as to establish if the ores have any refractory behaviour.

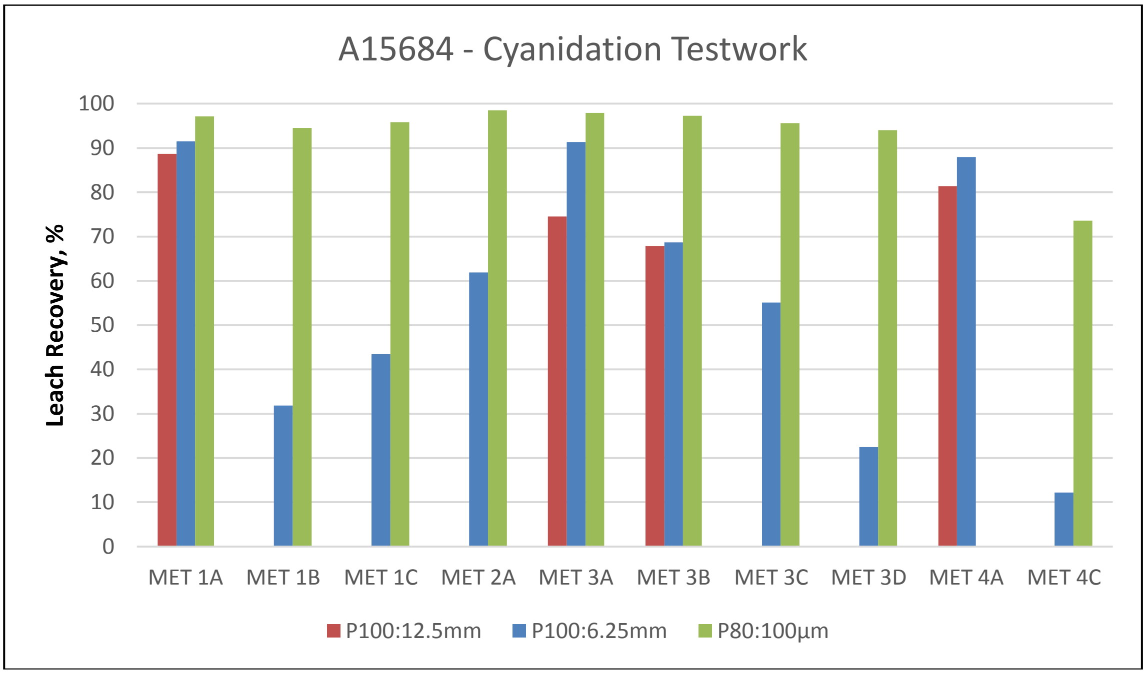
Table 13.4 below presents a summary of the leach results at the various crush and grind sizes and Figure 13.1 presents the data by way of comparable bar charts. Of note is that the tests all show low sodium cyanide consumption but moderate to high quicklime (lime) consumption.

Table 13.4 Summary of Leach Results (Intermittent Bottle Rolls and Conventional Leach)								
Sample Identity	**Oxidation**	**Test No.**	**Crush/Grind Size (mm)**	**Overall % Gold Extraction**	**Calc'd Head Au (ppm)**	**Leach Residue Au (g/t)**	**Consumption (kg/t)**	
							NaCN	**Lime**
MET 1A	MOX	JS3391	0.10	97.13	1.74	0.05	0.26	1.96
	MOX	JS3380	6.25	91.48	1.17	0.10	0.30	2.44
	MOX	JS3375	12.5	88.68	1.06	0.12	0.33	2.53
MET 1B	WOX	JS3392	0.10	94.51	1.09	0.06	0.40	0.56
	WOX	JS3381	6.25	31.86	0.90	0.62	0.44	0.87
MET 1C	FRS	JS3393	0.10	95.79	1.19	0.05	0.25	0.36
	FRS	JS3382	6.25	43.44	1.36	0.77	0.39	0.26
MET 2A	MOX	JS3394	0.10	98.46	0.65	0.01	0.25	1.45
	MOX	JS3383	6.25	61.89	0.80	0.31	0.37	1.89
MET 3A	SOX	JS3395	0.10	97.88	0.94	0.02	0.30	3.23
	SOX	JS3384	6.25	91.34	0.92	0.08	0.33	3.83
	SOX	JS3376	12.5	74.53	1.02	0.26	0.40	3.68
MET 3B	MOX	JS3396	0.10	97.27	1.10	0.03	0.30	1.49
	MOX	JS3385	6.25	68.70	1.15	0.36	0.37	1.78
	MOX	JS3377	12.5	67.85	0.96	0.31	0.33	1.46
MET 3C	WOX	JS3397	0.10	95.58	1.36	0.06	0.23	1.15
	WOX	JS3386	6.25	55.08	0.87	0.39	0.30	1.49
MET 3D	FRS	JS3398	0.10	93.98	1.00	0.06	0.25	0.35
	FRS	JS3387	6.25	22.48	1.84	1.43	0.29	0.52
MET 4A	SOX	JS3388	6.25	87.94	2.78	0.34	0.37	3.57
	SOX	JS3378	12.5	81.38	2.42	0.45	0.33	3.84
MET 4C	FRS	JS3399	0.10	73.58	0.83	0.22	0.29	0.45
	FRS	JS3390	6.25	12.20	0.97	0.85	0.29	0.25

The SOX samples 3A and 4A show high extractions even at the coarser crush size. At the other end of the oxidation state, the FRS samples (1C, 3D and 4C) show poor extraction unless the sample is ground to the nominal 100 µm and subjected to agitated leach. WOX samples 1B and 3C present high extractions for the ground material and again poor extractions for the crush/intermittent bottle roll tests. MOX samples 1A, 2A and 3B show moderate leach extractions for the crushed/intermittent bottle roll tests but as per the other samples, high leach extractions when the sample is ground.

In summary, the material represented by these samples is considered non-refractory and presents low sodium cyanide consumption suggesting the material is amenable to conventional processing techniques. However, it is only the more heavily oxidised material that is suited to heap leaching techniques. This does not suggest that the WOX and FRS material cannot be heap leached, but the economics may dictate that it would typically only be material of these types mined as a consequence of the mining of the SOX and MOX materials that would be subjected to heap leaching. WOX and FRS are more suited to grind/leach than heap leaching.

Figure 13.1 Summary of Leach Results (Intermittent Bottle Rolls and Conventional Leach)



An important observation regarding the intermittent bottle roll tests is that most of the samples were still leaching at the time the tests were stopped whereas the ground and agitated leached samples were in most cost completed in 8 to 24 hours. A selection of leach kinetic graphs are presented below for a selection of the composites as Figure 13.2.

Figure 13.2 Crush Size Sensitivity - Intermittent Bottle Roll

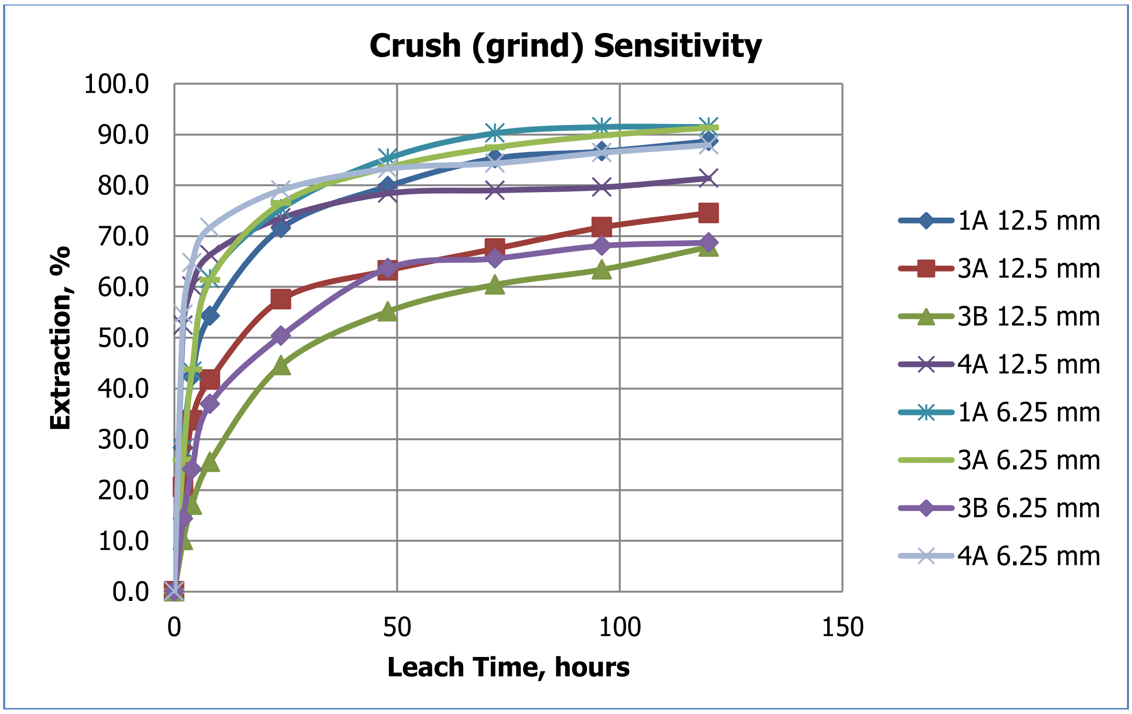


Figure 13.2 shows the sensitivity to crush size. It can be see that the same sample prepared with the finer crush provides a higher extraction in a given time. However, there is a general trend that the coarser crush samples have steeper leach curves at around +80 hours than the 6.25 mm samples suggesting there is still significant leaching to be achieved with longer leach times. Even the 6.25 mm crushed samples are showing trends of additional extraction possible (positive gradient) over what was achieved at 120 hours.

These intermittent bottle roll tests are often used to provide indication of ultimate heap leach extraction. However the plots are showing that higher extraction should be possible with extended leach times.

Figure 13.3 Oxidised Sample Data- 6.25 mm crush - Intermittent Bottle Roll

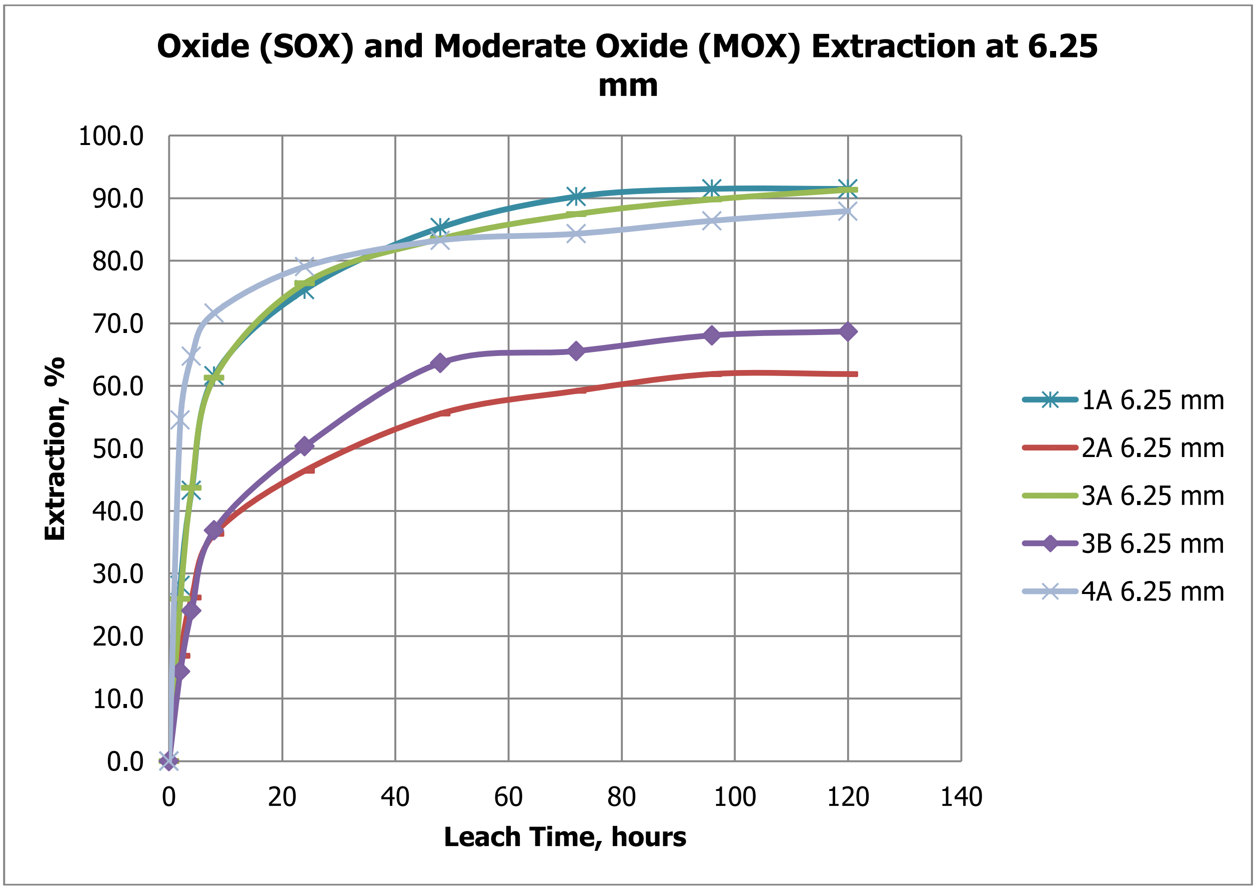


Figure 13.3 shows the totally oxidised (SOX) and moderately oxidised (MOX) sample results at the 6.25 mm crush. Table 13.6 presents the 120 hour summary and the comparative head and residue grades for clarity.

Table 13.5 Summary SOX and MOX Data - 6.25 mm crush Intermittent Bottle Roll				
Sample	**Head**	**Residue**	**Extn**	**Oxidation**
3A	0.92	0.08	91%	SOX
4A	2.78	0.34	88%	SOX
1A	1.17	0.10	91%	MOX
2A	0.80	0.31	62%	MOX
3B	1.15	0.36	69%	MOX

Of note the high grade SOX sample 4A has presented a residue higher than may be anticipated. This could be a function of the head grade itself, noted as high, or some encapsulation of gold bearing minerals such that oxidation is not complete. It could also simply be some coarse gold present which would elevate the head grade and results in a longer flat leach profile due to the coarser particle(s) not leaching to completion. The leach curve does present this longer flat leach profile.

Sample 1A (MOX) has provided a much higher leach extraction that the other MOX samples and this corresponds to a low residue. The level of oxidation of the gold bearing mineralisation will be the driver with regard to leach extraction. Whilst the host lithology might be moderately oxidised, the mineralisation itself may have a higher degree of oxidation allowing for good leach recovery.

Figure 13.4 shows the leach behaviour for the weakly oxidised (WOX) and fresh ore types (FRS). Whilst lower extractions were achieved at the final test time of 120 hours, the leaching curves still present moderate gradients suggesting leaching was far from complete. Of note is the linear tails on the leach curves retaining positive gradient. This suggests the leaching is being controlled by diffusion into the particle and out again, and that the gold, whilst not fully liberated, is still present and providing surface for leaching. High extractions may not be achievable but the results suggest ores such as the WOX material may provide acceptable returns if subjected to long leach times. Table 13.5 presents the 120 hour leach data for clarity.

Figure 13.4 Weakly Oxidised (WOX) and Fresh Ore Type Leaching Behaviour - 6.25 mm crush - Intermittent Bottle Roll

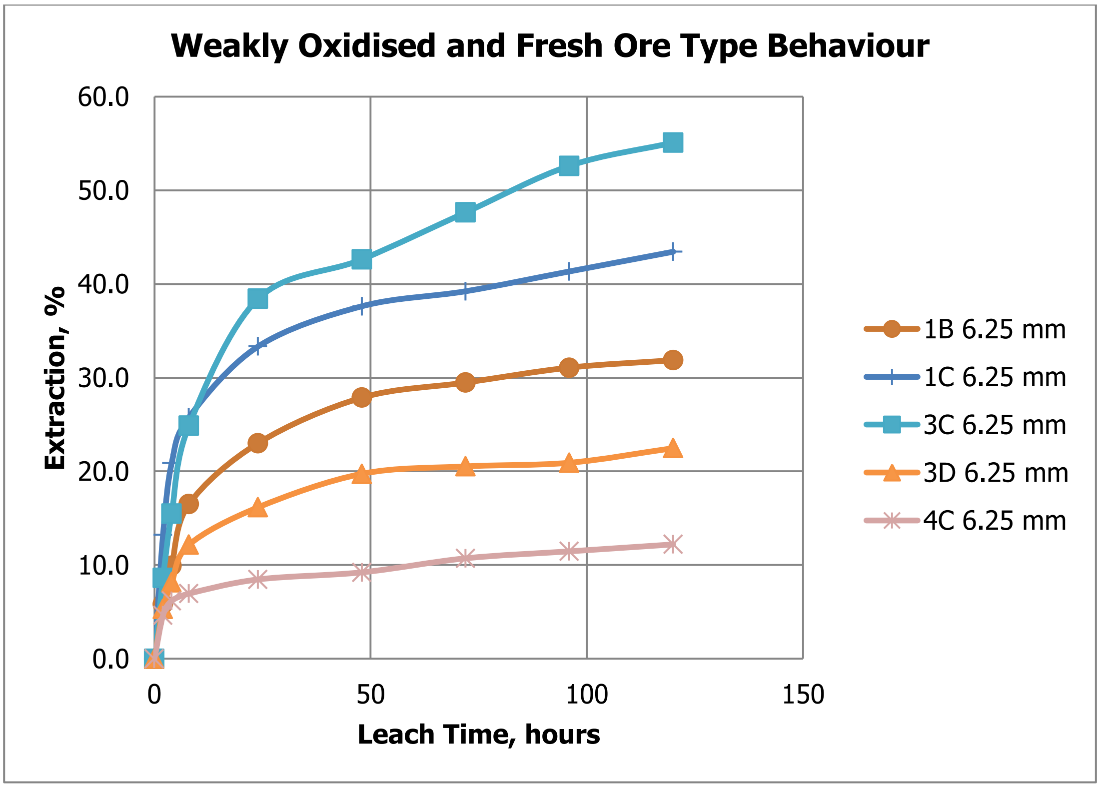


Table 13.6 Summary WOX and FRS Data - 6.25 mm crush - Intermittent Bottle Roll				
Sample	**Head**	**Residue**	**Extn**	**Oxidation**
1B	0.90	0.62	32%	WOX
3C	0.87	0.39	55%	WOX
1C	1.36	0.77	43%	FRS
3D	1.84	1.43	22%	FRS
4C	0.97	0.85	12%	FRS

These intermittent bottle roll tests suggest:

- Oxide and moderately oxidised samples are amenable to heap leaching processes.
- Reagent consumptions are low.
- A crush size of nominally 6 mm will be required to maintain leach kinetics and extractions.
- The ores do not show refractory behaviour. Low extractions of the less oxidised and fresh samples is due to liberation and not refractory behaviour, as has been shown by the fine grind leach tests.
- Column leaching tests for SOX material could be carried out at the coarser crush, and for materials handling reasons this would be preferred.
- The MOX material should be crushed to the finer 6.25 mm size for column testing.
- WOX ore types are potentially economic ore types for heap leaching.

13.6 Percolation and Agglomeration

A series of percolation and agglomeration tests were carried out on the SOX and MOX samples in preparation for column leach testing. Table 13.7 provides a summary of the results.

Table 13.7 Agglomeration and Percolation Rates						
Sample	**Crush**	**Cement kg/t**	**Slump %**	**Pellet Quality**	**pH of drainage**	**Percolation L/m2/h**
SOX	12.5	5	9.8	Fail	9.75	1,300
SOX	12.5	7	5.3	Fair	9.48	18,750
SOX	12.5	10	0	Good	9.55	21,500
MOX	12.5	5	8.9	Good	9.55	27,000
MOX	6.25	5	7	Good	9.75	20,350

The SOX sample requires +5kg/t of cement for adequate agglomeration whilst the MOX sample presented good characteristics at 5 kg/t.

The 10 kg/t cement addition to the SOX material provided very good agglomerates and zero slump suggesting 10 kg/t is in excess of what would be required. However, due to the pH of the drainage not being overly high it was deemed appropriate that a 10 kg/t cement addition be utilized for assessing SOX performance in column leaching.

13.7 Column Tests

Three 140 mm diameter column tests have been initiated and were in progress at the time of writing. One column containing SOX at 100% passing 12.5 mm crush at a cement dose of 10 kg/t. Two containing MOX at 100% passing 12.5 and 6.25 mm respectively at 5 kg/t cement addition. Initial indications are good in that percolation rates are high and the initial grades of each solutions are as would be anticipated.

These results cannot be confirmed until the columns are completed and the final residues are analysed to provide a metallurgical balance.

13.8 Abrasion Index and Ball Mill Work Index

Abrasion indices (Ai) and Ball Mill Work Indices (BWI) were determined for the MOX and FRS samples.

The MOX values can be expected to be higher than the SOX material whilst the FRS results higher than the other three ore types as the FRS composition has not been compromised by oxidation.

The results are summarised in Table 13.8 below.

Table 13.8 Abrasion and Ball Mill Work Index

Sample	Abrasion Index	Ball Mill Work Index kWh/t (at 106 µm closing size).
Moderately oxidised (MOX)	0.0071	7.9
Fresh (FRS)	0.0997	11.9

Both samples provided very low Abrasion and Ball Mill Work Indices. This suggests that the all ore types will be able to be processed with conventional comminution devices and that the wear rates and power consumption associated with such processing will be low to very low by industry standards.

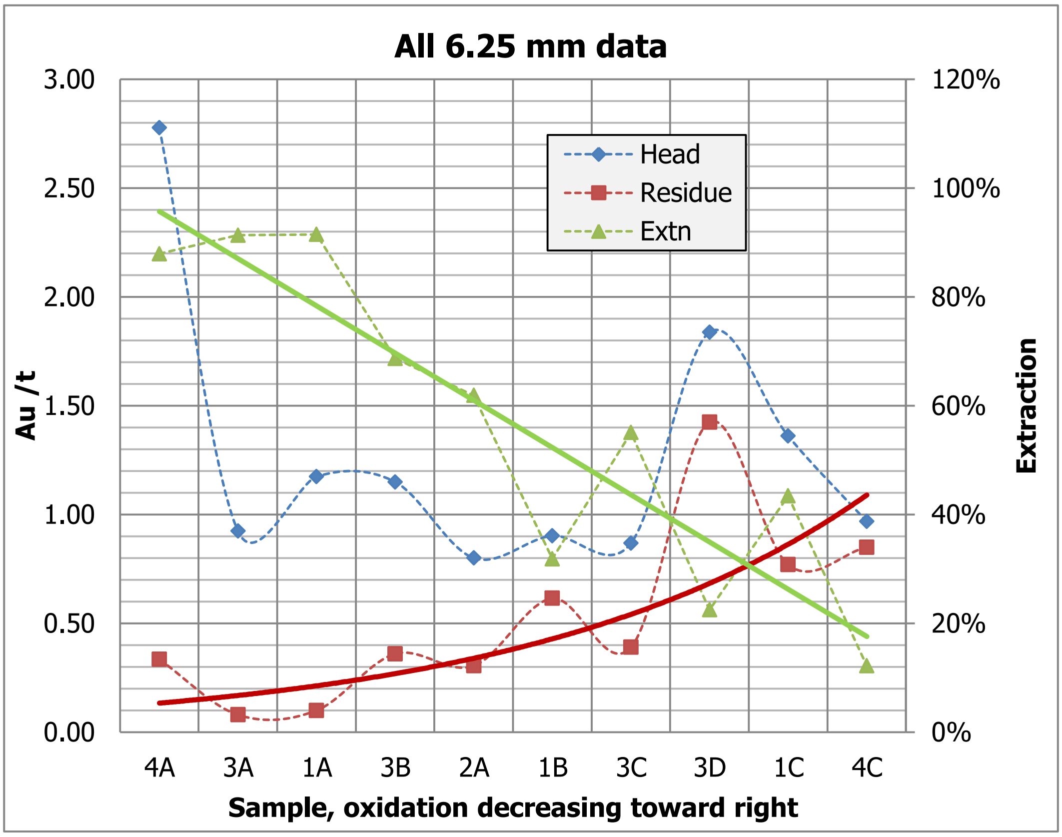
13.9 Extraction Behaviour

The existing data set regarding extraction is limited to a number of composites and two test work programs, one of which is to be completed. What can be noted is that the results of the two test work programs have provided similar outcomes in broad terms with regard to amenability of the ores to cyanidation and a sensitivity to liberation in that the less oxidised ore types require fine grinding to offer high leach extractions.

The data available is not definitive yet some observations can be made over the previously noted sensitivity to sample oxidation. Also the use of a "percentage extraction" as a measure of success requires some consideration. Percent extraction uses the head and residue grades to provide the percentage value. This means the outcome is a function of the head grade (and residue grade). The outcome can therefore be confusing when samples of the same oxidation characteristics but at differing head grades are compared. They may leach identically to provide the same residue, but the percentage extraction value will differ. Consequently the residue grade and status of the leaching needs to be considered.

Figure 13.5 below presents the head grade, residue grade and leach extraction as a percentage for each of the composites. The degree of oxidation is highest on the left (SOX) grading to fresh samples (FRS) to the right. The highest head grade of each composite type is presented first and grade diminishes to the right along the x-axis.

Figure 13.5 Intermittent Bottle Roll Data all 6.25 mm Composites



There are a number of general trends which are to be anticipated:

- As oxidation increases the residue grades decrease.
- The percentage extraction increases as the oxidation increases.

In addition it could be noted:

- Head grade at times confuses direct comparison of performance.
- Some composites do not comply with the anticipated pattern.

Sample 4A (SOX) and 3D (FRS) are the composites that most obviously deviate from the general trends. Sample 4A has been commented upon above. The leach curve for this composite suggested more leaching would occur and this in part could explain the noted behaviour. It may be this composite simply required additional leach time to comply with the general trends.

Composite 3D presented a leach curve also suggesting some additional leaching was possible. However, the curve has a low gradient and it would not be expected a significant additional extraction would result. It is probably this composite is simply not liberated - noting the sample composite when leached at a grind of nominally 100 µm provided an extraction of 94%.

Whilst the data is inconclusive due to the variability observed including the variability of head grade, those composites that fall into the 0.8 to 1.4 g/t range have provided a more consistent set of trends. Residue grades of less than 0.1 g/t are achievable for those composites with moderate grade and high oxidation. Residue grades escalate as oxidation diminishes to around the 0.5 g/t range for the weakly oxidised samples having moderate grade.

14. MINERAL RESOURCE ESTIMATES

14.1 Introduction

This section documents the resource estimation completed by Ravensgate Mining Industry Consultants in April 2014 for West African Resources. This was reported using the guidelines of both National Instrument 43-101 and the JORC Code (2012). The effective date of the Mankarga 5 estimate is the 14th April 2014.

This Mineral Resource is an update on the previous NI 43-101 resource estimate completed by AMEC in August 2012 for Channel Resources.

14.2 Data Review

The Qualified Person completed reviews of the various data sets on which the resource estimate was to be based. This review included such aspects as:

- Drilling and sampling methodology
- Down-hole surveys
- Drill collar surveys
- Topographic data
- Drilling and sampling data
- Assaying methods
- Assaying QAQC
- Density data
- Geological models
- Domaining and interpretation
- Data validation
- Review of the previous estimate completed by AMEC in 2012 and report

Based upon this review the Qualified Person is of the opinion that WAF have adopted appropriate industry standard methods to collect, store and validate the data from the project and the data obtained is suitable for in use in developing an NI 43-101 and JORC (2012) resource estimate.

14.3 Summary of Data Used in Estimate

14.3.1 *Drilling Data*

The area of the Mankarga 5 resource was drilled using Reverse Circulation (RC), Aircore (AC) and Diamond drill holes (DD) on a nominal 100m x 25m grid spacing with infill on 50m spaced lines in several areas. A total of 116 AC holes (4,601m) and 8 DD holes (1,283.2m) were drilled by WAF in 2013-2014. A total of 60 RC holes (7,296.2m) and 71 DD holes (15,439.6m) were drilled by Channel in 2010-2012. Holes were angled towards 120° or 300° magnetic at declinations of between -50° and -60°, to optimally intersect the mineralised zones.

Diamond drilling in the resource area comprises NQ2, NQ3 or HQ sized core. RC depths range from 13m to 204m and DD depths range from 49.5m to 410.2m. WAF diamond core was oriented using an orientation spear with >50% of orientations rated as confident. RC and AC drilling within the resource area comprises 5.5 inch and 4.5 inch diameter face sampling hammer and aircore blade drilling

All AC and RC samples were weighed to determine recoveries. Diamond drill holes were logged for lithological, structural, geotechnical, density and other attributes.

DD, AC and RC recoveries are logged and recorded in the database. Overall recoveries are >90% for the DD and >70% for the RC; there are no major core loss issues or significant sample recovery problems. The style of mineralisation and the consistency of the mineralised intervals are considered to preclude any issue of significant sample bias due to material loss or gain.

The validated drill hole database files were imported into the Minesight® software package as follows:

- Drill hole database, containing collar, survey, assay, geology, vein class, density, and recovery/RQD tables.

In addition, Ravensgate has visually verified significant intersections in diamond core as part of the resource estimation process. The Qualified Person, Mr Don Maclean of Ravensgate, has visited the Tanlouka Project in March 2014, and has visited WAF's neighbouring Boulsa Project several times between 2010 and 2012. These visits have included inspection of drill sites and drilling, viewing local surface geology, and review of drill core from several diamond holes drilled at Mankarga 5 that form part of the resource estimate.

Six RC holes and one diamond hole were twinned by diamond holes (2 drilled by WAF, 5 by Channel). Results returned from the twins were consistent with original holes.

14.3.2 *Survey Grid*

Data was collected using Universal Transverse Mercator (UTM) Zone 30 North (WGS84 Datum). To simplify modelling a local grid with North rotated 30 degree to the east, aligned to the overall strike of geology and mineralisation, was used for resource modelling (Mankarga 5 Local Grid). Control points for translation from UTM30N to the Mankarga 5 Local Grid is shown in Table 14.1.

Table 14.1 UTM Zone 30N to Mankarga 5 Local Grid Control Points

UTM(30N) North	UTM(30N) East	Local East	Local North
735,321.08	1,334,315.65	50,000	30,0000
746,383.25	1,339,475.9	57,000	31,0000
740,321.08	1,342,975.9	50,000	31,0000

14.3.3 *Drill Hole Collar Locations*

WAR acquired a DGPS in 2012 and has routinely surveyed all drill hole collars, including aircore, RC and diamond drill holes. The DGPS is a Land Pak Network Rover (Navcom 3040 dual frequency GPS and Glonass receiver); the SF-3040 supports Ultra RTK™, which allows RTK accuracy (1.0cm) at up to 40km from the base station. All the drill hole planned positions are placed with a handheld GPS, and was drilling is concluded the drill position is picked up with the Navcom. The collars are considered accurately located in 3D space.

14.3.4 *Topography*

Relief is generally relatively flat, with a small drainage channel passing through the central part of the deposit. The topography used was generated from the collar surveys drill hole pick–ups by DGPS. This is sufficient accuracy for the status of the current resource, but a more detailed topography survey is recommended for future work.

14.3.5 ***Downhole Surveying***

All surface drill holes have been down hole surveyed using Reflex single shot cameras, based on a down hole interval of approximately 25m in the regolith profile and 50m in the fresh material.

All the aircore holes were resurveyed by WAF following the completion of the drilling.

14.3.6 ***Bulk Density***

The prospect area is moderately to deeply weathered /oxidised with the top of fresh rock over mineralised zones around 50 to 60 metres below surface. Bulk densities are based upon over 5,000 density measurements completed by WAF (carried out internally) and Channel (carried out by SGS laboratories). Both utilised industry standard immersion techniques.

Regolith domains were constructed, coded into the resource model and used to assign appropriate bulk densities. All are dry densities and void spaces in core are understood to be negligible. Bulk densities used were 2.2, 2.6 and 2.7 for oxide, transitional and fresh respectively.

14.4 **Geology and Mineralised Domain Modelling**

14.4.1 ***Mineralisation and Geological Domain Modelling Methodology***

The geological interpretation of lithology and mineralisation was based on geological information obtained from WAF's and Channel's Aircore, RC and diamond drilling programs. This included lithological, alteration, veining and structural data. WAF carried out a substantial drill hole relogging program of Channel's drilling to improve consistency of logging. Interpretations of the geology and mineralisation were constructed in 3D based on geological information from this drilling data as well as surface mapping. The interpretation was developed in cross section by Mr Chris Hughes of WAF in Micromine™ and then imported into Minesight® by Mr Don Maclean of Ravensgate. Minesight® was used for constructing dimensional domains and sub domains, coding drill hole sample data, geostatistics, variography and resource estimation block modelling.

The Mankarga 5 area is characterised by a sedimentary pile which is mostly composed of undifferentiated pelitic and psammitic metasediments as well as volcanosedimentary units. This pile has been intruded by a variably porphyritic granodiorite, overprinted by shearing in places, and is generally parallel to sub-parallel with the main shear orientation. Three dimensional models of the major geological units were constructed, used to assist in the mineralisation interpretation and coded into the resource model.

The prospect area is moderately to deeply weathered /oxidised with the top of fresh rock over mineralised zones around 50m to 60m below surface. Base of complete oxidisation and top of fresh rock surfaces were created in section based on drill hole logging. These surfaces were used to code the model for bulk density and ore type.

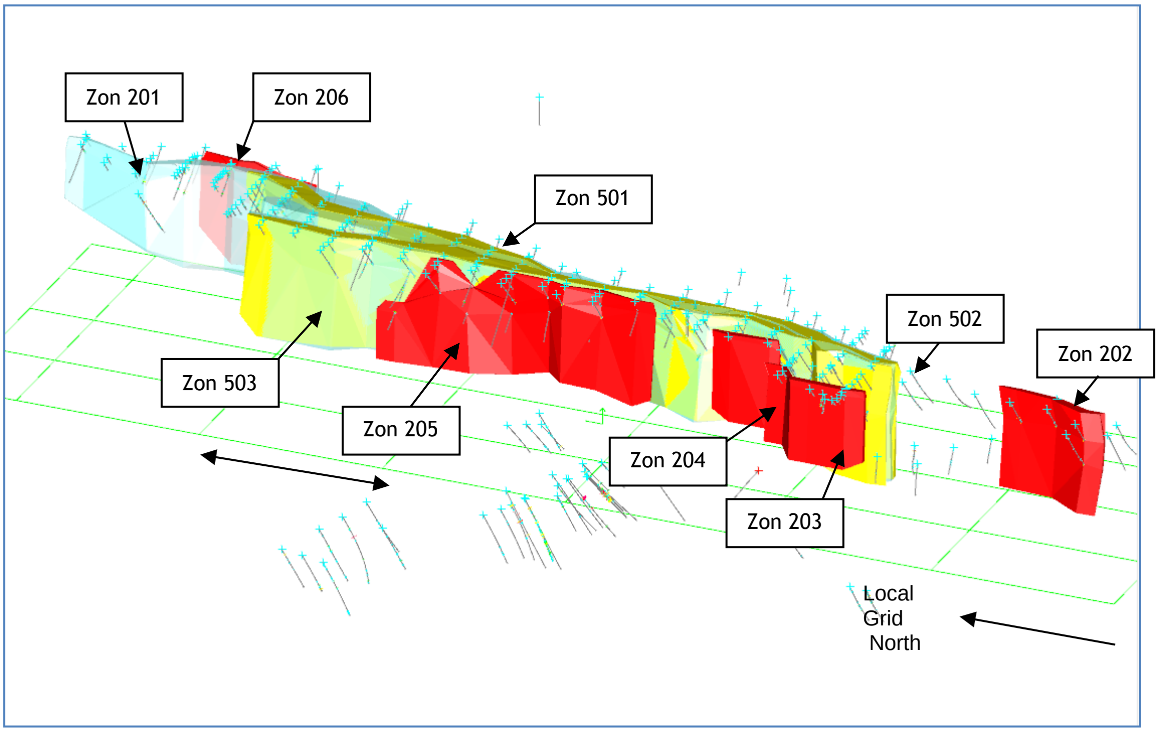
Gold mineralisation in the project area is mesothermal orogenic in origin and structurally controlled. The project area is interpreted to host shear zone type quartz-vein gold mineralisation. Observed gold mineralisation at Mankarga 5 appears associated with quartz vein and veinlet arrays, silica, sulphide and carbonate-albite, tourmaline-biotite alteration. Gold is free and is mainly associated with minor pyrite, chalcopyrite and arsenopyrite disseminations and stringers.

Gold mineralisation largely lies within a broad, steeply dipping low grade shear zone corridor which can be traced over a strike of 3,000m. Distinctive higher grade hanging wall and footwall lodes can be identified within this broader lower grade halo. Mineralised domains were constructed on 50m and 100m spaced cross sections orientated perpendicular to drillings using a nominal 0.2 g/t Au edge cut-off for overall shear zone mineralisation. Within this discrete higher grade, hangingwall and footwall zones were modelled using a 0.5 g/t Au edge cut-off.

Wire framed mineralisation domains were used as hard boundaries for estimation. The domains were further divided into several area domains (based on changes in shear zone orientation) to assist in model coding and estimation.

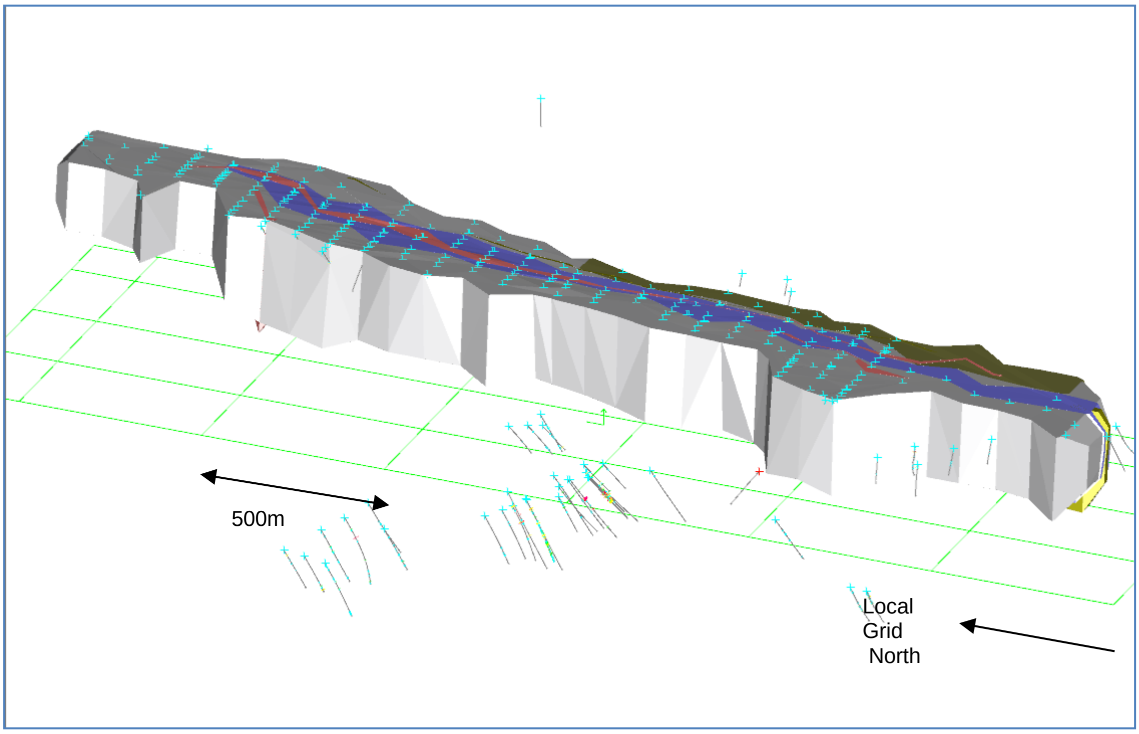
In the Qualified Person's opinion there is sufficient information available from drilling/mapping to build a reliable geological interpretation that is of appropriate confidence for the classification of the resource (Indicated/Inferred).

Figure 14.1 Oblique View of Drilling and Rock Mineralisation Domains Looking Local Grid East



500m

Figure 14.2 Oblique View of Drilling and Geology Domains Looking Local Grid East



14.4.2 *Compositing and Spatial Domaining*

A standard 1.5m length down-hole composite interval was selected for compositing as this was the most common typical sample length and is appropriate to honour the dimensions of the mineralisation domains being modelled. The compositing of assay data and the subsequent file generation process was using a straight forward total drill-hole slope (vertical) length composite calculation run on all drill-holes using Minesight® Torque.

The composite data was coded according to the various geological and mineralisation domains. The allocation of geologic flagging codes to the composited drill hole intervals was by direct intersection of composite drill hole traces contained within the wireframed geological domain triangulations. Compositing was completed using Minesight Torque® software. Composites were flagged with the various geological lithology domain codes, regolith types and by mineralisation domains. These coded composites were used in subsequent data analysis which included exploratory data analysis, review of gold sample populations, analysis of top cut analysis and variography.

14.4.3 *Summary Statistics and Top Cut Strategy*

Standard Log Probability plots were generated for each domain to help determine the statistical population distribution of each domain. In particular parameters related to *outlier* cut-off grades and appropriate variogram grade calculation ranges were examined.

Table 14.2 shows the summary statistics for the composite data of various domains. The distribution of gold within the defined domains at Mankarga 5 generally display coefficients of variations (CVs) ranging from 0.75 to 3.28 with the majority of domain CVs ranging from 1.6 to 2.4. These CV ranges indicate that Au grades need to be treated appropriately to reduce the potential over-influence of outlier high grades.

A decluster analysis (using a cell size of 10m X, 50m Y and 25m Z) of the composites was also completed to examine for any spatially related sampling bias (Table 14.2 Declustered values are similar to the composite values suggesting there is minimal spatially related sampling bias.

To limit the influence of outlier high grades a *high yield limit* has been used. The High Yield threshold at which to limit outlier grades was selected based on the 99th percentile level or where the sample populations exhibited clear outlier grades. The high yield limit was restricted to within 25m of an outlier grade (i.e. grades higher than the yield limit were only used to inform blocks within 25m of a composited sample point). The restriction distance of 25m was based on what is a reasonable area of influence for these higher grades. The application of the restriction is by default spherical and internal to the overall anisotropic search ellipsoids that are used locally for interpolation.

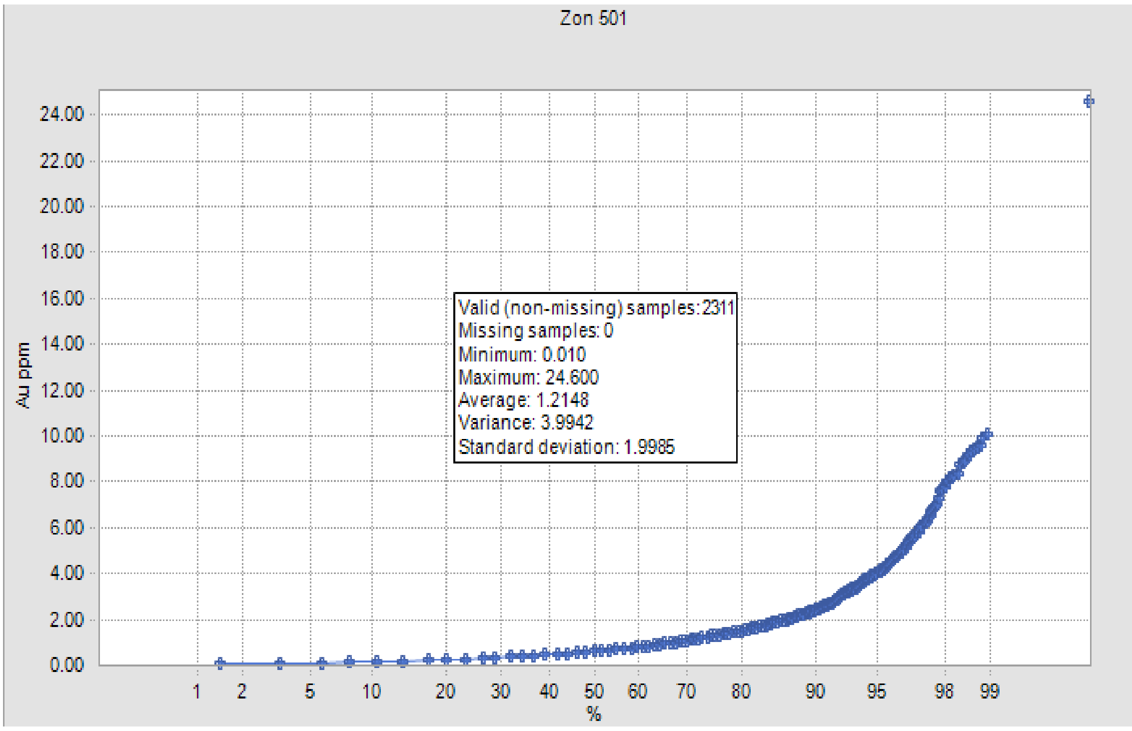
Of note is that only the domains with large numbers of samples (i.e. statistically meaningful data sets) were used to select high yield limit outlier grade thresholds (i.e. several hundred composites or more). On this basis a high yield limit of 10 g/t Au was selected based on analysis of log probability plot of domain 501. The removal of outlier grades removes approximately 8% of reported Au metal

Table 14.2 Mankarga 5 Composite Summary Statistics

	Declustered Domain Statistics				Composite Domain Statistics (1.5m comps)					
Domain Name	Code	mean	Stand Dev	Coeff	No Samples	Min	Max	mean	Stand Dev	CV
Man14_MZ_0.2_201	201	0.32	0.41	1.36	4,034	0.001	18.1	0.33	0.67	2.03
Man14_MZ_0.2_202	202	-	-	-	61	0.005	5.35	0.59	0.84	1.42
Man14_MZ_0.2_203	203	-	-	-	46	0.001	0.42	0.16	0.12	0.75
Man14_MZ_0.2_204	204	-	-	-	32	0.04	2.47	0.49	0.62	1.27
Man14_MZ_0.2_205	205	-	-	-	166	0.002	25.3	0.76	2.49	3.28
Man14_MZ_0.2_206	206	-	-	-	61	0.011	2.05	0.37	0.34	0.92
Man14_MZ_0.5_501	501	1.15	1.36	1.18	2,311	0.001	24.6	1.21	1.99	1.64
Man14_MZ_0.5_502	502	0.69	1.20	1.73	281	0.005	17.65	0.64	1.55	2.42
Man14_MZ_0.5_503	503	0.81	0.68	0.85	803	0.002	27.75	0.89	1.96	2.20

Figure 14.3 Mankarga 5 Model

Zone 501 (main footwall mineralised zone) cumulative probability plot, 1.5m Au composites



14.4.4 *Review of Sample Statistics by Weathering Domains*

The distribution of gold within the various weathering material types at Mankarga 5 was investigated using the coded 1.5m composite data set. Table 14.3 shows a detailed summary of the major mineralised domains (Zones 501 to 503) reported by weathering material type and all domains combined. Weathering was subdivided into oxide (completely weathered rock [typically clays] and oxidised), transitional (saprolitic rock, mixed oxide and sulphides) and fresh (fresh rock, sulphide mineralisation).

From Table 14.3 it can be seen that the mean grades for oxide and transitional at Mankarga 5 are marginally higher than the fresh material. This suggests that there may be a supergene component of enrichment although further work is necessary to demonstrate this. On this basis it was decided to estimate fresh material using assays from all regolith types, and to estimate oxide and transitional material only from composites with the oxide and transitional zones.

Table 14.3 Summary of host rock weathering types within mineralised domains							
Domain Names	Type	# Samples	Min Au	Max Au	Mean Au	Stand Dev	Coeff Var
Mankarga Zones 501-503	oxide	858	0.015	23.21	1.29	2.01	1.56
Mankarga Zones 501-503	trans	149	0.050	11.87	1.44	2.05	1.42
Mankarga Zones 501-503	fresh	1,304	0.010	24.60	1.14	1.93	1.69
All Oxide		*2,868*	0.001	27.75	*0.72*	*1.62*	*2.25*
All Transition		*460*	0.005	11.87	*0.70*	*1.36*	*1.95*
All Fresh		*4,476*	0.002	25.3	*0.62*	*1.42*	*2.29*

14.5 Domain Variography

The semi-variogram (abbreviated to variogram) is a tool to help characterise spatial variability of composites. This type of study is best carried out within a known material type or mineralisation domain which has on average similar geologic features.

Variograms were calculated by using the standard method of determining half of the mean of the squared differences between all pairs of composite points separated according to a set of vectors. The changing observed variance with respective to increasing distance between sample pairs is then plotted to assist with the variogram modelling process.

The variogram calculations and modelling were carried out by Ravensgate using Minesight Data Analyst to produce representative variogram models for the major mineralisation domains. Variograms were all calculated and developed using the domain constrained 1.5m down hole composite set using the normal variogram function.

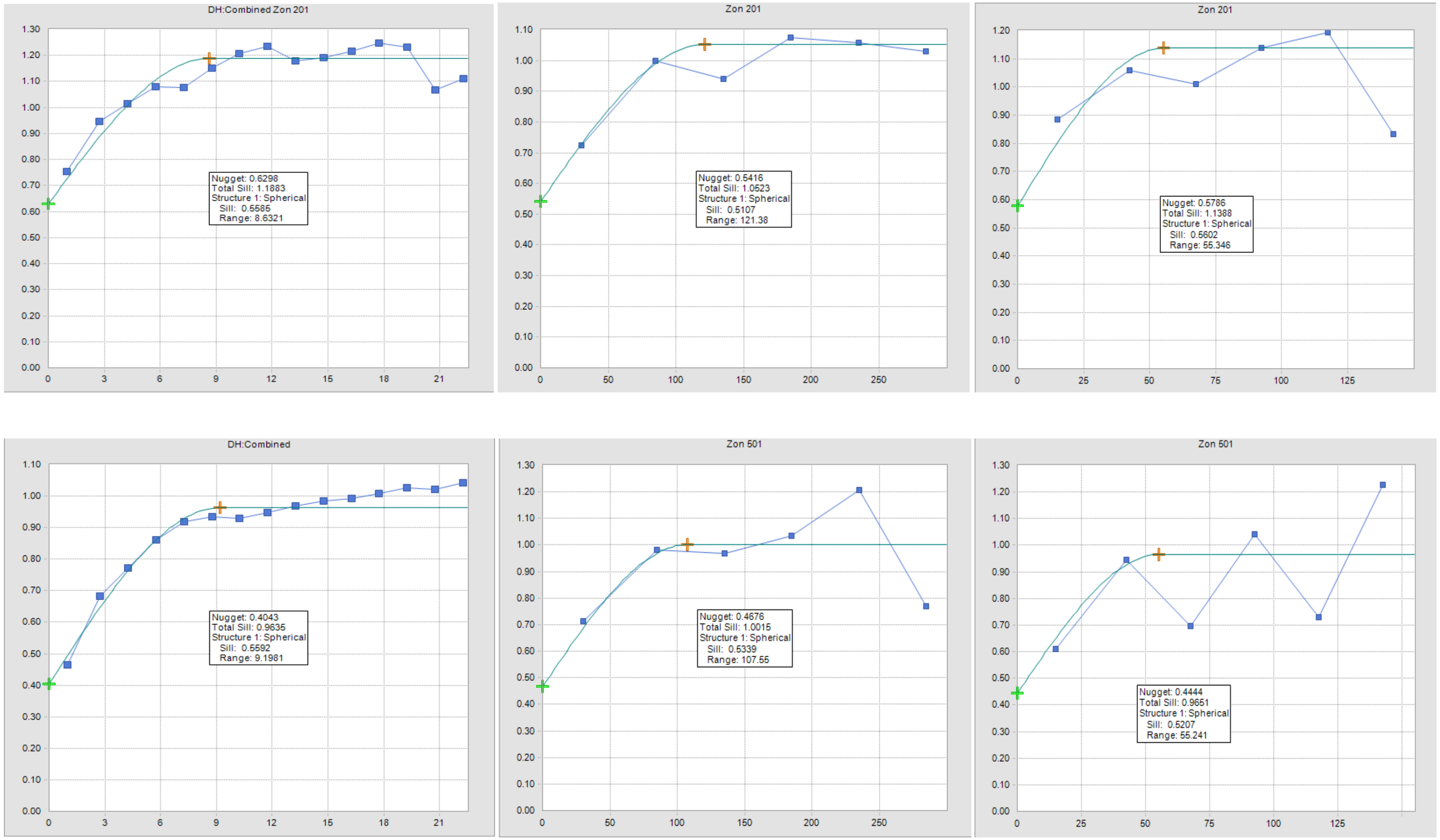
Down hole variograms were generated for each major domain using the Minesight Data Analyst Down hole variogram function. Nugget and sill values were obtained from experimental best fit spherical variogram models of this data. Down hole variograms were typically generated using a 1.5 (+/- 0.5m) metre lag, with a windowing angle of +/- 7.5 degrees and were normalised by variance. Where possible all the 1.5m Au metre composites within a domain were used, but in many cases high (typically >10g/t Au) and low (typically less than 0.1g/t Au) grade composite values were filtered from the dataset to produce stable experimental variogram models.

Between-hole (along strike) and down-dip variograms were generated for each of the main domains. These were typically generated using a 50 (+/- 8m) metre lag (along strike) or 25 (+/-8m) metre lag (down dip), with a windowing angle of +/- 7.5 degrees and were normalised by variance. Again, where possible all the 1.5m Au metre composites within a domain were used, but in many cases high (typically >10g/t Au) and low (typically less than 0.1g/t Au) grade composite values were filtered from the dataset to produce stable experimental variogram models. Experimental best fit spherical variogram models were fitted to this data while attempting to maintain the nugget and sill values for each domain obtained from the down hole variogram modelling. Of note is the between hole variograms were generally less well structured as they are based on composites more widely spaced than that used for the down hole variography which is normally expected

Down hole variograms typically display nugget to sill ratios of 45%, with maximum range of 120m (strike), intermediate range of (dip) 55m and minor axis of 9m.

Figure 14.4 Mankarga 5 Resource Model

Domain 201 (top) and 501 (Bottom) 1.5m Au composite variograms showing downhole, along strike and down dip variogram models



14.6 Block Model Construction

14.6.1 *Block Model Cell Size Selection*

After consideration of the drilling and sample densities present at the Mankarga 5 deposits it was decided that the estimation block size to be used at the project area for block modelling would be 5m x 25m x 10m - (East (X), North(Y), Elev(Z)). This block size is appropriate reflecting the drill spacing and the mineralisation geometry. This block size is also appropriate for the potential 'Selective Mining Unit' (SMU) for the deposit.

14.6.2 *Block Model Interpolation Technique Selection*

Based on review of the local deposit statistics for the Mankarga 5 deposit, the Ordinary Kriging interpolation technique was selected. This technique is appropriate for the block model interpolation of gold mineralisation and is a commonly used technique with these deposit styles. It is particularly appropriate for use with deposits where the mineralisation is locally constrained into geologically similar or spatially related sample population set. The mineralised domains at Mankarga 5 display relatively moderate coefficients of variation which suggests interpolation treatment using the Ordinary Kriging technique is appropriate.

14.6.3 *Model Structure and Coding*

The estimate was run as one large model. Blocks lying below the topographic surface were coded using the topographic percentage item, which is a block proportion defined percentage item. This item is used to ensure that the correct volumetric summaries are reported for mineralised zones particularly if they contact or outcrop at the natural topographic surface. This percentage item will at the topographic surface deplete block volumes where necessary that are normally coded from mineralisation domains.

Oxidisation and density items were then coded within the model using oxidisation surfaces. Geological solids were used to code lithological items within the model.

The mineralised domains were coded in the model using a unique zone code for each domain and zone percentage items (percentage of that domain within a block). This enables block volumes to accurately represent domain volumes without the need to use sub blocking. Wireframe volumes were compared with block model volumes to ensure they had been accurately coded. Two zone and zone percentage items were used (Zon1, Zon1%, Zon2 and Zon2%) with an associated Au estimate (Aukr1 and Aukr2) to accurately estimate blocks within the higher grade hanging wall and footwall structures which are internal to the broader low grade halo zone.

Bulk densities were coded into the model using oxidisation state and/or by depth as outlined in section 14.3.7.

Many of the various mineralised domains are locally complex so local area domains were used to code areas of similar orientation of mineralisation within each domain. Mineralisation wire frames were split into areas of similar orientation, with the resulting solids used to code area domains. These area domains were later used to apply appropriate search ellipses in the interpolation process.

Ancillary items derived in the estimate and block model interpolation included:

- Number of composites used to estimate a block;
- Minimum distance from block centroid to a composite;
- Kriging variance;
- Block estimate quality;

- Block estimate confidence;
- Check estimate (using inverse distance squared interpolation);
- Check Estimate (using nearest neighbour methodology).

The following is a more detailed list of the model parameters used for the Ordinary Kriging interpolation runs carried out for the Mankarga 5 Model Area.

14.6.4 *Grade Estimation*

Gold item values have been interpolated using Ordinary Kriging (OK) using a standard version of Minesight® software. For most of the Mankarga 5 gold deposit domains it was possible to assign specific nugget and sill and search ellipsoid parameters because most exhibited quite robust down hole variograms. The same nugget and sill values used in neighbouring domains were applied to the remaining domains where sample numbers were insufficient to produce robust variograms.

The nugget and sill values together with the search ellipse dimensions and orientation and high yield outlier limiting for each domain are shown in Table 14.4. In each interpolation run a minimum of three composite and up to a maximum of 24 composites were used to estimate each block. A maximum of three composites was allowed from each drill hole to help mitigate uni-directional bias.

For most domains grade estimation was performed in a single pass using a search ellipse with the dimensions the same as the variogram model ranges. To account for variations in dip and strike of domains, many were divided into area sub-domains based on their geometry. These area domains were used to apply an appropriately orientated search ellipse. For each domain oxide and transitional blocks were estimated only using composites code as oxide or transitional, whereas blocks coded as fresh used all composite samples.

The influence of outlier grades was constrained by the use of a high yield limit within an area of 10m influence from an outlier sample. These limits were selected as being at the 99% on probability plots for each domain or where a clear outlier grades could be identified as is mentioned in section 14.4.3.

In addition to the ordinary kriged estimate an inverse distance squared estimate was run as a check estimate. This estimate used search ellipses the same as used with the ordinary kriged estimate, a minimum of three and maximum of 24 samples for a block, three samples per drill hole. A quadrant based search was used with a maximum of six samples allowed per quadrant.

A nearest neighbour estimate was also completed using 6m Au composites as a further check estimate.

A summary of the parameters used for each of the modelled domains is included in Table 14.4.

Table 14.4 Mankarga 5: Model Estimate Summary Parameters

			Variogram Parameters - Structure 1						Search Ellipse Geometry			Search Ellipse Dimensions			Outlier Limiting	
Domain Name	Code	Area1	Nugget	Total Sill	Sill - Nugget	Max	Int	Min	Azimuth	Plunge	East Dip	Major axis (m)	Semi-Major Axis (m)	Minor axis (m)	Outlier cut-off (g/t Au)	Distance (m)
Man14_MZ_0.2_201	201	1	0.62	1.19	0.57	120	55	9	15	0	80	120	70	30	10	25
	201	2	0.62	1.19	0.57	120	55	9	160	0	-77	120	70	30	10	25
	201	3	0.62	1.19	0.57	120	55	9	10	0	80	120	70	30	10	25
	201	4	0.62	1.19	0.57	120	55	9	2	0	83	120	70	30	10	25
	201	5	0.62	1.19	0.57	120	55	9	15	0	83	120	70	30	10	25
	201	6	0.62	1.19	0.57	120	55	9	1	0	90	120	70	30	10	25
	201	7	0.62	1.19	0.57	120	55	9	15	0	87	120	70	30	10	25
Man14_MZ_0.2_202	202	1	0.62	1.19	0.57	120	55	9	8	0	85	120	80	30	10	25
Man14_MZ_0.2_203	203	1	0.62	1.19	0.57	120	55	9	0	0	90	120	80	30	10	25
Man14_MZ_0.2_204	204	1	0.62	1.19	0.57	120	55	9	0	0	90	120	80	30	10	25
Man14_MZ_0.2_205	205	1	0.62	1.19	0.57	120	55	9	1	0	88	120	80	30	10	25
Man14_MZ_0.2_206	206	1	0.62	1.19	0.57	120	55	9	2	0	78	120	80	30	10	25
Man14_MZ_0.5_501	501	1	0.5	1.05	0.55	107	55	9	40	0	83	120	80	30	10	25
	501	2	0.5	1.05	0.55	107	55	9	10	0	84	120	80	30	10	25
	501	3	0.5	1.05	0.55	107	55	9	0	0	90	120	80	30	10	25
	501	4	0.5	1.05	0.55	107	55	9	9	0	85	120	80	30	10	25
Man14_MZ_0.5_502	502	1	0.4	0.9	0.5	88	40	5	30	0	85	100	80	30	10	25
	502	2	0.4	0.9	0.5	88	40	5	160	0	-75	100	80	30	10	25
	502	3	0.4	0.9	0.5	88	40	5	10	0	85	100	80	30	10	25
Man14_MZ_0.5_503	503	1	0.4	0.9	0.5	88	40	5	10	0	90	100	80	30	10	25

14.7 Resource Classification

Resources have been classified according to NI 43-101 and JORC (2012) Guidelines. NI 43-101 states (CIM Definition Standards, Nov 2010) an 'Inferred Mineral Resource' *is "that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes".*

Furthermore "due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies".

The CIM Definition Standards (2010) definition of an Indicated Mineral Resource" is; that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed."

Furthermore the CIM Definition states "Mineralisation may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralisation. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions."

Important assessment criteria in classifying a resource includes amongst others, the following:

- Adequate levels of drilling and sample density;
- Precise drilling and sampling technique;
- Regular checking of assay data quality;
- Adequate survey control for drill-holes and sample points;
- Reliable estimation and allowance for variability of specific gravity;
- Consistent and accurate logging of drill-hole data;
- Precise definition and modelling of ore zones with reference to geology;
- Thorough reviews of deposit statistics;
- Appropriate application of grade cut-offs and area of influence restrictions;
- Correct application of interpolation techniques;
- Thorough analysis of all modelling parameters and the results derived; and
- The minimisation of all assumptions where possible.

To assist in classifying the resource a "quality of estimate" resource confidence item was used which was based upon the distance of a block from a sample composite, the number of composites used to estimate the block and the kriging variance for each block interpolation. The thresholds for each of these items are shown in Table 14.5 and were selected based on histogram analysis of each item as well as data from earlier variogram analysis.

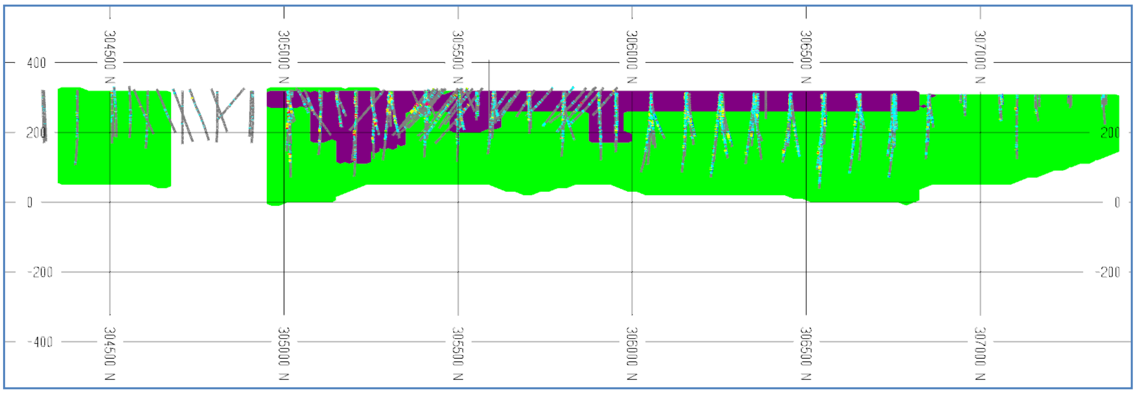
The quality of estimate criteria were reviewed along with the other factors mentioned above and used to assist in resource classification. The Hangingwall and footwall zones (Zones 501 to 503) have the highest geological confidence. Areas within those zones that had a higher quality of estimate coding (quality 1 or 2) and had sufficient drilling density (<50m spaced drilling) or were infilled to a 100m by 25m spacing, were assigned as Indicated Resources. Areas within the remainder of those domains or from within the lower geological confidence domains (Zones 201 to 206) were classified as Inferred. A long section showing resource classification is shown in Figure 14.5.

Ravensgate is of the opinion that this methodology outlined above is in accordance with the criteria of NI 43-101 and the JORC Code (2012) to be classified as Inferred Resources and Indicated Resources as outlined in the above section.

Table 14.5 Mankarga 5 deposit – QLTY (quality) item Classification Code Calculation Parameters			
Distance to nearest Composite (m)	Number of Composites used Range	Kriging 'Variance'	~QLTY
<12	>23	<0.2	1
12-30	12-23	0.2-0.4	2
>30	<12	>0.4	3

Figure 14.5 Mankarga 5 Block Model Long-Section

Looking Grid West showing resource category: Indicated Resource (purple) and Inferred Resource (green) Classification



14.8 Validation

Validation was carried out by:

- Completing a check estimate using an alternative estimation technique (inverse distance squared and nearest neighbour);
- Swath Plots;
- Comparison of input versus output statistics globally;

- Visual checking of interpolation in plan and section;
- Generation of grade shells at varying Au cut-offs to visually check the model honours drilling data;
- Comparison with previous estimates.

14.8.1 *Check Estimates*

Check estimates were run using alternative estimation techniques (inverse distance and nearest neighbour interpolation) to validate the ordinary kriged estimate. These estimates used search ellipses the same as used with the ordinary kriged estimate, a minimum of three and maximum of 24 samples for a block, three samples per drill hole. A quadrant based search was used with a maximum of six samples allowed per quadrant. The nearest neighbour estimate was also completed using six metre Au composites as a further check estimate.

Comparison of the ordinary kriged estimate (which was reported for this resource), inverse distance, nearest neighbour estimate and declustered cut and uncut composite Au data is shown in Table 14.6. The various estimates return results similar to each other and to the primary composite data.

Table 14.6 Mankarga 5 Deposit – comparison of declustered Au grades to model estimates (Major domains 501-503 – all reported at zero Au g/t lower cut-off)

		1.5m composites			Model Estimates		
		Declustered Grade Au g/t (5 x, 25y, 10z)			Ordinary Kriged estimate Au g/t	Inverse Distance estimate Au g/t	Nearest Neighbour Estimate Au g/t
		# cells	Au Uncut	Au Cut 10	AuKr1	AUIZ1	AU_NN
Zone 501	Oxide	267	1.24	1.15	1.14	1.17	1.16
	transitional	67	1.21	1.18	1.22	1.16	1.14
	Fresh	412	1.22	1.11	1.08	1.06	1.13
Zone 502	Oxide	39	0.52	0.52	0.59	0.6	0.54
	transitional	11	0.29	0.28	0.61	0.69	0.72
	Fresh	62	0.95	0.79	0.69	0.69	0.69
Zone 503	Oxide	102	1.08	0.88	0.76	0.76	0.85
	transitional	17	0.62	0.62	0.68	0.66	0.59
	Fresh	136	0.83	0.77	0.67	0.67	0.65

14.8.2 *Swath Plots*

Figure 14.6 shows swath plots for the main 501 domain at Mankarga 5 by Northing and by RL, which hosts the bulk of the resource. These diagrams show the model and composite data used to build the model reported out in 50 or 10m flitches through the model (swaths) to visualise how the modelled data compares to the input data. These show a reasonable correlation between input 1.5m Au composite grades and the ordinary kriged and check inverse distance squared estimates plotted data tending to track each other.

The 1.5m Au composite graphs are more spiky with the ordinary kriged Au and inverse distance estimate grades graphs more smoothed, which is expected given that these estimation techniques are in effect smoothing algorithms. Overall the kriged Au grades, inverse distance check estimated grades and the composite grades show a reasonable spatial comparison with each other.

Figure 14.6 Mankarga 5 Resource Model

Swath plots showing model Ordinary kriged interpolated Au grades compared to composite Au grades by Northing (top) and RL (bottom). Zone 501 - i.e. the major domain

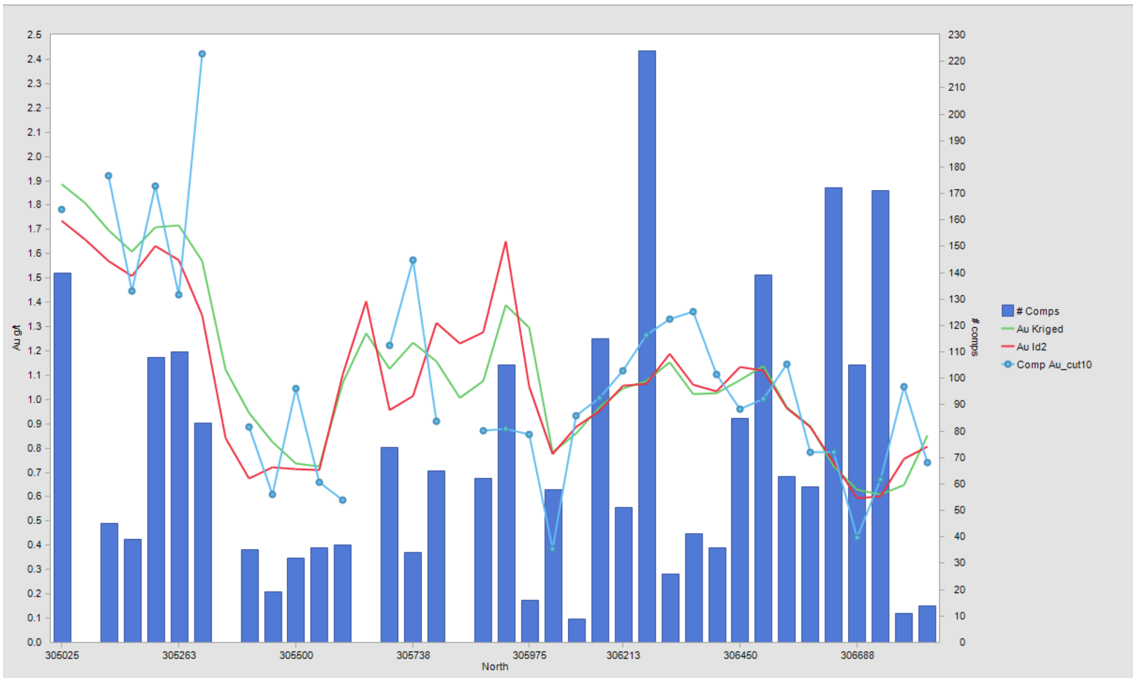
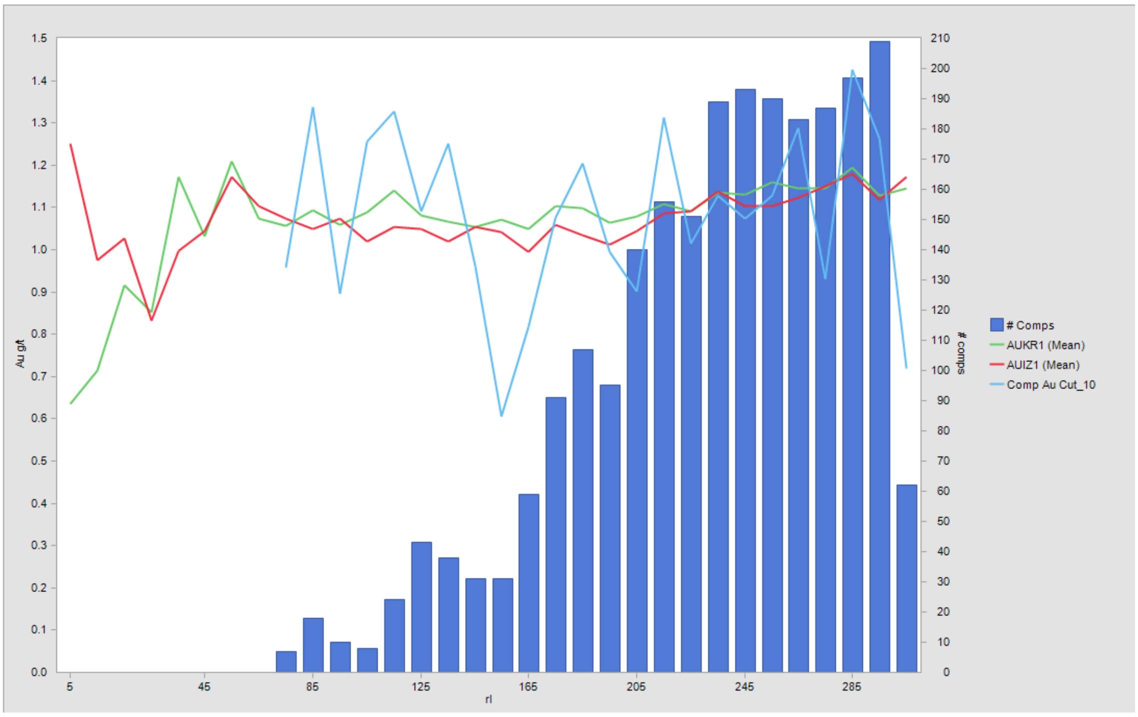


Figure 14.7 Mankarga 5 Resource Model



14.8.3 *Visual Validation*

Block model grades were compared visually to the modelled domains and drilling in section and plan. Grade shells were also generated for the model, and used to visualise the 3D distribution of grade Figure 14.9 shows an oblique view of Mankarga 5 showing drilling and grade shells.

Overall grades and their distribution appear to be reasonable and tend to honour the composite and sample data upon which they are based. Of note is that in some of the widely spaced drilled areas there is the possibility that some of the isolated higher grade composites may be carried or interpolated across relatively large distances, however high grade outlier composites in sparsely drilled areas are treated relatively harshly with a distance restriction regime during interpolation and these areas were classified as inferred reflecting their lower geological confidence.

14.8.4 *Comparison to Previous Estimates*

This resource documented in this report is an update on the resource completed by AMEC for Channel Resources in August 2012 (Table 14.7). The new April 2014 Resource is shown in Table 14.8. Of note is that the previous report only reported oxide and fresh (sulphide) mineralisation, whereas the new resource reports oxide, transitional and fresh mineralisation.

The Mankarga 5 updated resource has improved the oxide component in comparison to the previous estimate, and has added the transitional mineralisation component which was not previously modelled. The grade and tonnage improvement is primarily due to the increased density of drilling in the top 50m of the deposit and relogging of historic drilling, which has resulted in an overall increase in grade by approximately 10% and an increase in contained ounces by approximately 30% (at a 0.5g/t gold cut-off).

Figure 14.8 Cross section Looking North

(305,200N Local Grid). Grey < 0.2 g/t Au, blue = 0.2 -0.5 g/t Au, green = 0.5-1.0 g/t Au, yellow =1.0 to 2.0 g/t Au, red = 2.0 to 3.0 g/t Au and pink = greater than 3.0 g/t Au (refer to Figure 14.9 for section location)

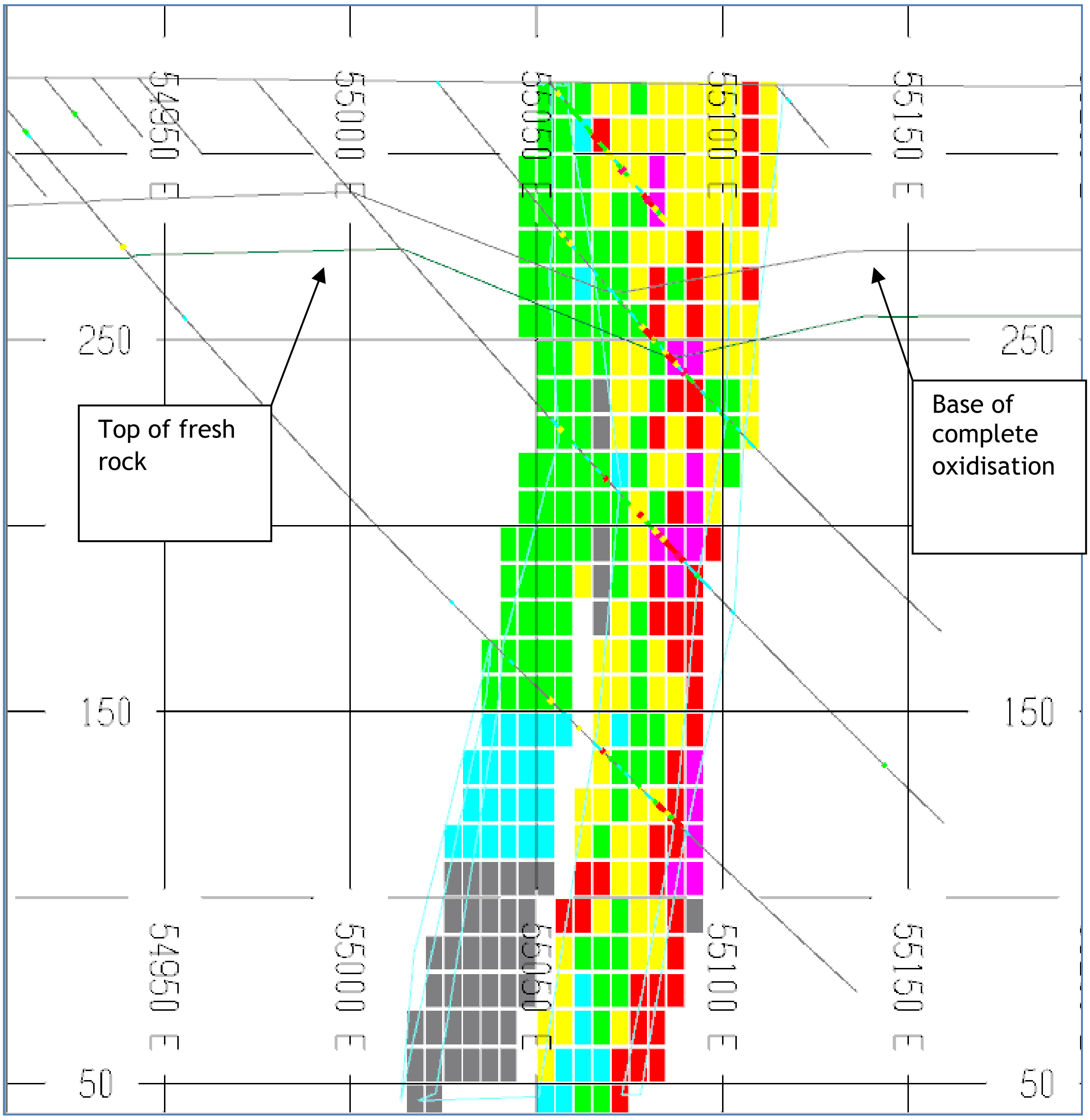


Figure 14.9 Oblique View of block model looking Northeast

showing blocks greater than 0.5 g/t Au. Green = 0.5-1.0 g/t Au, yellow =1.0 to 2.0 g/t Au, red = 2.0 to 30.0 g/t Au and pink = greater than 3.0 g/t Au

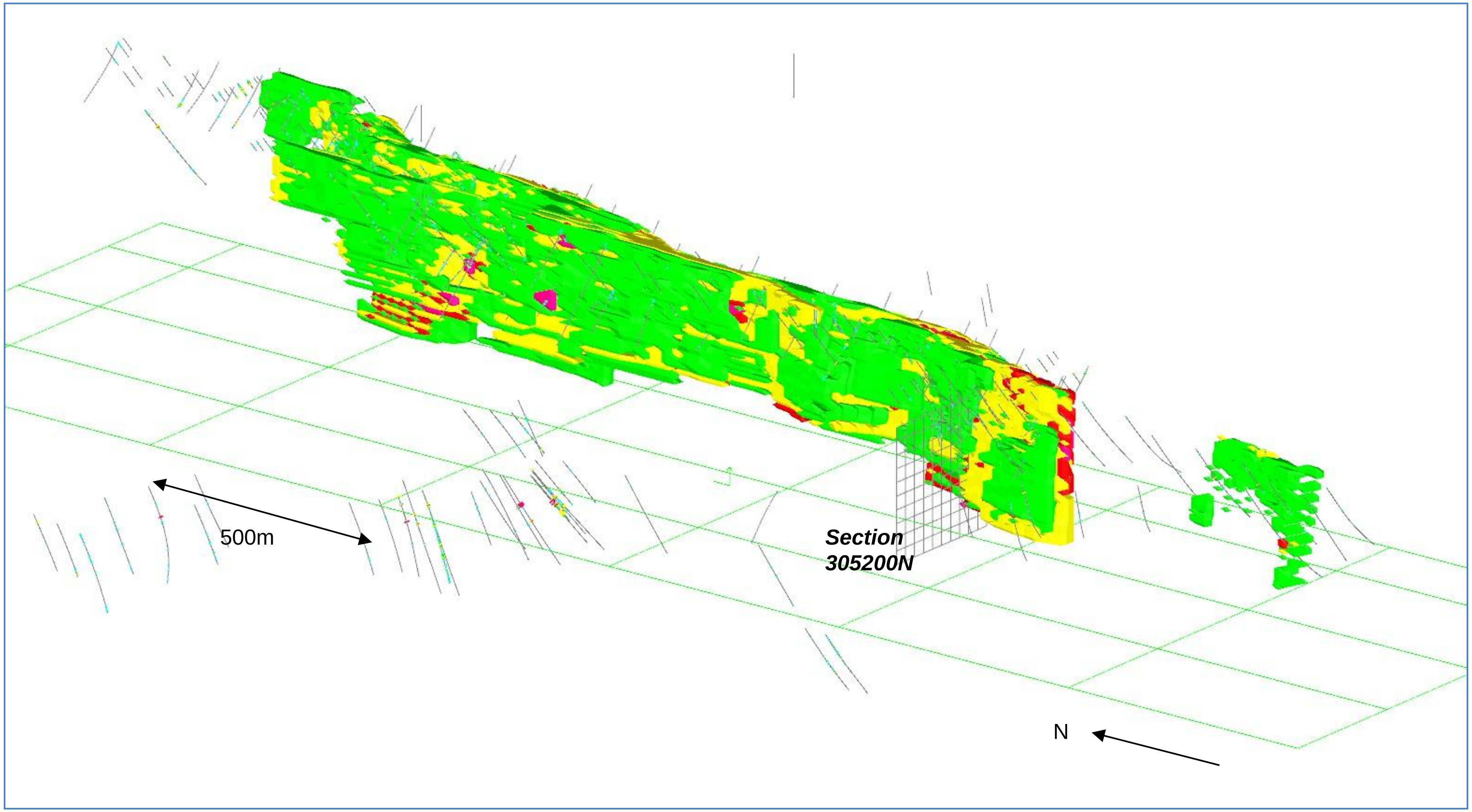


Table 14.7 Mankarga5 August 2012 Resource									
	Cut-off (Au g/t)	INDICATED RESOURCE				INFERRED RESOURCE			
		Vol (m^3)	Tonnes	Grade (Au g/t)	Au Oz	Vol (m^3)	Tonnes	Grade (Au g/t)	Au Oz
Oxide	0.5	760,000	1,600,000	1.1	60,000	2,100,000	4,600,000	1.0	147,000
	1	370,000	800,000	1.5	40,000	770,000	1,700,000	1.5	80,000
Fresh	0.5	3,780,000	9,900,000	1.1	340,000	5,600,000	14,700,000	1.0	458,000
	1	1,640,000	4,300,000	1.5	210,000	1,600,000	4,100,000	1.7	219,000
Total	0.5	4,540,000	11,500,000	1.1	390,000	7,700,000	19,300,000	1.0	604,000
	1	2,010,000	5,100,000	1.5	240,000	2,300,000	5,800,000	1.6	299,000

Table 14.8 Mankarga5 April 2014 Resource									
	Cut-off (Au g/t)	INDICATED RESOURCE				INFERRED RESOURCE			
		Vol (m^3)	Tonnes	Grade (Au g/t)	Au Oz	Vol (m^3)	Tonnes	Grade (Au g/t)	Au Oz
Oxide	0.5	2,520,000	5,500,000	1.2	214,000	910,000	2,000,000	0.8	52,000
	1	1,210,000	2,700,000	1.7	145,000	160,000	400,000	1.5	17,000
Transitional	0.5	420,000	1,100,000	1.1	38,000	260,000	700,000	1.1	23,000
	1	180,000	500,000	1.6	23,000	70,000	200,000	2.2	13,000
Fresh	0.5	1,550,000	4,200,000	1.4	184,000	11,120,000	30,000,000	1.0	974,000
	1	970,000	2,600,000	1.7	146,000	4,020,000	10,800,000	1.5	538,000
Total	0.5	4,490,000	10,800,000	1.3	437,000	12,290,000	32,700,000	1.0	1,050,000
	1	2,360,000	5,700,000	1.7	315,000	4,250,000	11,400,000	1.6	568,000

14.8.5 ***Mineral Resource Reporting***

Ravensgate has estimated an Indicated and Inferred Mineral Resource for the Mankarga 5 prospect (Table 14.8) and Figure 14.10.

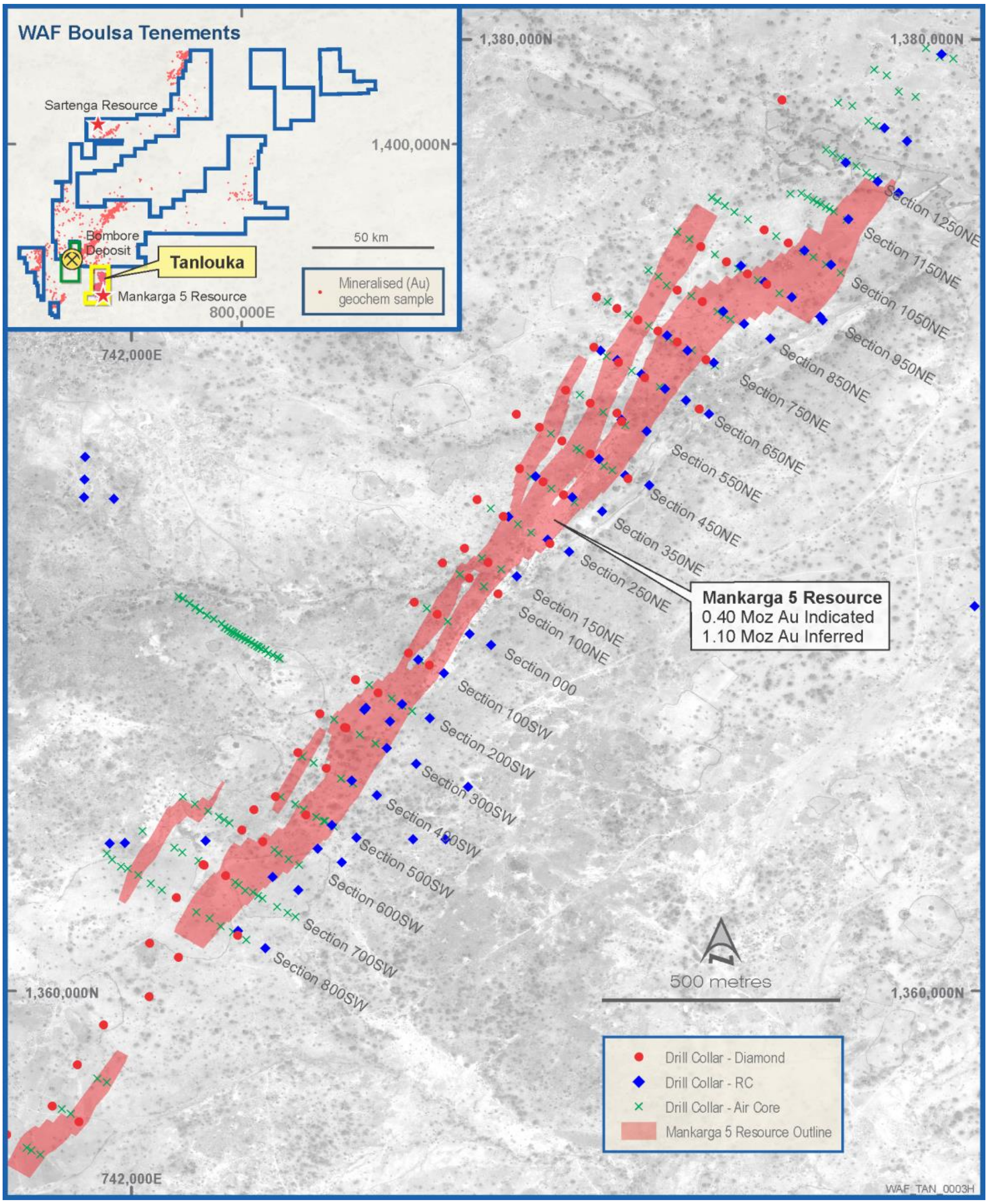
The most likely development scenario for the deposit is as an open cut (pit) mine. Based on this assumption reporting cut-offs of 0.5 g/t Au and 1.0 g/t Au are appropriate with the cut-off dependent on the scale of any potential future operation.

A breakdown of the estimate is as follows using a cut-off of 0.5g/t Au:

- Indicated Resource of 10.8 million tonnes at 1.3g/t gold for 0.437 million ounces gold;
- Inferred Resource of 32.7 million tonnes at 1.0g/t gold for 1.050 million ounces gold.

The Qualified Person understands that presently there are no major environmental, permitting, legal, taxation, socio-economic, marketing or political factors that have been identified which would materially affect the resource estimate.

Figure 14.10 Mankarga 5: April 2014 Resource Outline



15. MINERAL RESERVE ESTIMATES

There is no mineral reserve estimate for the Mankarga 5 Project. According to NI 43-101 guidelines, a preliminary economic assessment is preliminary in nature and includes the use of inferred resources. Inferred resources are too geologically speculative to apply economic considerations that would enable them to be categorized as mineral reserves.

15.1 Mining Inventory

For the purpose of the PEA, a "Mining Inventory" was estimated based on the resource contained within a design pit with allowances for mining dilution. All resource categories (i.e. Inferred and Indicated Mineral Resource) were used in the pit optimisation and design process. Consequently the mineral resource contained within the pit design is referred to as a Mining Inventory and cannot be reported as a mineral reserve estimate.

The mining inventory contained with the pit design in summarised in Table 15.1 and was used in the preparation of production schedules and cash flow analysis for this PEA. An allowance for dilution of 5% was included in the Mining Inventory.

Table 15.1 Mankarga Gold Project Mining Inventory by Resource Category

Mining Inventory (Diluted at 5%)	Mt	Grade	Contained Gold oz
Indicated	6.5	1.10	231,000
Inferred	2.0	0.74	47,000
Mining Inventory	8.5	1.02	278,000

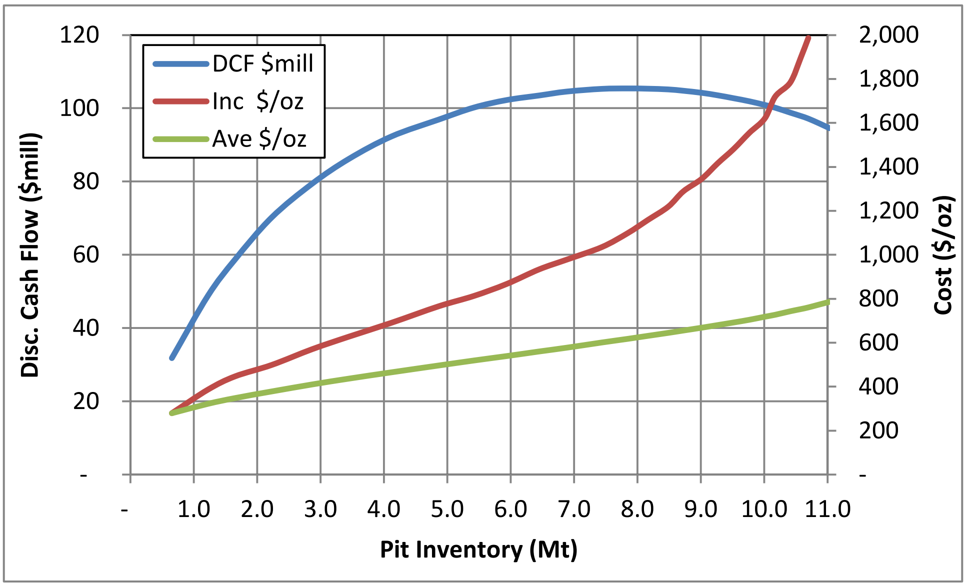
15.2 Pit Optimisation

Whittle software was used to establish the pit shell to complete further design work. The optimal pit is usually selected on the basis of highest discounted cash flow (DCF) or the pit shell exhibiting an incremental cost per ounce just less than the assumed metal price. It is important to note that the capital costs associated with construction of the project were ignored in the optimisation process.

Figure 15.1 illustrates the DCF, average cost per Au ounce produced and the incremental cost per Au ounce produced for increasingly larger pit shells. Full details of the results are given in Tables 15.2 and 15.3.

The incremental cost per ounce is the cost of mining and process ore between one pit shell and the next nested pit shell. The increment cost for Pit Shell 16; that is the cost to mine and process the ore between pit shells 15 and 16, was $1,219 per Au oz. This is the largest pit shell with an incremental cost just below the metal price used. This was also very close to the pit with the highest DCF.

Figure 15.1
Mankarga 5 Gold Project
Summary Optimisation Results



Source: XCUT, July 2014

Pit shell 16 was selected as the optimal pit and it contained an inventory of 8.4Mt at an average grade of 1.02g/t Au for 277,573 Au ounces. Total waste stripping for this pit was 8.5Mt.

The discounted cash flow for pit shell 16 was $105 million, exclusive of project capital expenditure.

Table 15.2 Pit Optimisation Results - Physicals

PHYSICALS																	
Pit No	SOX Inventory			MOX Inventory			WOX Inventory			Fresh Inventory			Total Inventory			Waste	Strip
	dmt	Au g/t	Au oz	dmt	Au g/t	Au oz	dmt	Au g/t	Au oz	dmt	Au g/t	Au oz	dmt	Au g/t	Au oz	t	Ratio
1	512,639	1.65	27,237	140,756	2.76	12,478	0	0.00	0	0	0.00	0	653,395	1.89	39,716	257,954	0.4
2	884,417	1.42	40,337	337,952	2.38	25,909	0	0.00	0	0	0.00	0	1,222,369	1.69	66,247	598,406	0.5
3	1,093,612	1.33	46,674	552,970	2.10	37,311	1,024	2.71	89	0	0.00	0	1,647,606	1.59	84,074	899,320	0.5
4	1,379,970	1.23	54,744	845,177	1.85	50,406	3,071	3.84	379	0	0.00	0	2,228,218	1.47	105,528	1,233,931	0.6
5	1,623,713	1.16	60,623	1,241,427	1.65	65,730	4,774	3.67	564	0	0.00	0	2,869,914	1.38	126,916	1,683,412	0.6
6	1,841,398	1.11	65,692	1,599,002	1.52	78,281	8,866	2.97	845	348	2.55	29	3,449,614	1.31	144,847	2,147,825	0.6
7	2,069,259	1.06	70,326	2,018,552	1.41	91,323	30,504	2.56	2,508	348	2.55	29	4,118,663	1.24	164,185	2,638,376	0.6
8	2,319,675	1.01	75,001	2,493,059	1.31	104,915	52,266	2.25	3,787	695	2.56	57	4,865,695	1.17	183,760	3,218,331	0.7
9	2,494,660	0.98	78,355	2,827,936	1.26	114,258	90,087	2.19	6,332	5,301	2.09	356	5,417,984	1.14	199,302	3,870,510	0.7
10	2,642,961	0.95	81,065	3,174,172	1.21	123,082	110,298	2.10	7,438	7,423	2.08	496	5,934,854	1.11	212,080	4,417,094	0.7
11	2,810,459	0.93	83,729	3,468,527	1.17	130,627	152,983	2.05	10,075	13,457	1.94	839	6,445,426	1.09	225,270	5,095,392	0.8
12	2,915,650	0.91	85,469	3,755,199	1.14	137,319	194,042	1.94	12,109	16,999	1.90	1,037	6,881,890	1.07	235,935	5,648,597	0.8
13	3,031,938	0.90	87,305	4,131,849	1.10	146,612	251,229	1.85	14,966	23,349	1.81	1,361	7,438,365	1.05	250,244	6,752,458	0.9
14	3,084,868	0.89	88,123	4,392,596	1.08	151,948	330,237	1.78	18,861	41,322	1.70	2,263	7,849,023	1.04	261,194	7,380,164	0.9
15	3,133,044	0.88	88,797	4,601,386	1.06	156,512	372,176	1.73	20,648	54,094	1.65	2,875	8,160,700	1.02	268,832	7,940,194	1.0
16	3,176,900	0.88	89,447	4,775,700	1.04	159,865	453,583	1.65	23,993	78,944	1.68	4,268	8,485,127	1.02	277,573	8,465,753	1.0
17	3,206,842	0.87	89,832	4,919,106	1.03	162,438	499,892	1.64	26,294	96,588	1.65	5,127	8,722,428	1.01	283,691	8,928,641	1.0
18	3,234,678	0.87	90,195	5,096,744	1.01	165,795	557,469	1.58	28,230	125,282	1.62	6,544	9,014,173	1.00	290,764	9,464,976	1.1
19	3,265,284	0.86	90,598	5,230,881	1.00	168,217	607,976	1.54	30,108	161,365	1.59	8,240	9,265,506	1.00	297,163	9,960,174	1.1
20	3,290,757	0.86	90,920	5,343,080	0.99	170,055	683,866	1.49	32,856	199,173	1.57	10,028	9,516,876	0.99	303,860	10,471,242	1.1
21	3,300,794	0.86	91,053	5,465,457	0.98	172,109	733,744	1.46	34,482	264,644	1.55	13,146	9,764,639	0.99	310,790	10,991,633	1.1
22	3,310,688	0.86	91,190	5,564,906	0.97	173,824	782,347	1.43	36,088	351,820	1.61	18,206	10,009,761	0.99	319,309	11,704,005	1.2
23	3,316,188	0.86	91,268	5,642,356	0.97	175,064	813,829	1.42	37,077	400,345	1.59	20,486	10,172,718	0.99	323,894	12,140,094	1.2
24	3,321,031	0.86	91,331	5,717,161	0.96	176,249	864,603	1.40	38,875	508,492	1.66	27,174	10,411,287	1.00	333,628	13,049,598	1.3
25	3,325,930	0.85	91,395	5,780,762	0.95	177,275	902,044	1.38	39,974	566,412	1.63	29,707	10,575,148	1.00	338,351	13,544,065	1.3
26	3,326,977	0.85	91,410	5,841,230	0.95	178,282	920,569	1.37	40,564	606,466	1.61	31,367	10,695,242	0.99	341,624	13,951,298	1.3
27	3,330,590	0.85	91,455	5,896,354	0.94	179,115	945,258	1.36	41,365	692,737	1.64	36,443	10,864,939	1.00	348,379	14,720,360	1.4
28	3,331,385	0.85	91,466	5,939,199	0.94	179,839	979,903	1.35	42,401	779,239	1.63	40,714	11,029,726	1.00	354,421	15,436,538	1.4

Table 15.3 Pit Optimisation Results - Financials

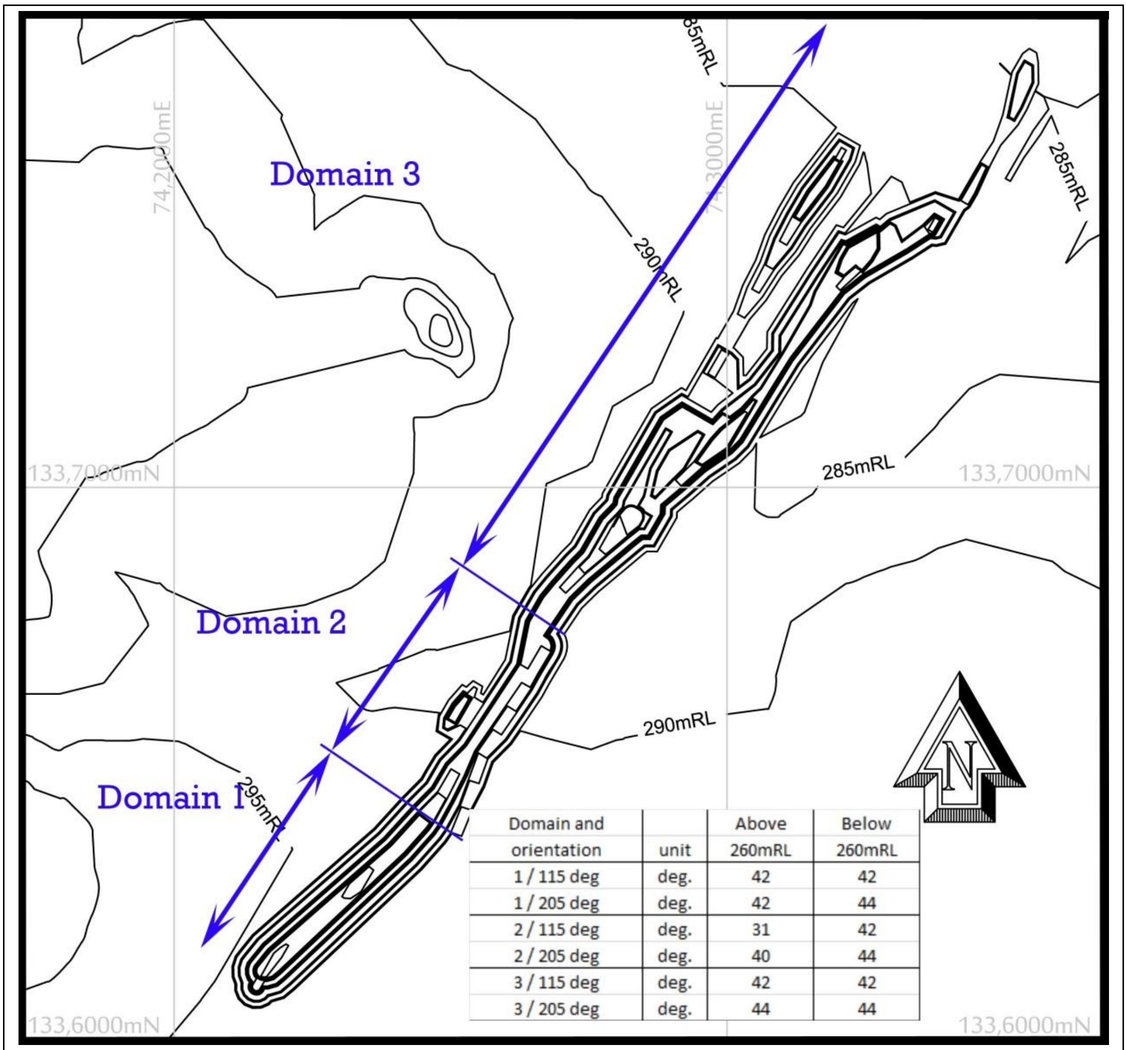
	FINANCIALS									
Pit No	Mining Cost $ '000	Process Cost $ '000	Total Cost $ '000	Cash Cost $/oz Au	Inc. Cost $/oz Au	Process Revenue $ '000	Cashflow $ '000	Worst DCF $ '000	Best DCF $ '000	Average DCF $ '000
1	2,099	7,423	9,522	280	280	42,593	33,071	31,808	31,808	31,808
2	4,341	13,886	18,227	322	387	70,740	52,513	48,825	48,825	48,825
3	6,199	18,717	24,916	348	447	89,462	64,546	58,670	58,672	58,671
4	8,569	25,313	33,881	378	499	111,932	78,050	69,976	70,420	70,198
5	11,472	32,602	44,074	411	571	134,252	90,178	78,789	80,117	79,453
6	14,247	39,188	53,435	437	628	152,892	99,457	85,182	87,252	86,217
7	17,373	46,788	64,161	466	691	172,307	108,146	90,766	93,861	92,314
8	21,033	55,274	76,308	497	766	192,136	115,828	94,682	99,173	96,928
9	24,375	61,548	85,924	519	813	206,931	121,007	97,503	102,886	100,194
10	27,319	67,420	94,739	539	867	219,642	124,903	99,009	105,474	102,241
11	30,666	73,220	103,886	560	934	231,896	128,010	99,584	107,391	103,487
12	33,515	78,178	111,694	577	978	241,881	130,187	100,293	108,821	104,557
13	38,173	84,500	122,673	601	1,035	255,145	132,473	100,374	110,223	105,298
14	41,286	89,165	130,451	618	1,099	263,997	133,546	100,016	110,813	105,414
15	43,895	92,706	136,600	631	1,158	270,638	134,038	99,612	111,075	105,344
16	46,545	96,391	142,936	645	1,219	277,139	134,203	99,131	111,160	105,145
17	48,632	99,087	147,719	656	1,289	281,782	134,063	98,492	111,064	104,778
18	51,162	102,401	153,563	669	1,346	287,214	133,650	97,613	110,809	104,211
19	53,495	105,256	158,751	680	1,416	291,794	133,044	96,621	110,452	103,536
20	55,849	108,112	163,961	692	1,481	296,194	132,233	95,484	109,989	102,737
21	58,362	110,926	169,288	705	1,555	300,479	131,191	94,394	109,403	101,899
22	61,586	113,711	175,297	718	1,621	305,115	129,818	93,150	108,647	100,899
23	63,493	115,562	179,055	727	1,720	307,848	128,793	92,192	108,096	100,144
24	67,498	118,272	185,770	743	1,784	312,554	126,784	90,562	107,034	98,798
25	69,655	120,134	189,789	753	1,897	315,204	125,415	89,464	106,329	97,897
26	71,439	121,498	192,937	761	1,986	317,186	124,249	88,587	105,738	97,163
27	74,779	123,426	198,205	774	2,064	320,378	122,174	87,054	104,712	95,883
28	77,948	125,298	203,245	786	2,190	323,256	120,011	85,432	103,667	94,549

15.2.1 ***Pit Optimisation Assumptions***

15.2.1.1. ***Slopes***

Pit slopes used in pit optimisation were based on the recommendations of Ground Control Engineering Pty Ltd with allowances for pit ramps. The slopes used are shown in Figure 15.2.

Figure 15.2 Mankarga 5 Gold Project Pit Slope Domains Used in Optimisation



Domain and orientation	unit	Above 260mRL	Below 260mRL
1 / 115 deg	deg.	42	42
1 / 205 deg	deg.	42	44
2 / 115 deg	deg.	31	42
2 / 205 deg	deg.	40	44
3 / 115 deg	deg.	42	42
3 / 205 deg	deg.	44	44

Source: XCUT, July 2014

15.2.1.2. ***Mining Costs***

A base mining cost of $2.15/tonne was used in the optimisation process. The mining cost was incremented by depth to reflect the increasing cost of mining due to increasing rock mass competence and increasing haulage distance. Table 15.4 details mining cost used.

Table 15.4 Mankarga 5 Gold Project Mining Costs used in Optimisation			
m below surface	mRL	Waste mining cost $/t	Mining Cost Adjustment Factor
0	320	2.15	1.00
10	310	2.44	1.14
20	300	2.85	1.33
30	290	3.27	1.52
40	280	3.68	1.71
50	270	4.79	2.23
60	260	5.20	2.42
70	250	5.62	2.61
80	240	6.03	2.80
90	230	6.44	2.99
100	220	6.85	3.19
110	210	7.26	3.38
120	200	7.67	3.57

The average mining cost recorded from the pit optimisation was $2.75 per tonne mined.

15.2.1.3. ***Dilution and Mining Losses***

Dilution was assumed to be 5% of the ore tonnage at zero Au grade and mining recovery was assumed to be 100% of contained gold.

15.2.1.4. ***Other Costs***

Other costs used in the pit optimisation process were:

- Processing - $7.82 /t ore (Mintrex);
- G&A - $2.44 /t ore (Mintrex);
- Ore mining - $1.10 /t ore (above base mining cost).

Thus the total cost to process ore was estimated to be $11.36 per tonne of ore.

The additional ore mining costs included allowance of $0.64 per tonne of ore for the owner's technical services and management team, plus $0.46 per tonne of ore for grade control drilling.

15.2.1.5. ***Process Recovery***

Metallurgical recovery of gold was applied by weathering state as follows:

- Strongly Oxidised (SOX) - 90% recovery;
- Moderately Oxidised (MOX) - 85% recovery;
- Weakly Oxidised (WOX) - 45% recovery; and
- Fresh ore - 30% recovery.

15.2.1.6. ***Royalties***

A Government Royalty of 3% was applied to the optimisation process.

15.2.1.7. ***Metal Price***

A gold price of $1,250 per Au ounce was assumed for pit optimisation.

15.2.1.8. ***Cut Off Grades***

Table 15.5 details the cut-off grade for each material type.

Table 15.5 Mankarga 5 Gold Project Economic Cut off grades	
Material Type	Cut off Grade Au g/t
SOX	0.34
MOX	0.36
WOX	0.68
Fresh	1.02

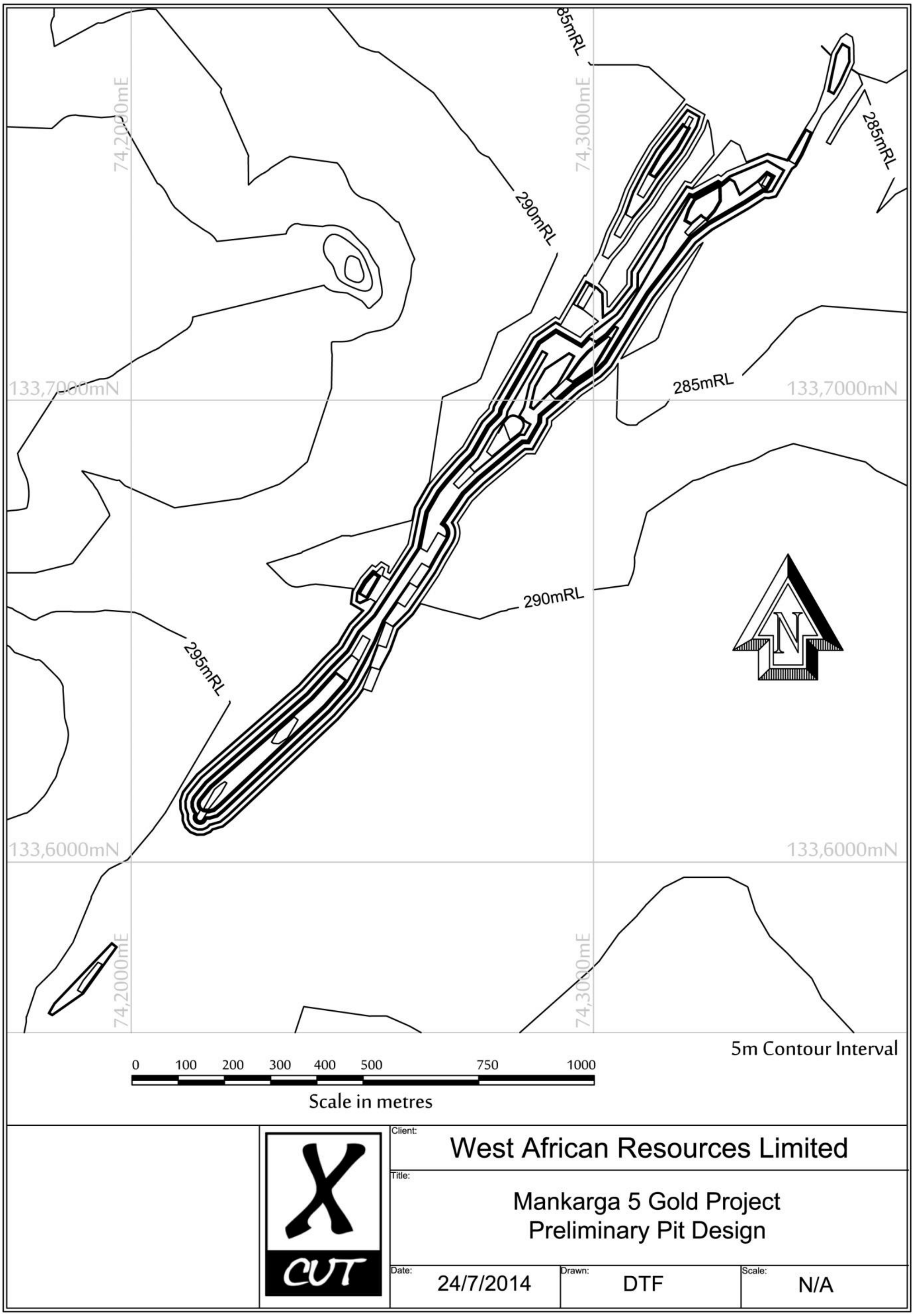
15.3 **Pit Design**

Pit designs were completed on the optimised pit shell 16. The mining inventory within the design pit included 8.5 million tonnes at an average grade of 1.02 g/t Au and contained 8.4 million tonnes of waste as summarised in Table 15.6.

Table 15.6 Mankarga 5 Gold Project Mining Costs used in Optimisation			
Mining Inventory (Diluted)	Mt	Grade	Contained Gold oz
Indicated	6.5	1.10	230,624
Inferred	2.0	0.74	46,869
Mining Inventory	8.5	1.02	277,493
Waste Mined	8.4		
Strip ratio	1.0		

The final pit design is illustrated in Figure 15.3.

Figure 15.3 Mankarga 5 Pit Design



15.3.1 *Design Parameters*

15.3.1.1. *Ramps*

A single ramp was designed for access. The design ramp width was 18m with a gradient of 10%.

15.3.1.2. *Slopes*

Ground Control Engineering Pty Ltd provided estimates for design pit slopes, and these are detailed in Table 15.7.

Table 15.7 Mankarga 5 Gold Project Pit slope design parameters

Pit Area	Pit Wall Sector	Geotech Domain	Estimated Depth (m)	Preliminary Estimated Slope Design Parameters			
				Maximum IRSA	Batter Height (m)	Batter Angle (°)	Berm Width (m)
North	All	Cover	0 - 20m	42	10	65	6.5
		Weathered	20 - 50m	49	20	65	8.5
		Hard Rock	50 - 150m	52	20	70	8.5
South	All	Cover	0 - 20m	42	10	65	6.5
		Weathered	20 - 50m	49	20	65	8.5
		Hard Rock	50 - 150m	52	20	70	8.5

16. MINING METHODS

It is envisaged that mining of the Mankarga 5 deposit will be carried out using conventional truck and shovel surface mining methods, utilising a mining contractor. Whilst some of the oxide resource is likely to be free digging, ultimately mining will require a drill and blast process.

16.1 Mine Operations

Production schedules were completed on the assumption that a contractor would be employed for all mining activities at a mining rate of 8 million tonnes per annum, total material movement. The plan is to complete mining in 26 months, stockpiling ore adjacent to the crushing facilities.

For the PEA it was assumed that high grade ore would be preferentially processed and lower grade ores would be stockpiled for later processing. A cut-over-grade of 0.7g/t was assumed for Strongly and Moderately Oxidised (SOX and MOX) ore types.

16.1.1 *Drilling & Blasting*

Four different competencies of rock will be mined comprising both waste and mill feed. These comprise strongly oxidised (SOX), moderately oxidised (MOX), transition or weakly oxidised (WOX), and fresh rock types. The oxide rock types are the least competent rock and sulphide being the most competent.

It is assumed that the SOX rock is free digging; MOX requires some light blasting and the transition and sulphide rocks are harder, requiring higher powder factors to achieve efficient loading operations.

16.1.2 *Loading & Hauling*

It was assumed that load and haul will be carried out by two hydraulic excavators in a backhoe configuration. The excavators will load the 90-tonne off-highway haul trucks. Loading operations will also be supported by a 12 m3 capacity wheel loader.

16.1.3 *Auxiliary Equipment*

Additional contractor equipment may consist of Caterpillar D9 size class bulldozers a grader, wheel dozer, water truck, maintenance vehicles and service vehicles.

16.1.4 *Pit Dewatering*

Although this region is fairly arid, it is expected that some groundwater will be encountered. A skid or trailer-mounted centrifugal pumps will be required to remove water from the pit sump locations. An allowance has been included in the operating and capital costs for a pit dewatering system to pump water from pit sumps, although further groundwater studies are required to provide an estimate of groundwater inflows.

16.1.5 *Waste Rock Storage*

A waste dump will be developed adjacent to the access ramp on the eastern side of the pit. Total capacity will be 8.3 million tonnes. A preliminary design has not been completed, but the topography of the area is flat and it is anticipated that the dimensions of the waste dump will be in the order of 30m high by 250m wide by 700m long and it is envisaged that final slopes will be 3 horizontal to 1 vertical.

Of all waste mined, 97% was moderately or strongly weathered, and should be benign from an acid mine drainage perspective. Of the balance, 2% is from the transition (WOX) zone whilst around 60,000 tonnes was from the fresh rock type. Further work is required to determine the acid generating potential of rock types.

16.1.6 *Other Mining Infrastructure*

The mine will require mine offices, change house facilities and maintenance facilities. The mine office will provide for mine management, engineering, geology, mine maintenance services. Other infrastructure required included:

- A maintenance shop for use by the mining contractor;
- Fuel storage facilities;
- Magazines for the storage of ANFO, packaged explosives and detonators.

16.2 Production Schedule

The annual mining production schedule is summarised in Table 16.1. Note Processing is carried out at 1.6Mtpa. See Table

Table 16.1 Mankarga 5 Gold Project Annual Production Schedule

Name	Year 1	Year 2	Year 3		Total
Heap Leach t	3,116,982	4,793,446	586,731		8,497,159
Heap Leach g/t	0.88	1.06	1.38		
SOX Au (oz)	76,379	7,199	2,212		85,790
MOX Au (oz)	12,299	149,766	4,182		166,247
WOX Au (oz)	0	4,940	15,847		20,787
Fresh Au (oz)	0	874	3,849		4,724
Total Heap Leach Au (oz)	88,678	162,779	26,091		277,548
Ore Mined (t)	3,116,982	4,793,446	586,731		8,497,159
Waste Mined (t)	4,899,439	3,196,833	256,172		8,352,445
Total Mined (t)	8,016,421	7,990,280	842,903		16,849,604
Strip Ratio	3.40	1.92	1.74		0.98
SOX HG t	1,441,157	142,278	115,612		1,699,047
SOX HG g/t	1.24	1.18	0.60		1.19
SOX HG oz	57,400	5,410	2,212		65,022
SOX LG t	1,353,163	133,590	0		1,486,753
SOX LG g/t	0.44	0.42	0.00		0.43
SOX LG oz	18,979	1,789	0		20,768
MOX HG t	219,985	2,998,016	61,816		3,279,817
MOX HG g/t	1.50	1.34	1.81		1.36
MOX HG oz	10,602	129,116	3,605		143,323
MOX LG t	102,677	1,399,302	28,852		1,530,831
MOX LG g/t	0.51	0.46	0.62		0.47
MOX LG oz	1,697	20,650	577		22,924
WOX t	0	102,612	303,264		405,876
WOX g/t	0.00	1.50	1.63		1.59
WOX oz	0	4,940	15,847		20,787
Fresh t	0	17,649	77,186		94,835
Fresh g/t	0.00	1.54	1.55		1.55
Fresh oz	0	874	3,849		4,724

The schedule was based on a 10m bench schedule and assumed that mining occurred to the final pit batters on each bench prior to the mining of the subsequent bench. Whilst this is likely to be a simplification of the actual mining schedule employed, the size of equipment and production rate envisaged in this PEA make it impractical to mine any significant starter pits early in the mine life.

17. RECOVERY METHODS

17.1 Introduction

The processing concept for the Mankarga 5 Gold Project is an agglomeration heap leach followed by carbon in column adsorption then gold elution, electrowinning and smelting via a modular stripping plant.

A Process Flow Diagram (PFD) has been developed from the Process Design Criteria (PDC) prepared by Mintrex Pty Ltd, based on information supplied by West African Resources and its. The flow sheet proposed broadly comprises the following:

- Primary Crushing;
- Secondary Crushing;
- Agglomeration;
- Stacking;
- Heap Leaching;
- Adsorption;
- Elution and Electrowinning;
- Smelting.

The Mankarga 5 processing facility will have a throughput of 1,600,000 dry tonnes per annum, producing an average of 44,000 ounces of gold per annum at a gold head grade of 1.0 g/t. The design gold head grade for the adsorption and stripping plant is 1.5 g/t to cater for the initial (up to 1 year) higher grade of ore and possible heap leach expansions, producing up to 60,000 ounces of gold for the first year. The plant is located approximately 90 km east of Ouagadougou, Burkina Faso, and will be at approximately 300 m above sea level.

The capacity of the plant is based on existing second hand crushing, conveying and stacking equipment purchased by West African Resources. The installation of a new secondary crusher is required to achieve the design throughput.

The adsorption plant is based on a modular plant concept by Como Engineers.

The Elution, Electrowinning and Smelting plant is based on previous similar projects by Mintrex.

17.2 Process Design Philosophy

The plant will be designed to achieve the required 1,600,000 dry tonnes per annum throughput. It will be a combination of processing circuits, which are described below:

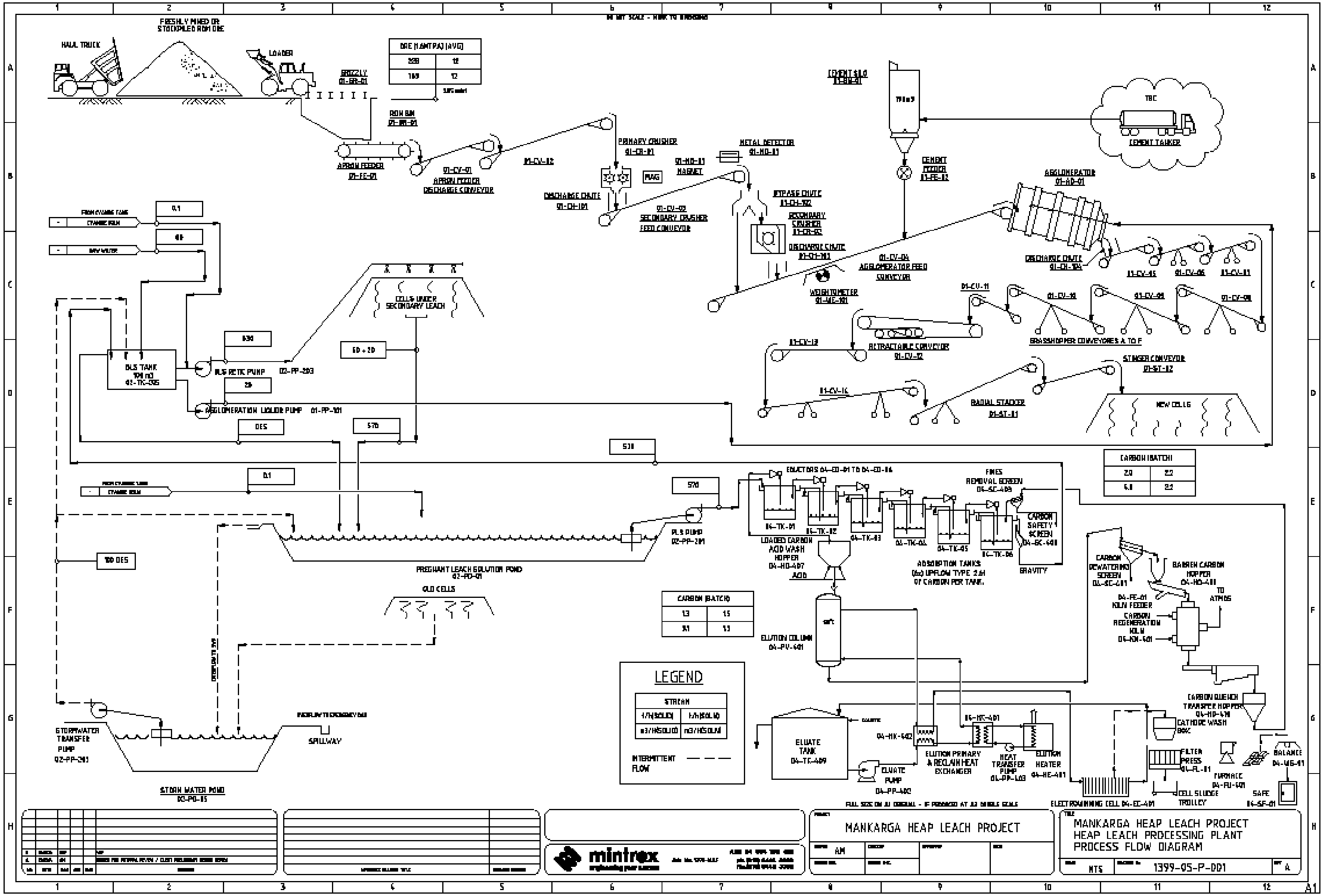
- The two stage crushing and agglomeration circuit will be designed with a throughput of 274 tph and availability of 80%, on a 24 hours per day operation.
- Agglomerated ore will be conveyed to the heap leach area via a series of grasshopper, retractable, and slewing-stacking conveyors, where it will be stacked 6 m high in a series of modules of 300 m long by 70 m wide.
- Heap Leach will be designed to operate at a net PLS flow of 570 m^3/hr, at 96% availability, and a design gold extraction of 80%;
- Carbon in Column (CIC) circuit will consist of six adsorption columns, treating 570 m^3/hr of Pregnant Leach Solution (PLS);
- Metal recovery and refining will consist of an elution circuit, electrowinning cells, and smelting, operating on a 12 hour per day, 7 day per week basis.

Water will be sourced primarily from a Water Storage Facility (WSF) built in a seasonal water course to capture run-off during the wet season and hold sufficient water during the dry season.

17.3 Process Plant Description

The flow sheet for the Mankarga 5 Gold project is presented in Figure 17.1 (1399-05-P-001).

All the major mechanical equipment and their details are presented in the Mechanical Equipment List.



1399-05-P-001.dgn Mintrex Drawing Border File 27/05/2014 7:47:30 AM Plotted to A3 PDF by bfrater

Figure 17.1 Mankarga 5 Gold Project Flow sheet

17.3.1 ***Crushing***

Mine haul trucks deliver Run-Of-Mine (ROM) ore to the ROM pad. Ore is stored on the ROM pad in separate stockpiles of varying ore types and grades to facilitate blending of the feed into the crushing plant. The target maximum particle size of ore on the ROM pad is 500 mm in any dimension. Any oversized rock is placed to one side in the mining sequence and reduced to minus 500 mm on the ROM pad before feeding it into the ROM bin.

The ROM bin (01-BN-01) is fed ore from the ROM stockpiles using a CAT 966 or equivalent front end loader (FEL). The ROM bin has a design capacity of 80 tonnes and is lined with wear resistant liners. A static grizzly (01-GR-01) with a screen aperture of 500 mm is installed on top of the ROM bin to prevent oversized ore from entering the circuit. Any oversized rock is removed by the FEL and placed to one side on the ROM pad. A "dump – no dump" traffic signal, mounted adjacent to the ROM bin, is controlled by a radar level sensor mounted above the ROM bin.

A 1,000 mm wide Apron Feeder (01-FE-01), delivers the ore from the ROM bin to the Primary Crusher (01-CR-01) via the Apron Feeder Discharge Conveyor (01-CV-01) and the Primary Crusher Feed Conveyor (01-CV-02). Both conveyors are 750 mm wide. The Primary Crusher is an MMD Sizer, which accepts nominal minus 500 mm rocks. The Sizer will reduce the rock to a P80 of minus 80 mm, and a nominal P100 of minus 100 mm.

The crushed product from the primary crusher flows onto the 750 mm wide Secondary Crusher Feed Conveyor (01-CV-03), which in turn discharges the product into the Secondary Crusher (01-CR-02). The Secondary Crusher is a CVR 1313Vh Impact Crusher (320 kW). The Secondary Crusher product has a P80 of minus 10 mm, and a nominal P100 of minus 13 mm. A self-cleaning magnet (01-MG-01) over the Secondary Crusher Feed Conveyor, removes any tramp metal and a metal detector (01-MD-01) is also installed to detect any tramp metal not picked up by the magnet. If tramp metal is detected the ore being discharged from the conveyor will be directed into a bypass chute (by means of flop gate) and discharge to the ground.

Secondary Crusher product is discharged onto the Agglomerator Feed Conveyor (01-CV-04). Cement from the Cement Silo (01-BN-02), is metered onto Agglomerator feed conveyer (01-CV-04) via the Cement Feeder (01-FE-02) Rotary Valve. A weightometer (01-WT-01) is placed on conveyor (01-CV-04) to provide crushing and agglomeration flows.

17.3.2 ***Agglomeration***

Crushed ore and cement from conveyer 01-CV-04 are fed into the Drum Agglomerator (01-AD-01), along with barren leach solution (BLS), originating from the BLS Tank (02-TK-205), transferred by the Agglomeration Liquor Pump (01-PP-01). The Drum Agglomerator is a horizontal cylindrical unit, 3m diameter, 9 m long vessel with steel liners, operating at 8 rpm and a 5° slope. It is a Sepro model AG1030. The BLS is sprayed into the feed end of the Drum Agglomerator to wet the cement and assist in agglomeration of the ore. The drum is internally steel lined and has low profile lifters to assist in the agglomeration process.

17.3.3 ***Conveying and Stacking***

Drum Agglomerator discharge flows onto the Agglomerator Discharge Conveyor (01-CV-05). It is then conveyed by a series of grasshopper and retractable conveyors and a radial stacker to the new leach heap. The equipment primarily consists of:

- Up to six 750 mm wide by 60 m long Grasshopper Conveyors, 01-CV-06 to 01-CV-11.
- A Retractable Conveyor (01-CV-12), 750 mm wide and up to 190 mm long;
- A Radial Stacker (01-ST-01), 750 mm wide, 25 m radius, up to 8 m stacking height.
- A retractable Stinger Conveyor (01-ST-02), at the end of the radial stacker.

The stacker will place the agglomerated material to minimise compaction and achieve a desired stacked bulk density, such that the solution will percolate evenly through the stacked material (see

Figure 17.2).

Figure 17.2 Typical Radial Stacker with Stinger Conveyor

17.3.4 *Heap Leaching*

The heap will effectively be divided into cells to delineate the leaching sequence.

The cell will be stacked upslope and as the cell is stacked the stacking system will be retracted. As soon as there is sufficient material stacked in a cell to provide a buffer zone between the leach solutions and the stacking operations, irrigation of the heaped material will commence.

The heap leach has been designed to operate under a single-stage 120 day leaching regime, with the knowledge that Lifts 1 and 2 will have extended leaching times.

After percolating through the leach cells, this solution becomes the Pregnant Leach Solution (PLS) and flows into the Pregnant Leach Solution Pond (02-PD-01). The PLS Reticulation Pump (02-PP-204) is used to supplement irrigation of the cells under leach.

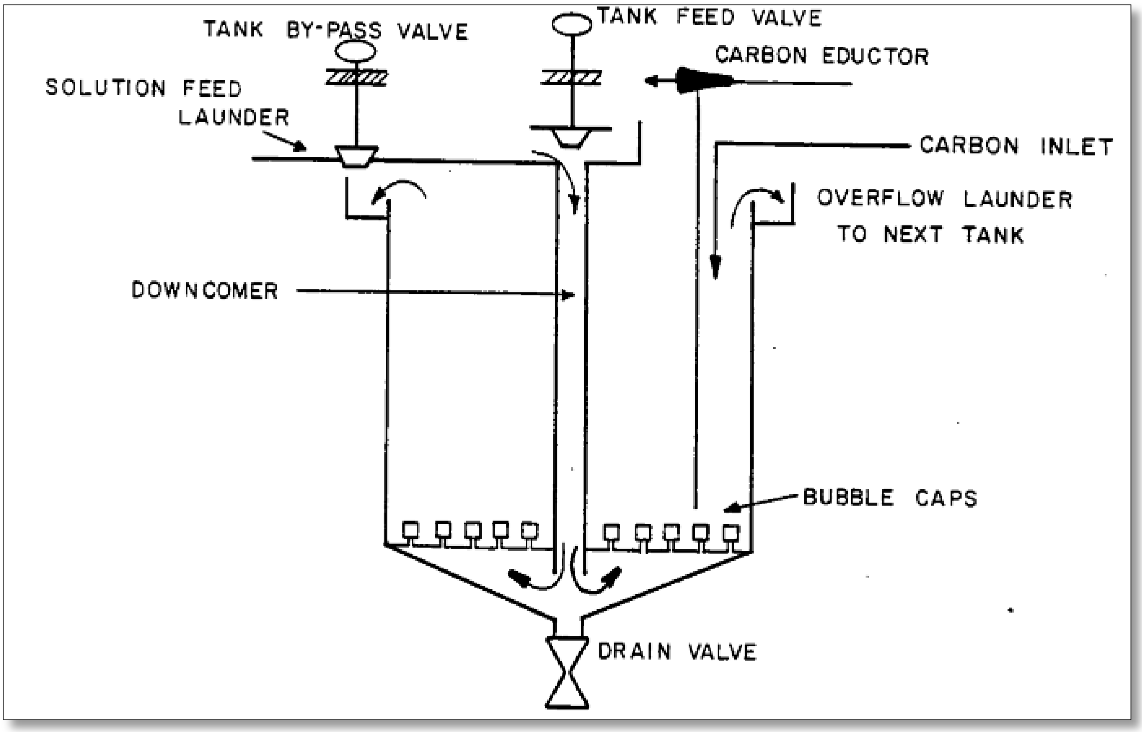
The PLS is pumped by the PLS Pump (02-PP-201) to the Carbon in Column Adsorption circuit for gold recovery.

17.3.5 *Adsorption Circuit*

The PLS from the Pregnant Leach Solution Pond (02-SP-01) is pumped by the PLS Pump (02-PP-20104-TK-01) to Adsorption Tank #1 (04-TK-01). The PLS flows into the base of the tank, through a distributor then proceeds to flow upward through the carbon bed, overflowing through a screen at the top of the tank, then via a launder to Adsorption Tank #2. Liquor progressively flows in this manner though Adsorption Tanks #2 to #6 (04-TK-02 to 04-TK-06). The carbon bed is fluidised by the upward flow of liquor and is retained in the tank by a fixed screen (see Figure 17.3). This also allows free passage of any suspended solids through the adsorption tanks. Carbon is periodically transferred counter-current to the flow of liquor (progressively from Adsorption Tank #6 to #1) using Adsorption Tank Eductors (04-ED-06 to 04-ED-02).

Barren liquor overflowing from Adsorption Tank #6 passes through a Carbon Safety Screen (04-SC-400) and flows by gravity to the BLS Tank (02-TK-205).

Figure 17.3 Typical Cascade Type Carbon in Column Tank



The Adsorption Sump Pump (03-PP-304), collects any plant spillage and directs it to the Carbon Safety Screen, (04-SC-00).

17.3.6 ***Elution Circuit and Gold Room Operations***

Loaded carbon is transferred from Adsorption Tank #1, using Adsorption Tank Eductor (04-ED-01) and enters the rubber lined Loaded Carbon Acid Wash Hopper (04-HO-407). Here it is acid washed with dilute hydrochloric acid, to remove inorganic contaminants and calcium containing scale. A water rinse cycle follows the acid wash to reduce chloride contamination in downstream processing. Following the rinse cycle the carbon in the storage hopper is dumped into the Elution Column, (04-PV-01) via an actuated ball valve. The elution column has a volumetric capacity of 4.5 m^3 and is capable of holding 2 tonnes of carbon. A caustic eluate (or strip) solution is heated and circulated through the elution column at 130 to 140 °C to strip the gold from the contained carbon, which is then electrowon.

Eluate solution is stored in the Eluate Tank (04-TK-409). Caustic (sodium hydroxide, NaOH) solution is added to the tank as necessary to maintain a 2% NaOH solution strength, with sodium cyanide added if required. The eluate solution is pumped by Eluate Pump (04-PP-402) through the Elution Reclaim Heater (04-HX-402) and the Elution Primary Heat Exchanger (04-HX-401), to reach a solution temperature of 130°C. The hot strip solution is introduced to the bottom of the elution column at a pressure of up to 600 kPa (guage). Loaded eluate solution passes out of the top of the carbon bed, is cooled through the Elution Reclaim Heat Exchanger then flows through the Electrowinning Cell (04-

EC-401), where gold is recovered onto a stainless steel cathode, then returns to the Eluate Tank. There is provision to bleed barren eluate from the Eluate Tank to the BLS Tank.

At the completion of the elution cycle, barren carbon is passed from the elution column to the Carbon Dewatering Screen (04-SC-401) and is collected in the Barren Carbon Hopper (04-HO-408). The hopper is located on top of the regeneration kiln. From this hopper the carbon is passed over the Kiln Feeder (04-FE-01) into the Regeneration Kiln (04-KN-01). Regenerated carbon exiting the kiln is transferred via the Fines Removal Screen (04-SC-402) into the Carbon Quench Transfer Hopper (04-HO-410). It is then conveyed via the Fines Removal Screen (04-SC-403) into Adsorption Tank #6. The Elution Sump Pump (04-PP-401), collects any plant spillage and directs it to the Eluate Tank.

The gold sludge from the elution circuit electrowinning cell is filtered with a filter press (04-FL-01) to remove the water content. The gold containing filter cake is direct smelted using fluxes in a diesel powered smelting furnace (04-FU-01) to produce the final gold product doré bars, which after weighing using a Sartorius Balance (04-WE-01) is stored in the gold safe (04-SF-01).

17.4 Reagents

17.4.1 *Cement*

Cement is delivered to site by truck and transferred directly by pneumatic conveying from the truck to the silo. The cement handling system consists of the following items:

- Two Cement Silos indicated by 01-BN-01, which stores and delivers the cement onto the Agglomerator Feed Conveyor;
- A pneumatic bin activator, which mobilises the cement to discharge from the hopper;
- A rotary valve, which controls the discharge rate of the cement. A proportional controller with a set point related to the Agglomerator Feed Conveyor rate, controls the rotary valve and;

17.4.2 *Cyanide*

Cyanide is delivered to site in shipping containers with loadings of 20 tonnes in 1 tonne bags. Cyanide is mixed with raw water to create a 30.5% w/w solution, in the cyanide mixing system, which consists of the following items:

- A hoist which lifts the bags directly onto the bag splitter;
- A bag splitter;
- A 12.5 m^3 mixing tank, which facilitates the mixing of the solution;
- An agitator, which mixes the cyanide and water to create a homogeneous solution.

The mixed solution is transferred by a cyanide mixing pump to a separate 25 m^3 cyanide storage tank, where two cyanide recirculating pumps, one operating and one standby, circulates the cyanide solution through the plant ring main with a constant pressure bypass return to the tank. In addition, a cyanide dosing pump delivers cyanide from the ring main to the elution circuit in a controlled manner.

The cyanide mixing and storage tanks are contained within a concrete bund with a collection sump to recover spillage.

Emergency supplies of cyanide are held on site in 1 tonne bulk bags in the event of transport interruption to the site.

17.4.3 *Caustic Soda*

Caustic soda is delivered to site in shipping containers with loadings of 24 tonnes in 25 kg bags. They are mixed with raw water to create a solution with 50% w/w concentration, in the caustic mixing system, which consists of the following items:

- A bag splitter
- A hoist which lifts the bags directly onto the bag splitter

- A 12.5 m^3 mixing tank, which facilitates the mixing of the solution
- An agitator, which mixes the caustic soda and the water to create a homogeneous solution.

The mixing system is located in the same bunded containment as the cyanide mixing and storage tanks. Two caustic dosing pumps draw the solution from the mixing tank and deliver it to the elution circuit.

17.4.4 *Hydrochloric Acid*

Concentrated hydrochloric acid is delivered to site in liquid form, in shipping containers with loadings of 23.7 tonnes in 1,185 kg intermediate bulk containers (IBC). The acid is transferred from the IBC's by an acid dosing pump, to the acid wash hopper for carbon acid wash cycle, after combining with the water pumped from the water tank, to create a 3% w/w HCl solution.

The concrete containment bund surrounding both tanks complies with the dangerous goods statutory requirements.

17.4.5 *Activated Carbon*

Activated carbon is delivered in a sea container with loadings of 22 tonnes in 600 kg bulk bags, which is transported to the site by road. It is stored in containers or under tarpaulins to protect it from the weather. When required, it is hoisted up to the top of tank 6 and broken directly into the tank.

17.5 **Services**

17.5.1 *Control Systems*

MCC design will be of the traditional type, incorporating hard-wired signals to PLCs mounted within cubicles installed at the end of each main MCC. The PLCs will monitor the status of each drive and provide full diagnostics at the control room as well as allow remote and local control.

'Smart' MCCs, utilising expensive electronic motor protection relays, daisy chained in a communications network, will not be used.

17.5.2 *Compressed Air*

Plant air and instrument air will be supplied from two (2) compressors operating in duty/standby mode. The instrument air will be dried and filtered. Plant air will be filtered only. Air receivers on both lines, fitted with drain valves, will collect water from the air and provide surge capacity in the system.

17.5.3 *Raw Water*

Raw water will be supplied from the WSF. The plant requires 80m^3/hr of make-up water. Duty and standby pumps will provide raw water to the treatment plant from local storage pond. The raw water quality is assumed to be acceptable for the treatment plant processes such as the stripping plant. This will need to be confirmed during subsequent study phases.

17.5.4 *Potable Water*

The only potable water to be used in the treatment plant will be for drinking water supply and safety showers. To prevent back contamination of the drinking water supply, there will be no potable service points or direct connection of this water to process equipment.

17.6 **Manning**

The Processing Department will come under the control of the Plant Manager/Superintendent. The Processing Department will be responsible for all process operations from the primary crusher to the gold room. Item 9 - Operations Implementation details the organizational chart for processing. The total workforce in the processing area including the maintenance department is forecast at forty four (44).

17.7 **Process Cost Summary (Opex and Capex)**

The estimated operating cost of the process plant is $9.18/ton of ore processed. The estimated capital cost of the process plant is $21.6 Million.

A detailed description of the operating cost and capital cost as well as all assumptions are described in Item 21 of this report.

18. PROJECT INFRASTRUCTURE

18.1 Existing Infrastructure and Services

There are no existing services currently available to support the Mankarga 5 Heap Leach project development. The infrastructure in place is a gravel road that crosses the South Eastern corner of the Tanlouka Concession. The gravel road travels north for approximately 25 km before joining a sealed road near the village of Zèmpasgo. From the junction of the gravel and sealed road there is approximately 100 km of sealed road to the capital, Ouagadougou.

18.2 Site Development

The plant ROM pad and primary crusher will be located approximately 600 meters from the Pit on the northern side of the Heap Pad to minimise conveying distance from the Agglomerator and the mine haulage costs from the Pit to the ROM Pad, while being outside a 500 meter blast radius. The ADR, Reagents, Elution and Gold Room will be located along-side the Crushing and Agglomeration Area to keep all plant in close vicinity. The Pregnant Solution Pond and Storm Water Pond will be located to the south-east of the Heap to make best use of the natural fall in the ground from north-west to south-east. The pregnant solution will be pumped from the pregnant solution Pond to the Wet Plant. An overview of the proposed site development at this stage is presented in Figure 18.1.

Mill feed ore will be introduced into the Crushing and Agglomeration Circuit from an open air stockpile at a design rate of 274 tonnes per hour. The plant will operate 24 hours per day, 365 days per year.

Most of the site infrastructure buildings will be located within a low security fence adjacent to the process plant with a high security fence.

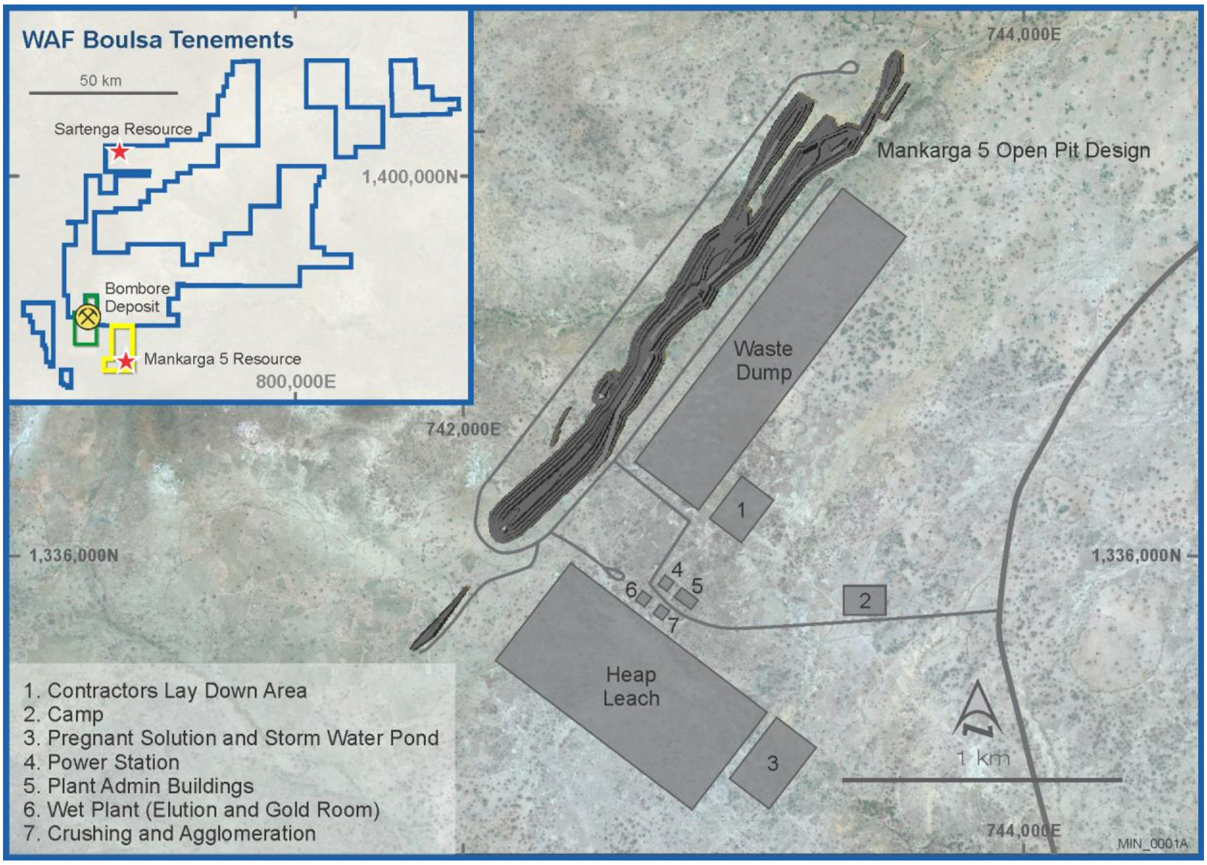


Figure 18.1 Site Development

18.3 Plant Area Buildings

There will be the following furnished plant buildings:

- Administration Building/Office (443 m^2 with 27 m^2 veranda);
- Security / First Aid Clinic (180m^2 with 66 m^2 veranda);
- Mess (32 seater);
- Workshop and store (total floor area of approximately 365 m^2 with 60 m^2 of floor area adjacent to the workshop entrance);
- Laboratory (110 m^2 of internal area);
- Reagents Store (180 m^2);
- 2x Plant Switch Rooms (Crushing and Agglomeration and Wet Plant);
- Change room / Laundry / Ablution.

The construction type for the Admin Building, Security/First Aid Clinic, Mess, Laboratory, Plant Switch Rooms and Change Room / Laundry / Ablution will be:

- Concrete slab on ground;
- 64 mm composite panel walls with insulation;
- 64 mm Insulated composite panel capped by trim flashings at eaves covered with roofing materials;
- Aluminium windows, vertical sliding;
- Exterior doors – steel doors with insulated core Interior doors hardwood exterior with honeycomb core;
- Sheet vinyl floor finish;
- Split system air-conditioning to each office or area;
- Lighting, power, phone and data points (where applicable).

The construction of the Plant Workshop and Reagents Store will be:

- Heavy duty concrete raft floor slab on ground
- Colourbond wall cladding on all walls
- Colourbond roof cladding with translucent panels and ridge vent
- Large roller doors and P / A doors as per drawings
- Lighting and power.

18.4 Power Supply

The power station assumed for this study consists of 3 x 750 kW diesel-fired generator sets, each of which will be modular complete with acoustic enclosures and cooling systems.

A Build Own and Operate (BOO) contract will be adopted for the supply of this facility.

18.5 Specific Scope

- The power station is to be capable of operating unmanned with remote interface for proactive load increase signalling.
- The generation voltage shall be 11 kV.
- The battery limits shall be the 11 kV terminals of the power station Main Switch Board.
- From the Power Station there will be 11 kV feeders which will supply the plant main 11 kV distribution load centre. The Plant will house the step-down transformers to provide low voltage power to the plant facilities and infrastructure.

18.5.1 ***Load***

- Total Installed Power: 1375 kW
- Average Consumption: 793 kW
- Largest motor: Impact Crusher, 320 kW.

18.5.2 ***HV Power Distribution***

11 kV underground lines and overhead lines (away from the plant and mine access areas) will be installed to the following locations:

- Crushing switchroom
- Wet Plant switchroom
- Camp main substation
- Mining contractor's area substation

18.6 **Operational Water Supply**

18.6.1 ***Raw Water***

The plant's raw water will be supplied from the Water Storage Facility (WSF). The WSF will be sized to supply 80 m^3/hr to the plant operations. The WSF will be fed from rain run-off water and any water in the local creek. The exact size and location of the WSF is yet to be determined. It is intended to construct the WSF prior to the wet season to ensure that sufficient water is stored when the plant goes into production. At this stage only an allowance has been made for this and further investigation will be required in the subsequent study phases of the project.

It is important to note that the WSF will need to be constructed prior to the Wet Season, so that sufficient run-off water can be stored for plant operation in the following year.

18.6.2 ***Potable Water***

Water drawn from the potable water bores will be delivered to a water filtration plant for purification. Potable water will be stored in a potable water tank and then pumped to the:

- Process plant
- Camp storage tank
- Contractor's area.

18.6.3 ***Sewage***

One sewage treatment system will be installed to service the plant buildings and the other at the camp to service the accommodation village.

All sewerage water will be treated before the treated effluent is disposed of via an irrigation system.

18.7 **Mining Contractors Infrastructure**

The Mining Contractor is responsible for establishing all of the facilities required supporting their operation and maintenance of all mining LV's, including an LV maintenance garage, office, fuel farm and workshop. West African Resources will provide access to an area located adjacent to the plant site for the Contractor's exclusive use. Raw water, power and communications will be supplied to the battery limit of this nominated area, also by West African Resources.

The mining contractor will also be responsible for provision of their own camp. No allowance has been made in the Camp described in Item 18.9 for the accommodation of mining contractor personnel.

18.8 **Communications**

There is no significant or reliable telecommunication infrastructure in the immediate mine site area at the present time. Cell phone coverage does exist and is intermittent. It is expected that telecommunications will be established by satellite link which will include voice, email and internet traffic for the process plant, camp and main office.

A conventional VHF radio system with hand held radios and chargers will be provided for site coverage. Radio communications will be via separate channels for mining and process plant. There will be a separate, dedicated emergency channel.

18.9 **Accommodation**

West African Resources requires accommodation for 65 personnel (mining contractor not included) to manage and maintain the process plant and heap leach during normal operations.

It is envisaged that the accommodation camp will provided by a contractor on a Build Own and Operate (BOO) arrangement.

18.10 **Security**

From a security perspective the project footprint is configured as small as possible so that security personnel and systems have to cover as minimal an area as possible. The security provision will consist of:

- Access control to the mine lease at several locations (including mine, plant and camp).
- Read in / Read out access control.
- Two stage gates for vehicle access.
- Electronic surveillance including CCTV within the plant area and at several key locations around the property.
- Physical and visual barriers.
- Fencing (Double, single and Cattle).
- Lighting.
- Patrols.

Double security fencing 4 m apart will enclose the process plant which is demarcated as the high security area. A single security fence will enclose the heap leach, mining contractor's area, main administration building area, laboratory, camp, magazine and TSF.

A cattle fence will be installed around the WSF.

The security fence will consist of a 1.8m high fence with three rows of barbed wire at the top of the support posts.

Electronic security will be provided by a reputable security system provider and audited by an independent security consultant experienced in security installations in Africa and monitored by the security contractor. The security system is expected to be configured as follows:

- Installation of Integrated Security Solution consisting of a combination of various access control points, coupled with intruder detection devices, supported by closed circuit television (CCTV) system consisting of approximately fifteen cameras located across the site; and
- Some of the remote cameras and access control locations will be interlinked via the installation of a line-of-sight wireless network connection with a common receiver located appropriately to operate within "line of site" protocols.

18.11 **Roads**

18.11.1 ***Site Access Road***

The Site Access Road will be built from the existing gravel road to the East of the site (that travels north for approximately 25 km before joining a sealed road near the village of Zèmpasgo). The Site Access Road will travel past the camp to the Admin buildings – a total of 1.8 km (as shown in

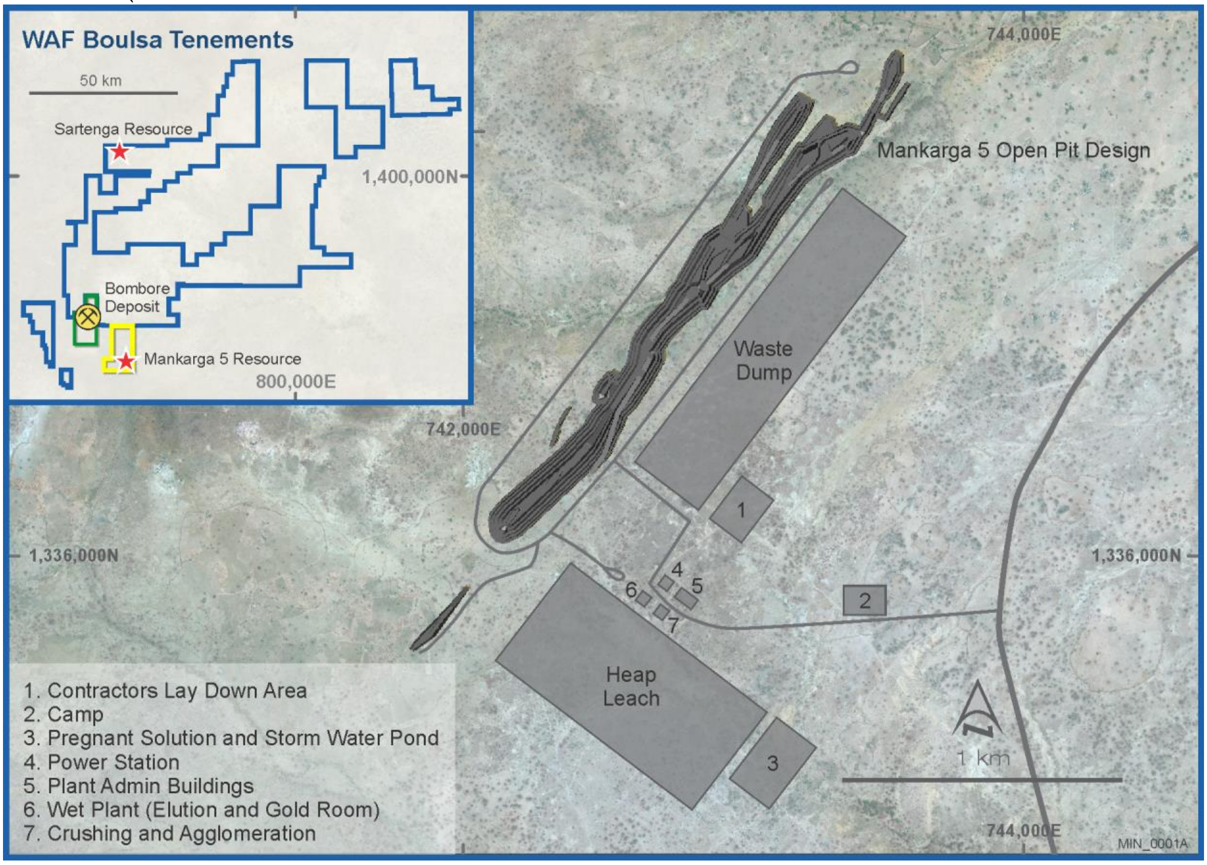


Figure 18.1Figure 18.1).

18.11.2 *Haulage and General Site Roads*

An allowance has been made for 6.5 km of roads on site as illustrated in

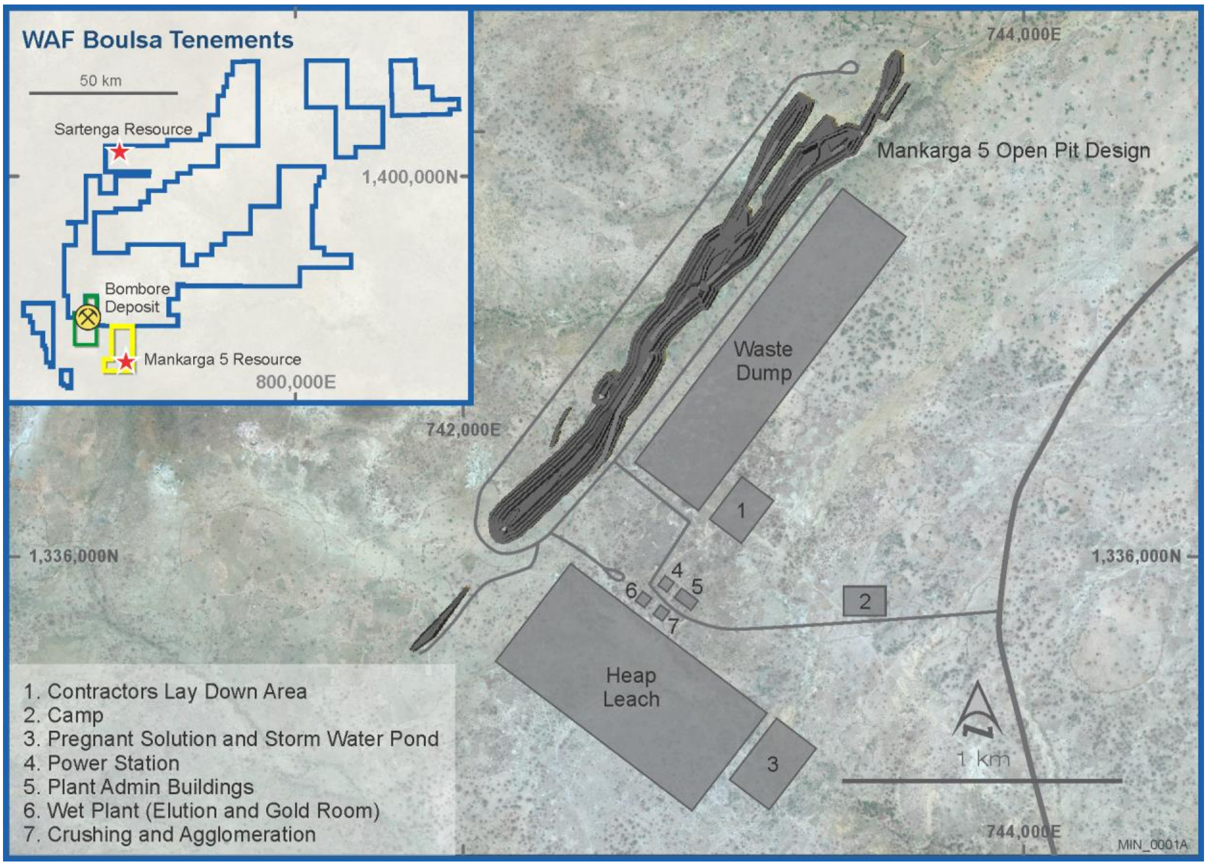


Figure 18.1Figure 18.1.

18.11.3 *Upgrade of the Existing Gravel Road to Zèmpasgo*

The existing road to Zèmpasgo that passes to the East of the site (and to which the Site Access Road is connected), is likely to require an upgrade for the construction and mine operations traffic. At this stage only an allowance has been made for this and further investigation will be required in the subsequent study phases of the project.

18.12 PROJECT IMPLEMENTATION

18.12.1 *Introduction*

This section describes the proposed organisation and philosophy that is considered necessary for the effective design, engineering, construction and commissioning of the treatment plant and associated infrastructure and services.

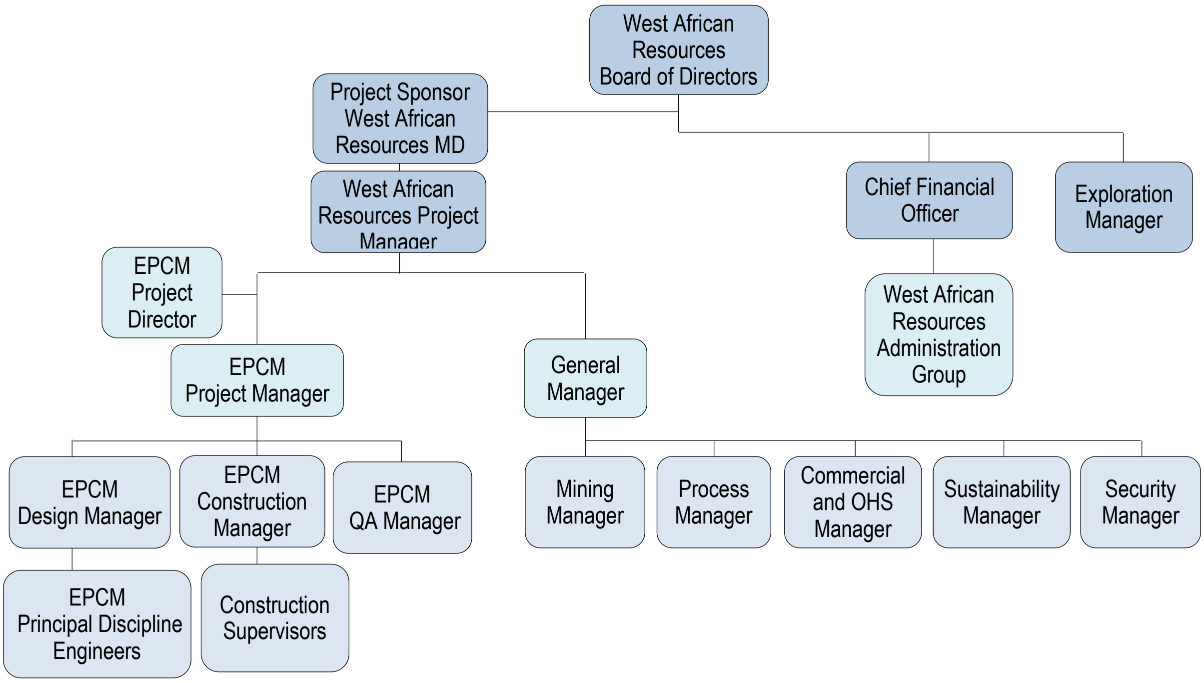
The design and operation of the Mankarga 5 Heap Leach Project will conform to the requirements of the various regulations in Burkina Faso and will adopt, as a minimum, relevant Australian Standards.

A major goal during the execution phase of the project is the attainment of the best safety record possible. To accomplish this, it will be required that all contractors and involved personnel adhere to defined safety objectives and standards developed by the Engineering, Procurement and Construction Management (EPCM) consultant in consultation with West African Resources. These will include all appropriate safety requirements of Burkina Faso and the safety standards required of a similar project undertaken in Australia.

18.12.2 ***Project Management Plan***

The project delivery will be managed by the West African Resources Project Manager for the Mankarga 5 Heap Leach Project, with the proposed project delivery method as EPCM. The EPCM consultant will be selected during the closing stages of the Bankable Feasibility Study (BFS). The General Manager – Burkina Faso Operations will be appointed shortly after the project finance is approved. The overall organisation chart is shown in Figure 18.2.

Figure 18.2 Mankarga 5 Heap Leach Project - Project Organisation Chart



18.12.2.1. ***Administration***

West African Resources will implement overall project administrative controls internally within their corporate offices in Subiaco and Burkina Faso. The West African Resources Project Manager will work very closely with the Chief Financial Officer of the company to avoid duplication of resources where possible.

The Project Manager will establish work authorisation reporting structures within the project to keep him informed of project progress and enable him to undertake corrective and preventative actions to achieve the project charter should situations arise where such action is necessary.

The EPCM consultant will undertake the EPCM for the process plant and directly associated infrastructure, while other consultants will be responsible for the engineering of other infrastructure facilities. The EPCM consultant will manage the major equipment procurement from Australia. An important objective will be to maximise the extent of procurement from Burkina Faso and the EPCM consultant will manage that in conjunction with West African Resources' local staff in Burkina Faso.

West African Resources will raise company orders for work to be undertaken in accordance with the Procurement Management Plan. The value of those orders will be recorded into the project accounting system to be established at the office in Subiaco, together with the value budgeted for the order and the variance.

Each month, using the outputs from the accounting system and knowledge gained from reports from contractors and other project personnel, the EPCM consultant will produce a project cost report for West African Resources which will identify the expenditure to date, the anticipated expenditure to complete the project, the budget variance to complete the project and the cash flow forecast.

In addition, the EPCM consultant will collate weekly short-form reports and more comprehensive monthly reports of project performance against schedule and budget. These comprehensive monthly reports will provide the company directors and project financiers with adequate information about the cost and time performance of the project to ensure that funding is available as it is required.

The EPCM consultant will undertake the basic project administrative and implementation tasks for the plant and infrastructure development. However, the overall project administration and control will be managed by the company's corporate administration in Subiaco. The EPCM consultant, the Chief

Financial Officer and the Project Manager will establish administrative, safety, occupational health and personnel policies for the project implementation, and the same policies and procedures will be further modified and used for the operational phase of the project.

Payment of employees and contractors will be done by West African Resources from the corporate office in Burkina Faso. Based upon the reports prepared by the EPCM consultant, approved by the Project Manager, and following approval by the company's directors and project financiers, each month the company will draw down sufficient funds against the project loan facility to pay the projected expenditure for that month.

18.12.2.2. ***Engineering Procurement and Construction Management (EPCM)***

Engineering

The EPCM consultant will provide design drawings, specifications and procurement documents for the new plant and directly associated infrastructure, camp and plant buildings. The design and documentation for other infrastructure e.g. roads, heap leach pads and water storage facility will be completed in Australia by a suitably qualified sub-consultant and managed by the West African Resources Project Manager.

Procurement

Procurement of all capital expenditure items will be based upon recommendations received from the EPCM consultant. For equipment procured in Australia, the EPCM consultant will prepare the documentation, call for prices and tenders, prepare tender evaluations, negotiate prices with contractors and make recommendations to West African Resources in the form of drafted contracts and purchase requisitions. For equipment to be procured from Burkina Faso, the Construction Manager will call for prices or tenders and award contracts based upon documentation prepared either in Burkina Faso or in Australia.

Items of major expenditure will incorporate contract terms and conditions appropriate to the level of expenditure. Minor expenditure will rely upon the standard conditions of purchase for company orders. Expenditure greater than US$500,000, will generally be documented as a standard form contract. Australian Standard contracts will be used for contracts awarded in Australia and FIDIC, DIN or ISO standards will be used for contracts awarded outside Australia. The EPCM consultant will develop annexure to those as required and as appropriate to the circumstances.

Construction management

The Construction Manager will appoint subordinates to assist with management of the construction sites at the Mankarga 5 site. Those personnel may be employees, contractors or subcontractors. The personnel required will be:

- Site Engineering – Mechanical and Electrical
- Logistics Manager
- Earthworks & Concrete Contract Supervisor
- Structural Mechanical and Piping Contract Supervisor
- Electrical Contract Supervisor
- Emergency Services and Safety Supervisor
- Stores and Procurement Supervisor
- Site Clerk

18.12.3 ***Work Breakdown Structure***

18.12.3.1. ***Overview***

The work will be divided into the following broad disciplines for the purpose of awarding contracts and placing orders:

- Earthworks
- Concrete works

- Transport and logistics
- Structural steel and plate-work supply
- Mechanical equipment supply
- Structural, mechanical and piping installation
- Electrical and instrumentation equipment supply
- Electrical and instrumentation installation
- Water Storage Facilities
- Pipelines
- Plant infrastructure
- Camp
- Access roads
- Diesel power station
- EPCM
- Owner's costs

The work will be identified as either work that can be scoped for a firm price with the Contractor taking most of the risk away from West African Resources, or work that cannot be scoped for a firm price without West African Resources retaining the risk (either paying for the worst case upfront or having the risk present as contract variations).

The work packages will be let as time and materials, lump sum price, or unit rate contracts or as a combination of all three. Where practical, however, lump sum pricing (with adequate provision for variations) will be adopted.

18.12.4 *Procurement Management Plan*

The contract packages identified in the Work Breakdown Structure (WBS) will be managed as described below.

18.12.4.1. *Earthworks*

These works will be the subject of a detailed design, specifications, quantities and drawings sufficient to invite contractors to tender. Negotiations will proceed to achieve a lump sum construction contract against the fixed scope of work with unit rate for variations. It is expected that a Burkina Faso consulting surveyor will do the initial survey set-out work and regular audits, with the successful contractor undertaking their own day-to-day survey. These contractors are expected to come from Burkina Faso.

18.12.4.2. *Concrete Works*

These works will be the subject of a detailed scope of work, specifications, quantities and drawings sufficient to invite contractors to tender. Negotiations will proceed to achieve a lump sum construction contract for the concrete work with unit rate for variations, and the supply of concrete will be an integral part of the concrete works package. Tendering contractors are again expected to come from Ghana and Burkina Faso.

18.12.4.3. *Transport and Logistics*

Transport and Logistics will be tendered to an international organisation who will manage the transport contracts. This organisation will be established with general and specialist transport experience for general freight, oversize freight, overnight freight and custom clearance. Individual loads will be charged in accordance with the agreed arrangements.

18.12.4.4. *Structural Steel and Plate-work Supply*

This contract includes supply and fabrication of structural steel and plate-work. The offsite fabrication should be one contract but could be split into two separate contracts for structural steel and plate-work. All contractors invited to tender will receive detailed scope of work with specifications and shop detail drawings. The contractor will provide detailed schedule of rates for all items listed in the Scope of Work. Consideration will be given to the location of the fabrication contractor in regards to the nearest shipping port. Negotiations will proceed to achieve a lump sum contract against the fixed scope of work with unit rate for variations.

18.12.4.5. ***Refurbishment of Second Hand Equipment***

Refurbishment of the already purchased second hand plant will be done in Burkina Faso as far as is reasonably practical.

Where detail drawings are available for the steelwork and plate work of the second hand plant, an assessment will be made, during the subsequent study phases, whether it would be more cost effective to fabricate off shore (in a low cost centre such as the Philippines or Thailand) or whether the structures and plate work be refurbished/repainted.

The Crushing, Agglomeration and Stacking Plant will be almost an exact copy of the Abore Plant (plant that was purchased), with the upgrade of the Secondary Crusher to achieve the higher throughput. All conveyor mechanical components will be purchased new and fitted to the existing conveyor structures.

18.12.4.6. ***Mechanical Equipment Supply***

The EPCM consultant will tender, evaluate and recommend the supply of all major mechanical equipment ex-works, CIF, FOB or any other delivery conditions. In most cases the EPCM consultant will be responsible for the tendering process and West African Resources will raise the orders accordingly. Most of the minor equipment will be purchased by the installation contractor, or by the site procurement team.

18.12.4.7. ***Structural, Mechanical and Piping Installation***

These works include the provision of all labour, equipment, supervision, installation and commissioning of all structural, plate-work, mechanical and piping supplied by West African Resources. The contract will be a combination of lump sum for mobilisation, establishment, demobilisation and installation of all the scoped work with unit rates for labour, equipment and material for all variations.

18.12.4.8. ***Electrical and Instrumentation Equipment Supply***

The EPCM consultant will tender, evaluate and recommend the supply of all major electrical and instrumentation equipment ex-works, CIF, FOB or any other delivery conditions. In most cases, West African Resources will be responsible for the tender process and will raise the orders accordingly. Most of the minor equipment will be purchased by the installation contractor, or by site procurement team.

18.12.4.9. ***Electrical and Instrumentation Installation***

These works include the provision of all labour, equipment, supervision, installation and commissioning of all the electrical and instrumentation equipment supplied by West African Resources. This contract will include all plant and infrastructure facilities, which will be detailed in drawings, specification and scope of work. The contract will be a combination of lump sum for mobilisation, establishment, demobilisation and installation of all the scoped work with unit rates for labour, equipment and material for all variations.

18.12.4.10. ***Water Storage Facilities***

These works include the provision of all labour, equipment, supervision, construction and commissioning of the WSF. This contract will be based on detailed design, specification and scope of work provided by a suitably qualified sub-consultant and construction management by the EPCM consultant. The contract will be a combination of lump sum for mobilisation, establishment, demobilisation and installation of all the scoped work with unit rates for labour, equipment and material for all variations. Construction material will be provided by West African Resources.

It is important to note that the WSF will need to be constructed prior to the Wet Season, so that sufficient run-off water can be stored for plant operation in the following year.

18.12.4.11. ***Pipelines***

These works include the provision of all labour, equipment, supervision, installation and commissioning of all pipelines outside the process plant which will be detailed in drawings, specification and scope of work. The contract will be a combination of lump sum for mobilisation, establishment, demobilisation and installation of all the scoped work with unit rates for labour, equipment and material for all variations.

18.12.4.12. ***Plant Infrastructure***

These works include the provision of all labour, equipment, supervision, fabrication, installation and commissioning of all plant infrastructure. This works will be split into a number of contracts based on detailed design, specification and scope of work provided by the EPCM consultant and other consultants, while construction management will be done by the EPCM consultant.

Those contracts will be a combination of lump sum for mobilisation, establishment, demobilisation and installation of all the scoped work with unit rates for labour, equipment and material for all variations.

18.12.4.13. ***Camp***

These works include the provision of all labour, equipment, supervision, fabrication, installation and commissioning of the camp. This works will be split into number of contracts based on detailed design, specification and scope of work provided by the EPCM consultant and other consultants, while construction management will be performed by the EPCM consultant.

Those contracts will be a combination of lump sum for mobilisation, establishment, demobilisation and installation of all the scoped work with unit rates for labour, equipment and material for all variations.

18.12.4.14. ***Access Roads***

These works include the provision of all labour, equipment, material, supervision, construction and commissioning of the access roads which will be detailed, specification and scope of work. The contract will be a combination of lump sum for mobilisation, establishment, demobilisation and installation of all the scoped work with unit rates for labour, equipment and material for all variations. Construction materials will be provided by West African Resources.

18.12.4.15. ***EPCM***

The EPCM consultant will negotiate a time and materials contract with regular reporting against budget. This arrangement is most appropriate for this project and provides the maximum flexibility for accommodating changes needed to address problems caused by manpower shortages and/or contractor performance problems. Shop detailing of structural steel and plate-work will form part of this package and will be completed on tonnage rates.

18.12.4.16. ***Commissioning***

This work which forms part of the EPCM will be performed by a combination of operations personnel, the EPCM consultant personnel, and other contractor’s personnel under the management of the Commissioning Manager. Where possible, sections of plant which have been commissioned will be handed over to operations that will be responsible for operating and maintaining that section of the plant. The Commissioning Manager will prepare outstanding work lists (punch lists) for sections of plants which have been handed over to operations and will ensure that the contractors complete all punch list items before final payment is made.

18.12.4.17. ***Owner’s Costs***

The West African Resources Project Manager will manage the owner management team and will report on owner’s costs. As operations management personnel are appointed they will be allocated responsibilities for particular areas of the owner’s cost budget and will report expenditure to the West African Resources Project Manager. Those costs will be reported individually against the following sub-headings:

- Insurance
- Mining Consultant

- Minor Consultants
- Mining Contractor
- Mining Pre-production
- Land and Crop Compensation
- Operations Establishment
- Spares
- First Fill
- Training

18.12.5 ***Project Schedule***

The following pre-development activities, which are expected to take 9 months, will need to take place in advance of full project approval:

- Completion of a Bankable Feasibility Study.
- Environmental and Government approvals.
- Resource drilling of the ore body for conversion to reserve.

The project is expected to take 12 months from full project approval and EPCM contract award to commissioning. The following will need to be in place at the start of the 12 month period:

- Tendering and award of an EPCM contract and commencement of detailed design activities
- Tendering of the Water Storage Facility, but not yet awarded.
- Tendering of camp buildings, but not yet awarded.
- Diesel power station, specification, and tendering, but not yet awarded.

Please refer to Figure 18.3 for a preliminary Project Implementation Schedule.

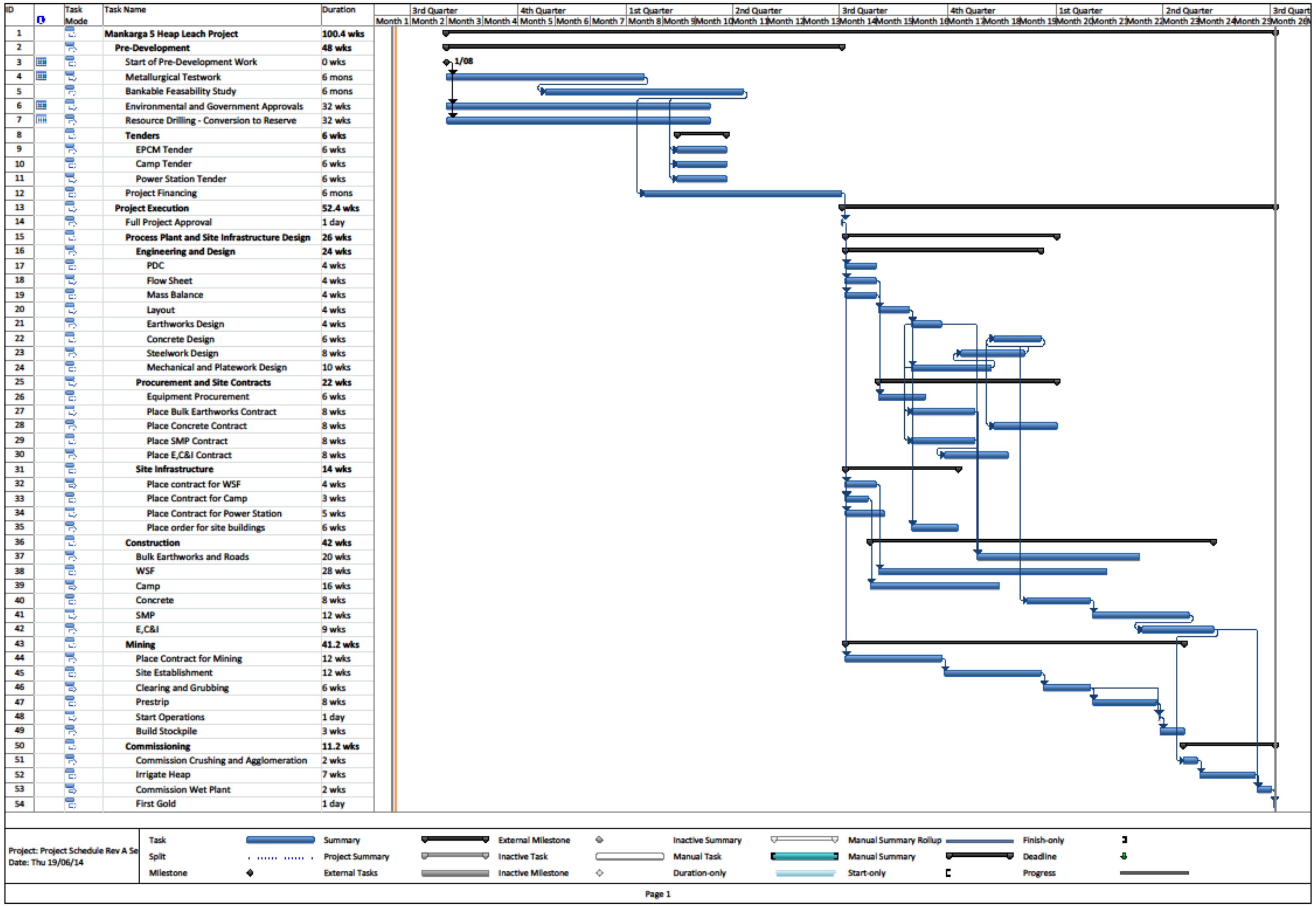


Figure 18.3 Project Development Schedule

18.13 OPERATIONS

18.13.1 *Introduction*

This section covers the following areas:

- Organisation structure
- Recruitment and employment policies
- Accommodation and support facilities

The General Manager – Mankarga 5 Operations will be responsible for the operations. There will be 102 personnel between site and the local office in Ouagadougou - excluding mining contractors and it is anticipated that 80% of these will be Burkina Faso nationals.

Contractors will be utilised for various areas such as mining, laboratory, medical, training, personnel transport and general freight services.

18.13.2 *General Services*

18.13.2.1. *Operating Roster*

The processing and maintenance operations will run 24 hours per day comprising two 12-hour shifts, seven days per week,. The roster for these functions will be a two panel on/one panel off roster, requiring three panels to manage shift overlap. Thus, each panel will work 14 days out of every 21. Expatriates will work 8 weeks on and 4 weeks off.

The majority of process plant maintenance personnel will work a dayshift roster only with night shift covered with a skeleton crew to cover breakdown issues only. All planned maintenance will be completed on dayshift.

The Administration, Mining, General Manager's and Sustainability departments will work 10 hours per day on a 14-on, 7-off roster. Mining will be conducted as per the shift roster of the Mining Contractor expected to be 12 days per two-week period working two shifts of 10 hours duration.

18.13.2.2. *Mining Contract*

All mining operations will be carried out by a suitably experienced open pit mining contractor. This contractor will also be responsible for the mining-related construction activities, including Run of Mine (ROM) pad and haul road construction and maintenance during operations. The contractor will also supply its own lighting equipment. The contractor is expected to supply all of its own maintenance equipment and facilities. Scheduled maintenance and repair of all equipment will occur in the mine contractor's workshops. Power and water will be supplied to the contractor's workshop area. In all other areas it is expected that the contractor will source its own supply.

Advantages of contract mining include:

1. A reduction in initial capital;
2. Increased operational flexibility and the ability to change (ramp up and ramp down);
3. Access, if required, to specialised services and equipment; and
4. Focus of client attention on gold recoveries and core business activities.

18.13.2.3. *Power Management*

Power for the project will be provided by diesel power plant on site.

18.13.2.4. *Fuel Supply and Delivery*

A long term contract will be entered into for supply of fuel. The fuel supplier will provide and maintain a central fuel storage facility, which will provide fuel for the processing plant and mining contractor.

18.13.2.5. ***Reagents Supply and Delivery***

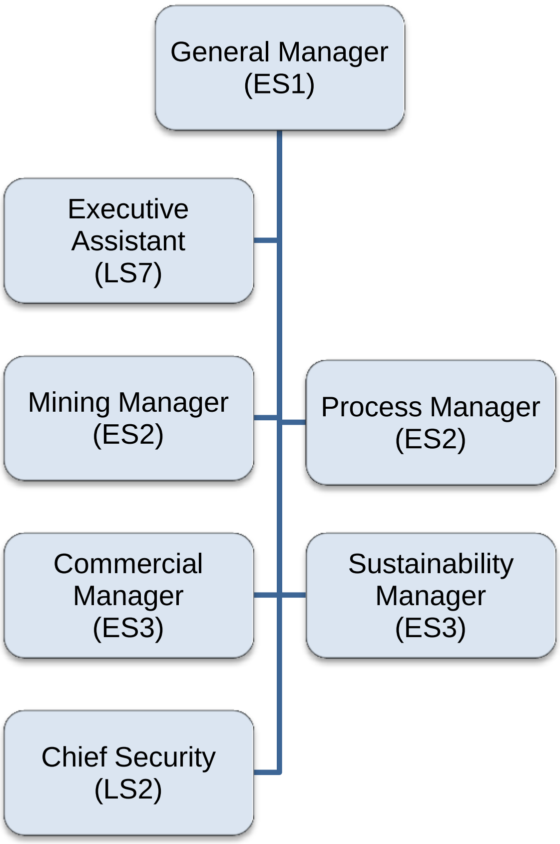
Reagent supplies for Mankarga 5 will be sourced under bulk supply agreements with local vendors having proven track record in the supply of chemicals to the mining industry. All bulk reagents will be delivered into and stored within facilities owned by West African Resources Ltd.

18.13.3 ***Operations Organisation Structure and Manning***

18.13.3.1. ***General Management Structure***

All operations at the mine site will be managed by the General Manager. The proposed reporting structure is shown in Figure 18.4.

Figure 18.4 General Management Organisation Chart



18.13.3.2. ***Employee Classifications***

The organisation chart and salary costings have been based on a two-element classification system as depicted in Table 18.1:

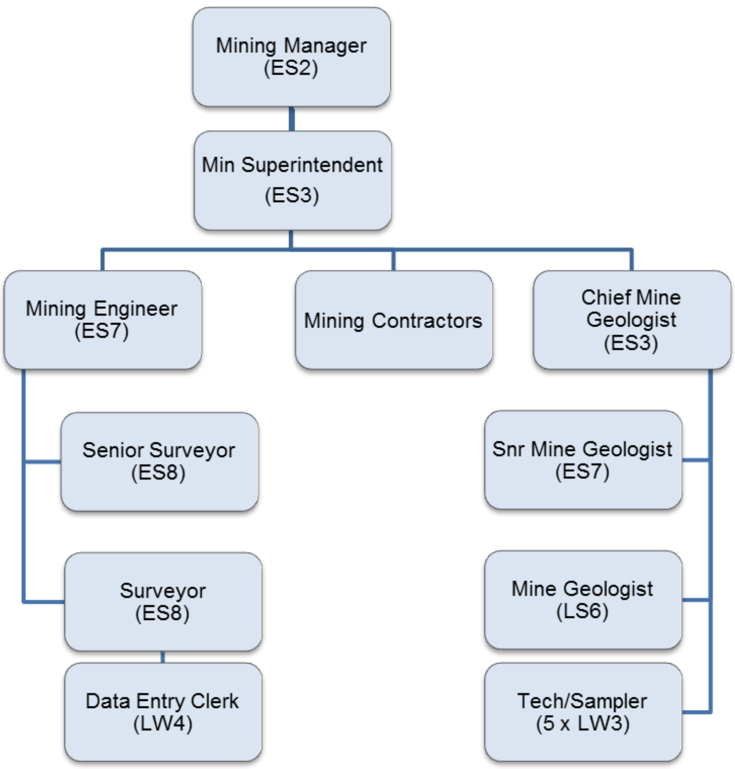
Table 18.1 Labour Classification System		
	Code	Description
Labour source	E	Expatriate
	L	Local
Labour type	S	Staff
	W	Wage (Non-Staff)
Labour level	1	Highest Level
	7	Lowest Level

For example, a job described as LS4 would be a local staff employee with a moderate seniority level.

18.13.3.3. *Mining*

The Mining Department (see Figure 18.5) will have three sections under the control of the Mining Manager. These sections are mining, contractor management and geology. These positions will be filled by a mixture of expatriate and national employees sourced both from local villages, within the broader Burkina Faso mining community and abroad where necessary. The total workforce in the mining area is forecast at 13 persons not including mining contractors.

Figure 18.5 Mining Organisation Chart



The project will contract the mining activities to a suitably skilled and experienced Mining Contractor and the Company will require that the contractor's management team be headed by a senior supervisor at an experienced level of at least ES3 and it is likely it will be headed by an expatriate.

18.13.3.4. ***Processing***

The Processing Department (see Figure 18.6) will come under the control of the Process Manager and will be responsible for:

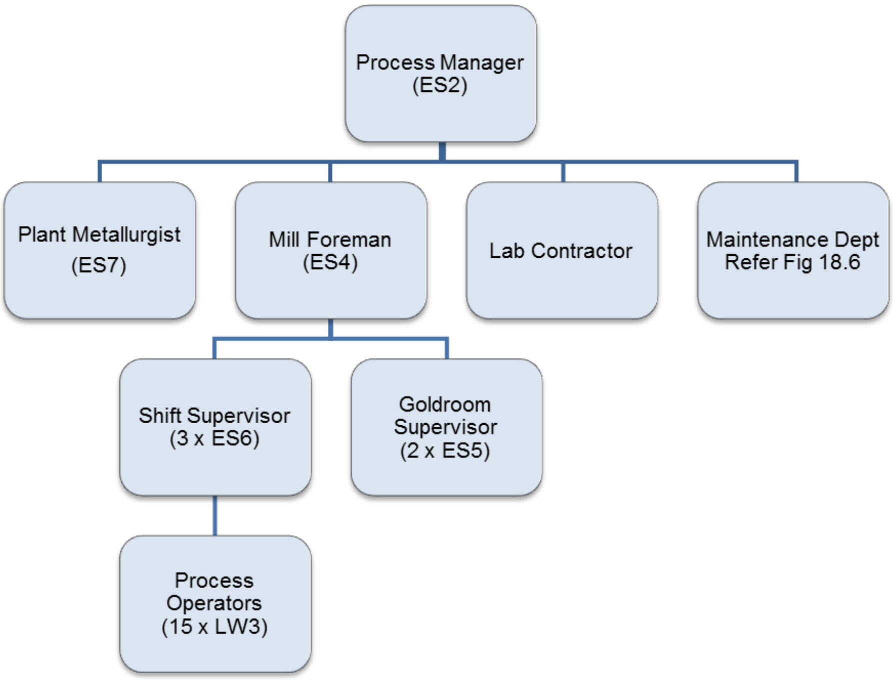
All process operations from the primary crusher to the gold room

- All lab work will be done offsite as it is only one hours travel to the nearest lab.
- Maintenance of the plant including purchasing of all process plant maintenance and operations requirements

The total workforce in the Processing area is forecast at 44 including Maintenance and Purchasing personnel, excluding Lab Contractors.

These positions will be filled by a mixture of expatriate and national employees sourced both from local villages, within the broader Burkina Faso mining community and abroad where necessary:

Figure 18.6 Process Organisation Chart



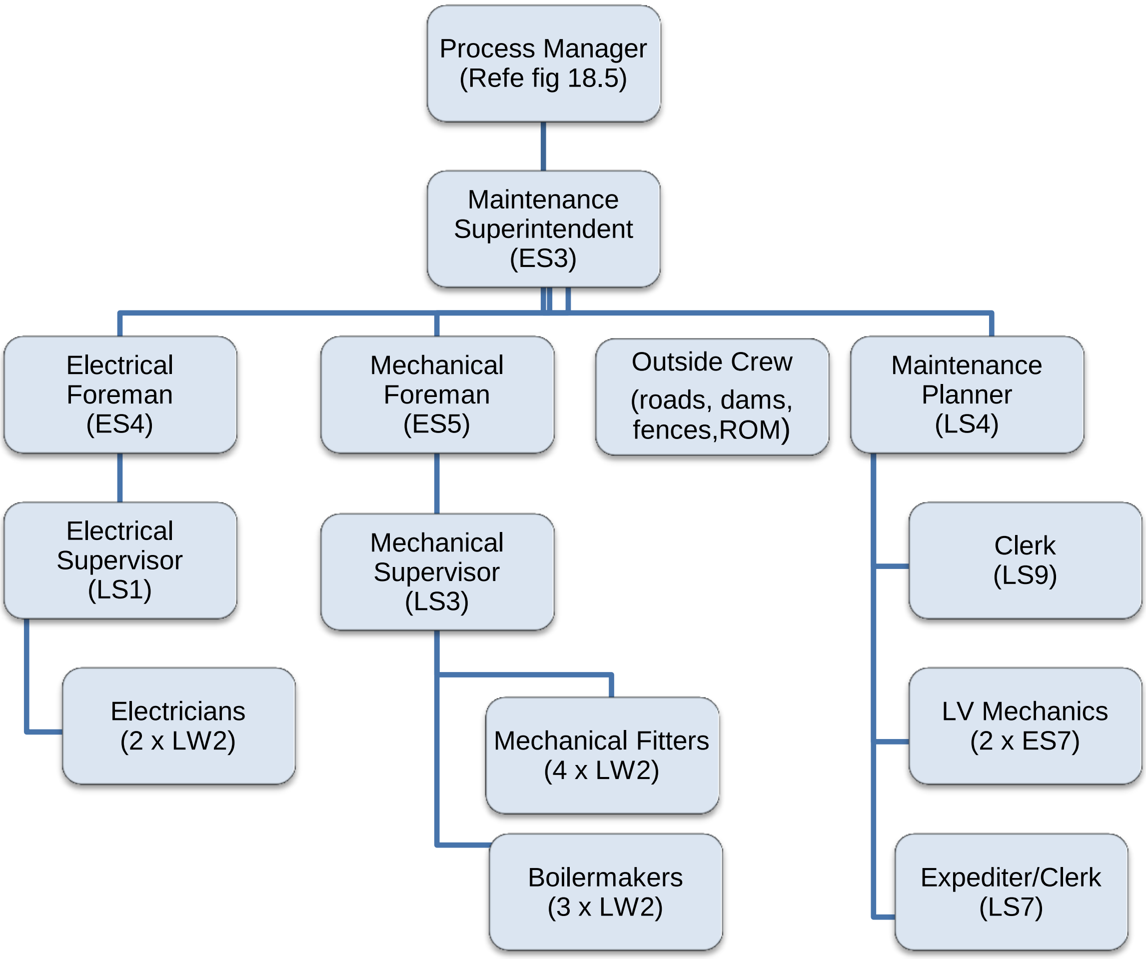
18.13.3.5. ***Maintenance***

Plant maintenance functions will come under the control of the Process Manager (see Figure 18.7).

The Maintenance Department will be responsible for all maintenance planning and scheduling and implementation of both mechanical and electrical maintenance work. Purchasing and stores management will be included within this department as the process plant has the greatest equipment requirements. Quality Assurance and Quality Control will be a Commercial Department function as will regular reviews to ensure dead stock remains within acceptable norms.

The total workforce of the Maintenance area is forecast at 22 persons.

Figure 18.7 Maintenance Organisation Chart



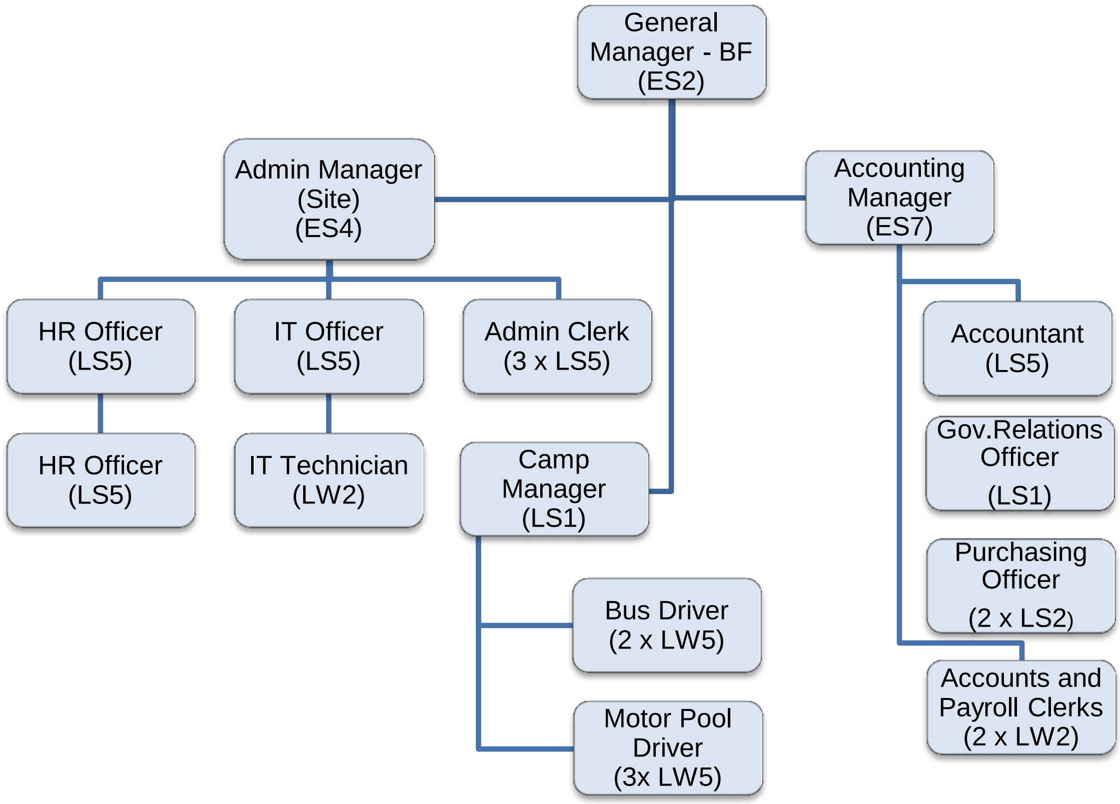
18.13.3.6. ***Commercial***

The Commercial and Administration functions will be managed by the General Manager - Burkina Faso (see Figure 18.8). This position will be filled by an expatriate at the level of ES2 and will be based on site but will also spend significant periods of time in Ouagadougou.

The Commercial and Administration Department will be responsible for the following functions:

- Financial management reporting
- Accounts payable and account receivable
- Payroll and human resources
- Taxation and other regulatory (financial) obligations
- Administration functions
- Contracts and legal services
- Insurance
- Statutory reporting

Figure 18.8 Commercial and Administration Organisation Chart



It is also the current plan that maintenance and cleaning of site buildings and bus drivers will be locally based employees.

The total workforce of the Administration area is forecast at 29 people.

18.13.3.7. ***Sustainability Department***

The Sustainability Department staff will manage Environment and Community Relations, Occupational Health and Safety and Training functions and will be controlled by an expatriate employee of at least level ES3. This department will be responsible for the following:

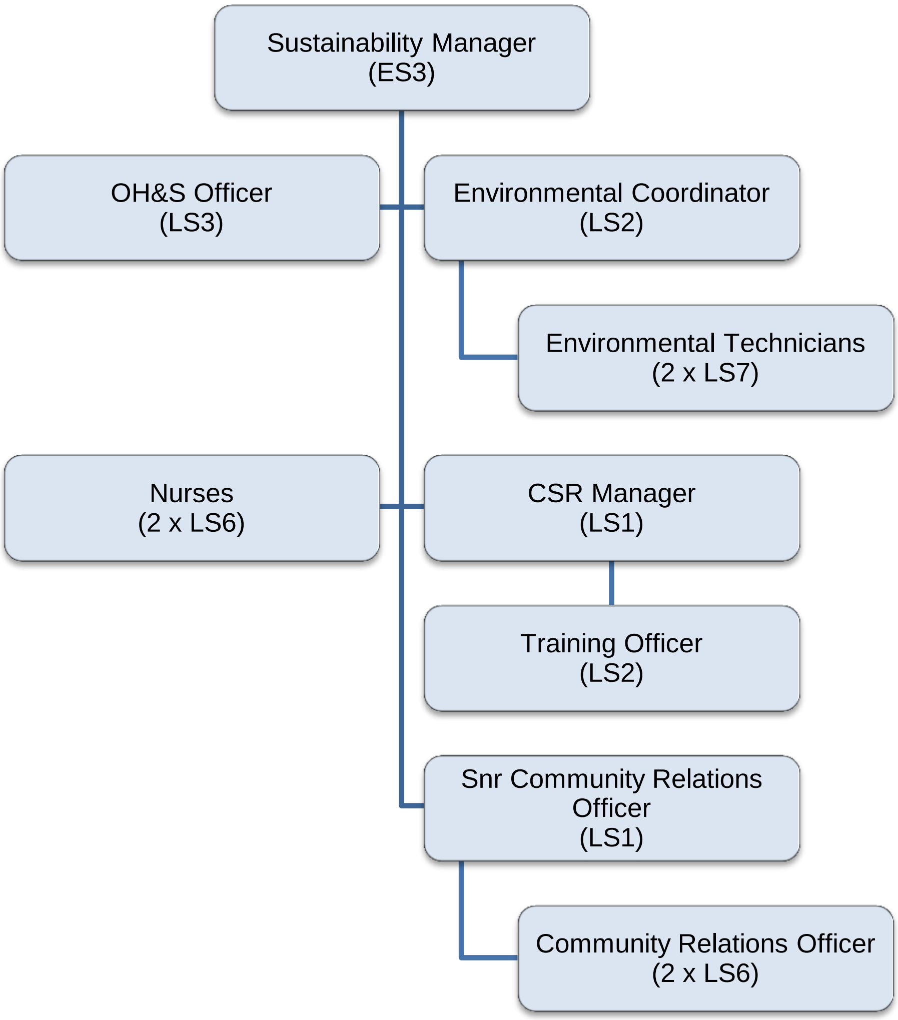
- Environmental monitoring
- Rehabilitation
- Community relations
- Occupational health and safety (including training)
- Nursing and first aid
- Emergency Response function organisation

The environmental function will cover rehabilitation, compliance monitoring, reporting and ecology, and will be responsible for the implementation and ongoing performance of the Environmental Management Plan (EMP). The environment team will work with rehabilitation functions ensuring the clean sustainable return of the active mining areas to socially responsible land usage as jointly agreed with the long term land users.

Community relations and services will be involved with community management and joint initiatives with the local community, with a view to benefitting and enriching the social fabric through understanding and open dialogue with the mine. This department will also be responsible for coordinating the emergency response team which will be drawn from the shift crews as necessary.

The total workforce of the Sustainability Department (see Figure 18.9) has been estimated at 11 people.

Figure 18.9 Sustainability Organisation Chart

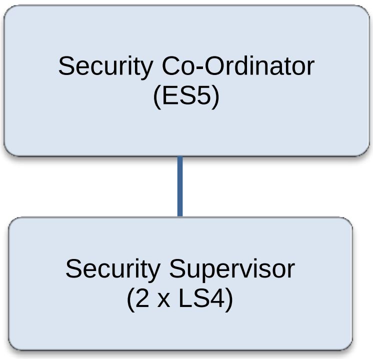


18.13.3.8. ***Security***

The Security staff (see Figure 18.10) will manage all aspects of mine site security functions and will be controlled by an employee of an experience level of at least LS2.

It is expected that the security team will consist of approximately 34 members with 3 supervisors and 30 guards, some of whom may be armed.

Figure 18.10 Security Organisation Chart



18.13.4 ***Workforce Make-Up***

The breakdown of employees by expatriate, local staff and local non-staff on a departmental basis is summarised in Table 18.2:

Table 18.2 Personnel Numbers by Category and Department

Department	Expatriate	Personnel Numbers		Total
		Salaried	Wage	
Management	1	2	-	2
Mining	5	7	6	13
Process	7	7	15	22
Maintenance	2	6	16	22
Commercial	3	16	13	29
Sustainability	1	11	0	11
Security	1	3	0	3
Total	20	52	50	102

18.13.5 ***Recruitment***

18.13.5.1. ***Recruiting Sequence***

Recruitment will commence with the early employment of senior local supervisors in the areas of environment, safety and community relations. These personnel will overlap with the construction phase of the project.

It is expected that the General Manager – Burkina Faso will be employed during the first four months after formal approval of the project and he will be responsible, in conjunction with West African Resources Perth management, for employing the first level managers. These managers will be involved in determining exact manning levels in their departments and will oversee the recruiting process for their own departments.

18.13.5.2. ***Training and Development***

The majority of employees will be drawn from the project area and will generally be unskilled and living in the vicinity. Therefore, training programs must begin at a fundamental level, be delivered in English, and follow instructional methodologies that are known to be effective with the Burkina Faso learning style.

A recruiting and selection procedure for employees including maintenance trainees and operator trainees will be developed before operations begin. This will permit selection of qualified prospective employees (trainees) for pre-employment training programs. The best possible training would be for people to build, commission and then operate the project.

18.13.5.3. ***Skills Training***

As training programs are implemented, more effective means and materials may be determined. Scheduling will need to remain flexible to adjust to changes in deliveries or start-ups and the availability of facilities and locations for some training programs would need to be closely monitored. The options of on-site or off-site (contractor) training alternatives will be considered.

Operations employees in both the mine and process departments will be provided job specific training after accepting a job offer which will include a skills test. This training will be conducted at on-site training facilities and in the actual job location. Instructors will be Burkina Faso nationals, vendor-supplied trainers, or West African Resources training personnel.

Depending on equipment arrival schedules, contract equipment operator trainers could be utilised to assist the full time mine operations training staff. This is in addition to vendor provided trainers who most likely will not be on site as long as required to complete all operator training.

Clerical employees will be tested prior to employment for skills related directly to their new job responsibility. After their attendance at new employee orientation training these employees will be provided on the job training in software applications or other skills necessary to perform effectively.

Expatriate employees will be provided cultural and language training as required and practical prior to reporting to their new work assignment. They will also attend departmental training sessions related to specific policies, processes or equipment unique to their new work assignment.

Those expatriates participating in the training of Burkina Faso nationals will attend a "train the trainer" session to familiarise them with training material formats. They will also review the methodologies considered most effective in the training of Burkina Faso nationals.

The Emergency Response training program will be developed by representatives of the Safety, Health and Environment Department.

After this training, selection can be made for streaming trainees into construction work, and then hiring directly into employment for commissioning and later production.

18.13.5.4. ***Operator Training***

A substantial recruiting and training effort will be required to ensure that qualified operators are available for mining, processing and infrastructure operations. Trainers will need to be recruited for these departments to be used in conjunction with vendor trainers, and it will be their task to supervise the development of operating personnel and the structuring of training.

Operator training programs for mine, process and infrastructure management facilities will be conducted on site by contracted, qualified vendors, or West African Resources trainers. These trainers will assist in the development of the curriculum (where required) for the specific areas of equipment, and conduct classes at designated training rooms close to the operating area. Classroom training will be scheduled with appropriate period of training activity in the production environment. Vendor produced training equipment and materials will supplement materials available from or developed by West African Resources or contracted curriculum development teams.

Candidates for employment as operators for the mine, process and infrastructure facilities will be selected through the normal employment process and will be skills-tested. Many candidates for traineeships may have completed training at local vocational institutions. Scholars completing their schooling from the local academic high schools will also be attracted to the opportunities afforded by employment at the project. Candidates will be required to take the assessment tests required for the maintenance trainees to determine mechanical ability and general educational level.

Operator trainees in the mine operations department will be required to attend mechanical equipment appreciation training. This general program emphasises basic mechanical principles involved in the operation of heavy equipment including a brief review of hydraulic and pneumatic systems, equipment components, and health and safety considerations.

18.13.5.5. ***Clerical Training***

Recruiting for clerical employees should not be as difficult as for crafts and operations employees. It is expected that potential employees with clerical skills will be available both in Ouagadougou and in the local area.

Individuals hired as clerical employees will begin their employment at the Project by attending orientation and induction programs. Following this, the clerical employee will complete a departmental processes familiarisation program.

18.13.5.6. ***General Training***

In addition to training aimed at specific skills as described above, general training will also be carried out as follows:

- Safety
- Environment
- Computer and Database
- Languages
- Supervisor and Management

18.13.5.7. ***Training Staff***

Training staff for the project will comprise four groups:

- HR department employees including trainers, administrative staff
- Operations and maintenance department trainers
- Contracted maintenance skills trainers
- Vendor trainers

The HR Department will lead the effort in recruitment and selection of training (and other staff).

The role of the training supervisors will be to develop, implement, translate, and conduct training programs such as new employee orientation, supervisory development, and other general programs. The clerical staff will be expected to handle communications, scheduling, record keeping, and documents.

19. MARKET STUDIES AND CONTRACTS

No Market Studies were carried out for this study. The final product of the Mankarga 5 project will be gold doré bars. These can be sold in the current market at prevailing global gold prices.

No material contracts have been entered into as of the date of this report. Following the successful completion of a pre-feasibility study, construction and mining contracts will be negotiated.

20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Regulatory Setting and Permitting

20.1.1 *National*

The country legislation with respect to environmental protection is intends to improve the protection of the natural and human environment, and ensure appropriate mitigation and compensation is provided, while allowing mining developments to proceed. These policies, strategies, and laws are strongly focused on addressing desertification and sustainable development of the land and the promotion of soil fertility.

Within the context of the national laws, the application for an exploitation permit requires the submission of an Environmental and Social Impact Assessment (ESIA) to the Ministry of Environment for their review and approval. As a part of the government's review the ESIA is subjected to a public hearing before a final decision is granted. The ESIA must also contain proposed mitigation measures for potential negative impacts, recognition and enhancement of positive impacts as well as a monitoring program. If the ESIA is approved, a mining permit can be issued.

The Burkina Faso Mining Code also requires that funds be set aside to address environmental protection and closure costs.

All work carried out to date at the Tanlouka Project has been completed under exploration permits.

20.1.2 *International*

There are a variety of international standards applied to the global mining industry which Burkina Faso has agreed to support. One of the more dominant international standards is that of the International Finance Corporation standards (IFC) and the World Bank. IFC standards are currently used by all financial institutions globally that have signed on to the "Equator Principles". The Equator Principles are a financial industry benchmark for determining, assessing, and managing social and environmental risk in project financing.

If the proposed project's funding is sourced from an institute who is a signatory to the Equator Principles then the proposed projects environmental and social impact assessment (ESIA) will need to comply with the IFC Performance standards on social and environmental sustainability.

20.1.3 *Social and Environmental Baseline Introduction*

The 115 km^2 Tanlouka permit area is located in Burkina Faso's central province of Ganzourgou and predominantly includes villages or rural communes such as Yaika, Tanlouka and Manesse. The area's commune capital is Boudri, which is located outside the tenement boundaries. Smaller villages such as Pousghin, Talle, Tanlouka, Yaika and Manesse, as well as the migratory artisanal mining community of can be found within the Tanlouka tenement boundaries. Those mainly affected by the proposed project area are the villages of Sanbrado, Pousghin, Noessé, Roulgin, and Silmiougou, as well as the artisanal mining community.

In 2012 Channel Resources Ltd (now a subsidiary of WAF) commissioned SN-ERFAC, a local consulting grpup to commence social and physical baseline studies. SN-ERFAC study engaged in:

- Communicating with the local population, and convey the goals of the company;
- Presenting/explaining to the local population the mineral process, from early exploration to mining, and what such a project could bring to the local social infrastructure of the immediate area.

- Setting up a local concertation committee to facilitate communication for ongoing activities by the company on the project area.
- Gathering ground information on sacred sites and communal infrastructures through discussions and site visits;
- Establishing a socio-environmental map of the permit area and show social as well as main physical/topographic characteristics.

The study was carried out in three steps:

1. Preparation and organization of the study through meeting with the company representatives, review all the existing documentation (incl. discussions and documents from government and non-government organisations), and work out the best possible way to gather ground data.
2. Ground Data gathering including recognizing, targeting and interviewing key people and structures within the Tanlouka permit area. Overall a dozen structures and over a hundred people were approached during this exercise.
3. Data analysis and synthesis of all crucial information gathered on the ground, whether physical or social. This part of the study was mostly desktop.

The main outcomes of the preliminary study were the following:

- Initiating a local participating committee to enhance transparency and fostering ongoing communication and participation between the company and the local residents.
- Recognizing areas of potential conflict between the local residents and the company.
- Recognizing the issues surrounding artisanal gold workers.

Three maps were completed centred around the Talle, Pousghin and Tanlouka-Manesse-Bagzam villages. These maps outline villages, hamlets, places of worship, sacred sites, topographic features and existing basic infrastructure.

20.1.4 *Social and Environmental Profile*

The local population in the Tanlouka area is predominantly of the Mossi ethnicity, and most are subsistence farmers living within autonomous, patrilineal village structures, which are traditionally governed by a council of village elders. This area has a history of mass migration as the population seeks relief from drought. Other minority ethnic groups in the area include Peulh, which belong to the cattle-herding Fulani. The Islamic and Christian religions are practiced in tandem with the population's indigenous animist beliefs. Most of the communes and villages have mosques and churches, but animist sacred sites and fetishes are also common.

The local population make their living off the land and grow crops of millet, maize, beans and rice through traditional or experimental pluvial crops. Small local businesses and pastoral activities are also common, with the former mostly restricted to the villages. Levels of unemployment in the formal sector remain high. Since 2004, artisanal mining activities have been on the rise, and this has brought substantial revenues to the area. Artisanal mining activities are commonly carried out by migratory gold diggers, but some local residents are engaged in artisanal mining activities, regardless of age or gender.

Education levels in the greater community are low and educational institutions include both primary and secondary education, but pre-school or higher education facilities are absent. General infrastructure, including teacher's housing, water access, equipment and food are lacking.

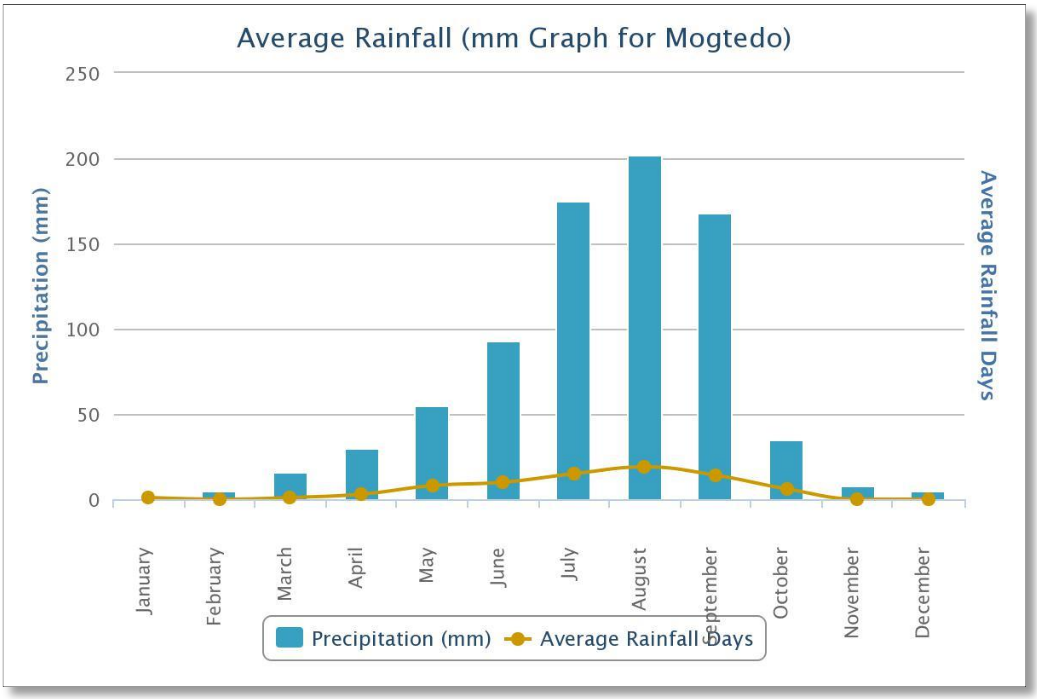
Local healthcare services remain limited due to the low purchasing power of the general population, poor road access, and persistent faith in traditional/cultural health care. Major health problems faced in the zone include malaria, and polluted water induced diseases.

Sanitary infrastructure as well as hygiene education is generally lacking.

The Mankarga 5 Project is located on the Plateau Central Region. The physical environment on the property concession and project area is arid, representative of much of the savannah style landscape that covers West Africa. The landscape is generally flat. Topographical features are limited to eroding lateritic buttes and mesas and low lying floodplains. The land is very lightly timbered, mostly shrub, and most of the vegetation has been removed and used as a combustion fuel or for making way for agricultural purposes.

Rainfall is highly seasonal (between June and October, see Figure 20.1) and the area is prone to both drought and flash flooding; during this period crops are planted and cultivated. Harvesting begins in November.

Figure 20.1 Local Rainfall Data



Fauna on the property is generally quite sparse, and exotic or endangered species are not known to exist at this stage.

The Mankarga 5 Project is located in a tributary catchment of the arterial Nakambe River which flows to the Bagré dam. Given the scarcity of water resources, any effects on water quality have the potential to be amplified downstream. Creeks and rivers appear ephemeral and support agriculture downstream of the deposit area.

Village baseline data collection will be initiated, and will include the number of water access points dispersed throughout the communities of interest; such points will include hand-pump boreholes and open wells. It is a fair assumption to make that the major constraints facing the communities in regards to water are mechanical breakdowns and insufficient access to potable water. The company considers that a sustained effective water management can be employed in the project area to ensure that local communities will not be significantly impacted negatively.

20.1.5 *Studies and Consultation Process*

The objectives of these baseline investigations are to enhance the company's understanding of the socio-economic and cultural context with respect to the surrounding communities. This will allow WAF to increasingly understand the potential effects of the Mankarga5 Gold

Project, and will in turn facilitate the development of a cohesive Stakeholder Engagement Plan.

WAF is currently in the process of compiling an ESIA, through its main consultancy firm Knight Piésold Pty. Ltd. (KP). This firm will supervise the full environmental baseline studies, environmental and socio-economic impact assessments, and permitting with the assistance of a number of Burkinabe consulting firms such as INGRID, ExperiENS and SN-ERFAC. These Burkinabe environmental consultancies are experienced in this type of document, and this process will be managed in conjunction with WAF. Field baseline studies for both physical and social environments will be conducted from September 2014 through to June 2015 and the findings from these surveys will be incorporated into the ESIA submission when completed.

A community relations team will be established to engage in a systematic process to commence Social and Environmental Assessment and Management Systems. Consultations will be conducted across the permit area with a variety of stakeholder groups in independent sessions. Main groups to be consulted in all villages will include the Village Development Councils, Chiefs and elders, religious leaders, as well as women and youth.

Additional consultations will also be held with education and health representatives, law enforcement and various governance and administration officials.

All consultations will be recorded in an ongoing registry and subsequent community profiles and stakeholder maps will be developed.

In parallel with the social and community base lining the following environmental disciplines will be deployed to site to perform baseline assessments for inclusion in the ESIA:

- Equipment to monitor noise, wind, and precipitation
- Monitor and measure groundwater
- Describe and inventory fauna and flora
- Land use and pastoral management
- Cultural heritage survey
- Archaeological/anthropological surveys

WAF will incorporate the findings from these field surveys into the ESIA; however, will continue to monitor the baseline conditions of the project area throughout any development scenario envisaged.

20.1.6 *Closure*

Mine closure is a requirement of the federal legislation and IFC standards. Conceptually, closure of the facility will consist of decontamination, asset removal, demolition, and disposal, and reclamation of all impacted areas, followed by a post-closure monitoring program. Amore detailed closure plan will be developed and submitted with the ESIA.

20.1.7 *Conclusion*

WAF will continue collecting and analysing information required for the submission of an ESIA. Basic data collection will be ongoing covering a wide range of diverse subjects such as meteorology, hydrology, vegetation, wildlife, and socioeconomic information. This will have a major impact on ensuring that relevant permits will be issued in a timely fashion.

The ongoing collection of detailed environmental and engineering parameters such as outlined in the Table 20.1 below will aid to finalise a detailed Feasibility plan. Both the ESIA and the feasibility plan will have to advance simultaneously with experts providing input into the ESIA submission and subsequent permit application process:

Table 20.1 Data Collection Items	
Physical Parameters	Social Parameters
Air Quality	Cultural Resources
Meteorology	Social and Economic Values
Geology and Geochemistry	Pastoral Management
Hydrology (surface and ground water)	Wastes (Solid and Hazardous)
Flora/Vegetation	
Soils	

Table 20.2 outlines the schedule for permitting and anticipated studies:

Table 20.2 Anticipated studies and permitting schedule								
	2014				2015			
Milestone	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
National FS				X	X	X		
ESIA				X	X	X		
Environmental Permit							X	
Mining Permit							X	
Mining Convention							X	X

21. CAPITAL AND OPERATING COSTS

21.1 Introduction

Mine operating costs for processing, maintenance, mining and administration have been estimated from a variety of sources including:

- First principle estimates;
- Consumption rates as provided in the Process Design Criteria;
- Power requirements as estimated as a percentage of the envisaged installed equipment as listed in the Mechanical Equipment List;
- Mintrex database of costs from similar operations in West Africa and Australia;
- Information supplied by West African Resources.

The total site operating cost estimates include:

- Mining costs were prepared by Crosscut Consulting.
- Processing and maintenance cost estimates as shown in Item 21.3 and Table 21.4 prepared by Mintrex;
- Labour schedules as prepared by Mintrex with input from West African Resources;
- Administration cost estimates prepared by Mintrex summarised in Table 21.7. These are expected to be relatively constant from year to year.

Operating cost estimates are presented in both summary and detail levels in this section of the report. Due to the sensitivity of information, the detail of the labour costs is available upon request from West African Resources.

All costs are presented in United States Dollars (USD) and are based on prices for the first quarter of 2014.

Exchange rates used to develop the costs are as follows:

- West African CFA franc (CFA) = $0.0021 USD
- Australian Dollar (AUD) = $0.90 USD

21.1.1 *Qualifications and Exclusions*

- The mining costs as provided by Crosscut Consulting are presented here in summary form only.
- ROM pad costs, excluding rehandling ore, are included within the mining costs.
- Rehabilitation and other environmental costs are included in the mining costs.
- Corporate overheads/head office costs are excluded from this report.
- Withholding tax and VAT have been excluded.
- Project financing or interest charges are excluded
- Escalation is excluded.
- Ongoing exploration costs are excluded.

21.2 Mining Costs

Mine operating costs have been estimated by Crosscut Consulting and are depicted in Table 21.1

Table 21.1 Mining Operating Costs		
Description	**Units**	**Value**
Owners mining costs	US$ per tonne	0.13
Drill and blast	US$ per tonne	0.48
Load and haul	US$ per tonne	1.61
Other Labour	US$ per tonne	0.13
Pit Dewatering	US$ per tonne	0.04
Grade Control	US$ per tonne	0.23
Maintenance Fixed Costs	US$ per tonne	0.24
Light vehicles	US$ per tonne	0.01
Misc contractors	US$ per tonne	0.01

21.3 Processing and Maintenance Costs

Process and maintenance cost estimates have been developed using the plant parameters and ore characteristics specified in the process design criteria. The treatment plant has a design capacity of 1.6 Mtpa ore and production capability of up to 60,495 troy ounces of gold per annum.

The Crushing and Agglomeration Plant is specified in the PDC to have an availability of 80% or 7008 operational hours per year.

The Leaching and Adsorption Plant is specified in the PDC to have a 96% availability giving 8410 operational hours per year.

The Elution and Electrowinning plant is operated for only 12hrs/day at 90% availability giving 3,942 operational hours per year.

The processing and maintenance cost estimates have been broken down into the following categories:

- Labour
- Power
- Consumables
- Maintenance
- Heap Expansion
- Laboratory

A summary of the annual processing, operation and maintenance costs are shown in Table 21.2:

Table 21.2 Processing and Maintenance Costs	
	Cost per tonne of Ore Processed US$
Processing labour	1.39
Laboratory	0.16
Power	1.83
Consumables (excl Cement)	1.90
Cement for Agglomeration	1.58
Heap Expansion	0.98
Rom Rehandle	0.49
Maintenance	0.86
Total	9.18

It may be possible to reduce the Processing labour costs further into the life of the mine as the expatriate labour force reduces with an increase in local capacity, however this was not investigated in the study.

21.3.1 ***Labour***

The manning organisation chart and salary costs are based on a two-element classification system as shown in Table 21.3:

Table 21.3 Labour Classification System		
	Code	Description
Labour source	E	Expatriate
	L	Local
Labour type	S	Staff
	W	Wage (non-staff)
Labour level	1	Highest level
	7	Lowest level

For example, a job described as LS4 would be a local staff employee with a moderate seniority level. A detailed organisation chart and the approach that West African Resources has adopted for employment of personnel are outlined in Item 18.13 Operations.

Manning requirements and salaries for expatriates, local staff, and local workers have been developed together with West African Resources.

The total direct labour cost for the 102 employees is $5.02 million per year of operations, excluding mining contractors, equating to $3.13/t. The distribution of those costs is shown in Table 21.4:

Table 21.4 Labour Cost Breakdown		
Department	Personnel	Cost per tonne $US/t
Management	2	0.24
Mining	13	0.64
Process and Maintenance	44	1.39
Commercial and Administration	18	0.34
Sustainability	11	0.37
Security	3	0.15
Total	91	3.13

21.3.2 ***Power***

Power for the plant site will be generated from a diesel-fired power station, owned and operated by a third party in a Build Own and Operate (BOO) arrangement with West African Resources paying for each kW/hr used (take or pay arrangement).

The following loadings have been used as the basis of costing:

- Total Installed Power: 1375 kW
- Average Consumption: 793 kW
- Largest motor: Impact Crusher, 320kW.

Total annual power cost is expected to be $2.92 million per annum, or $1.83/t. This assumes a cost of 0.467 US$/kWhr, (based on a diesel price of $1.40/litre delivered to the Mankarga Site).

21.3.3 ***Consumables (excl Cement)***

Costs for consumables have been drawn from recent projects in Burkina Faso. Costs of wear liners for the MMD sizer and Impact Crusher are included in the consumables. Cyanide and lime consumptions in the leach circuit have been calculated from usage rates in the PDC. All reagent consumption rates have been included in the process design criteria. A summary of cost estimates for consumables is presented in Table 21.5:

Table 21.5 Consumable Costs (excl Cement)	
Consumables	Cost per tonne US$
Crushing	0.08
Leaching and Elution	1.33
Smelting	0.03
Services	0.47
Total	1.90

21.3.4 ***Cost of Cement for Agglomeration***

The cost for cement for agglomeration –US$240/tonne - was taken from invoice for supply of 40 tonnes of cement on a project in Burkina Faso. No investigation was done on the possibility of reducing this through establishing a long term contract for supply or bulk purchasing. Cement consumption was taken as 10kg/tonne for SOX and 5kg/tonne for MOX.

21.3.5 ***ROM Rehandling***

The cost of ROM rehandling was based on cycle times, number of equipment required to haul and load sufficient tonnage and historical costs for labour and equipment maintenance. The total cost of rehandling ore is $0.72/t.

During the mining phase it was assumed that only 50% of the ore would be rehandled while post mining phase 100% of the ore would require rehandling.

21.3.6 ***Plant Maintenance***

Plant maintenance, materials and labour costs have been estimated as a percentage of the direct installed equipment cost on a discipline-by-discipline basis. These costs have been generated on the basis of vehicle category and typical fuel consumption. Estimated annual operating hours and maintenance materials have been applied to generate an annual operating cost.

Mine maintenance costs are included in the mining costs and therefore do not form part of maintenance costs under this heading. The total process plant and associated owner's infrastructure maintenance costs are summarised in Table 21.6:

Table 21.6 Maintenance Costs	
Maintenance	Cost per tonne US$
Plant maintenance cost	0.68
LV + Mobile plant	0.18
Total	0.86

21.3.7 ***Extension of the Heap***

The cost of constructing the initial heap for the first 3 months operation is included in the Capital Costs.

Extension of the heap will be required and is included as part of the operating costs. Based on the costs for earthworks, the HDPE liners, drainage and irrigation piping (with some allowance for re-use of the irrigation piping) the cost for the heap expansion is estimated at $1.00 per tonne of ore processed or $1.6 M per annum. During the last 3 months of operation no further heap expansion will be required therefore the cost of heap expansion over the life of the mine (considering the allowance in the Capital costs for the initial heap) will be $0.98/tonne.

21.3.8 ***Laboratory***

As Mankarga 5 is little over an hour from the lab external essaying is proposed. As advised by West African Resources this will equate to $0.16/t processed or $0.256 M per annum.

21.4 **General and Administration Costs**

General and Administration (G&A) costs are summarised in Table 21.7:

Table 21.7 Administration Costs

	Cost per tonne US$
Staff	1.10
Mine Site Offices	0.14
Insurances	0.10
Financial	0.07
Government Charges	0.07
Consultants	0.13
Personnel	0.13
Contracts & Service Providers	0.38
Community	0.17
Environmental	0.08
General	0.07
Total (during mining phase)	2.44
Reduced by 25% on completion of mining	1.83
Average LOM	2.10

It was assumed that the G&A costs would reduce by 25% on completion of the mining phase due to the reduction in the personnel on site and the associated reduction in administration. Therefore the average G&A costs would be $2.10/tonne (mining will only occur during the first 26 of the 65 months the site is in operation).

21.4.1 ***Mine Site Offices***

This covers costs associated with the rental and maintenance of a satellite-based communications system to provide high quality communication and data transfer capability. Additional costs include allowances for computer replacements (every three years), postage, courier and light freight, stationery and miscellaneous expenses.

21.4.2 ***Insurances***

Insurance premium costs include public liability, loss of profit and operational risks.

21.4.3 ***Financial***

Costs have been allowed for accounting audits and legal fees incurred during the life of the mine.

21.4.4 ***Government Charges***

Government charges include mining lease rental and fees, and costs associated with obtaining EPA and local government mining licenses.

21.4.5 *Consultants*

Consulting fees for environmental, accounting, IT, human resources, and metallurgical testing have been included in this estimate.

21.4.6 *Personnel*

This section covers all first aid and medical costs, visas, local recreation, entertainment, safety equipment and clothing, training, hardware, recruiting, and relocation, including travel and accommodation for expatriates.

21.4.7 *Contracts & Service Providers*

Specialised clinical services have been included in this estimate.

21.4.8 *Community*

Operating expenses associated with maintaining community relations include costs for organising joint initiatives and scholarships, and any related consulting fees.

21.4.9 *Environmental*

An allowance has been included to provide rehabilitation nurseries and cover environmental testing expenses.

21.4.10 *General*

Costs covered under general are the administration of light vehicles, fuel, maintenance and the power costs of the Offsite Office.

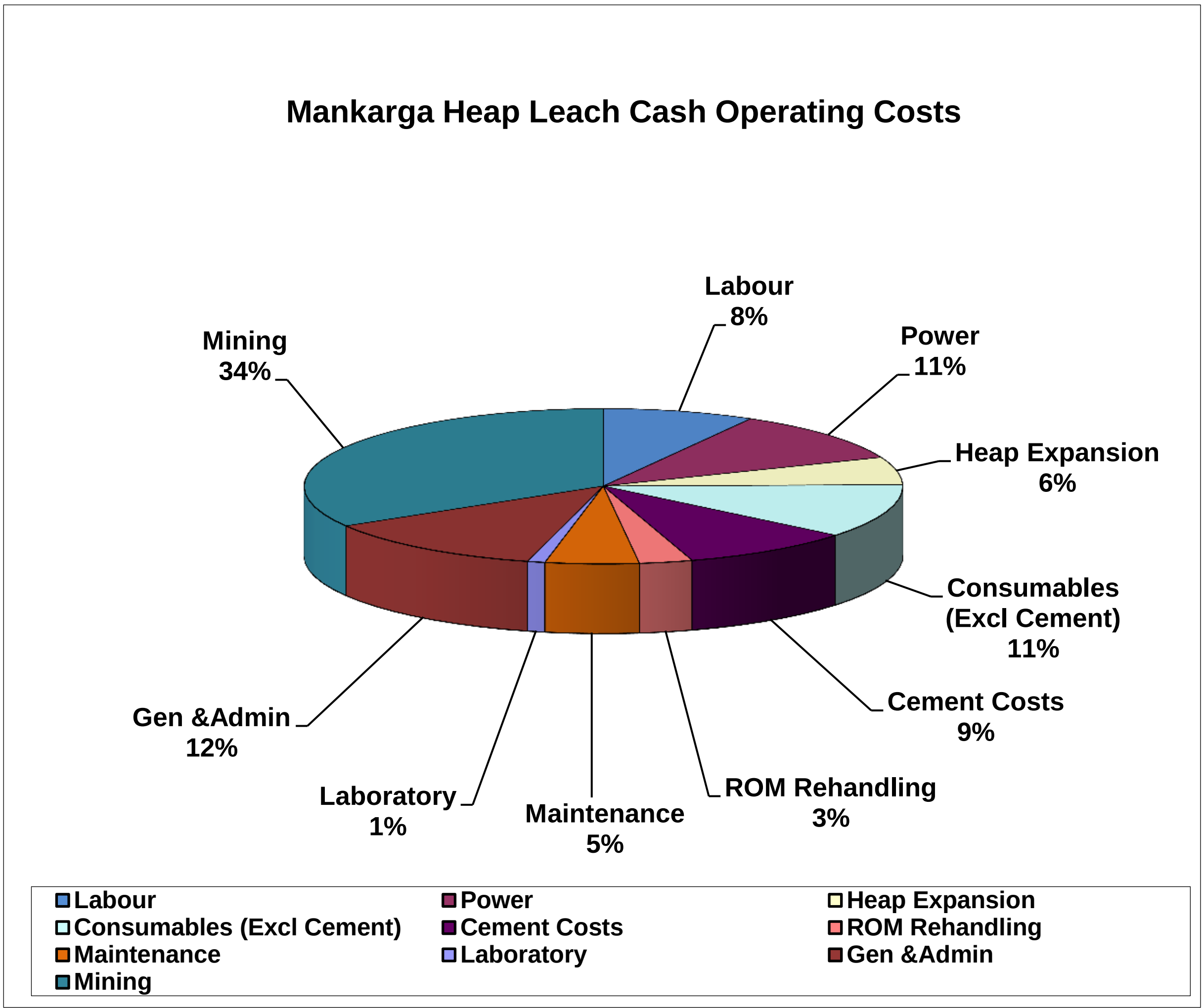
21.5 Operating Cost Summary

Total annual mine operating costs per tonne of ore over the life of mine are summarised in Table 21.8 and Figure 21.1.

Table 21.8 Annual Operating Cost Summary

Operating Costs	US$/tonne of Ore Processed
Processing & Maintenance	9.18
General & Administration	2.10
Mining	5.70
Total	16.98

Figure 21.1 Pie Chart Depicting Breakdown of Operating Costs



21.6 Summary

The LOM total cash costs for the project are estimated to be $671/oz and a breakdown is presented below in Table 21.9.

Table 21.9 LOM Operating Costs

Operating Costs	US$/t ore (processed)	US$/Oz (produced)
Mining	$5.70	$206
Processing	$9.18	$332
G & A	$2.10	$76
Cash Operating Cost	$16.98	$614
Royalties	$1.58	$57
Total Cash Cost	$18.56	$671
Sustaining Capital	$0.39	$14
All-in sustaining Cash Cost	$18.95	$685

21.7 Capital Cost Estimate

21.7.1 *Introduction*

The purpose of the capital cost estimate is to provide current costs suitable for use in assessing the economics of the Project, and is based upon an EPCM contract approach where the client assumes the builder's risk.

The capital cost estimate has been prepared to a level equivalent of a scoping study, and is presented in US dollars as of the first quarter 2014 (1Q14) to an accuracy level of ±35%.

21.7.2 *Summary*

A summary of the capital cost estimate of the Mankarga Heap leach project are depicted in Table 21.10. A more detailed summary is depicted in Table 21.12.

Table 21.10 Capital Cost Summary

Cost Area	**Sub-total US$**	**Contingency US$**	**Total US$**
Construction Overheads	$ 2,622,618	$ 393,393	$ 3,016,011
Plant Bulk Earthworks	$ 1,625,587	$ 243,838	$ 1,869,425
EPCM	$ 3,275,717	$ 491,358	$ 3,767,076
Area 10 - Crushing, Ag. and Stacking	$ 7,826,087	$ 1,173,913	$ 9,000,001
Area 30 - Leaching and Adsorption	$ 2,609,914	$ 391,487	$ 3,001,401
Area 50 - Metal Recovery and Refining	$ 2,595,410	$ 389,311	$ 2,984,721
Area 60 - Reagents	$ 482,182	$ 72,327	$ 554,509
Area 70 - Services	$ 572,759	$ 85,914	$ 658,673
Process Plant Costs	**$ 21,610,275**	**$ 3,241,541**	**$ 24,851,816**
WSF Facility	$ 2,000,000	$ 300,000	$ 2,300,000
Plant Infrastructure	$ 2,111,453	$ 316,718	$ 2,428,171
Camp	$ 2,182,894	$ 327,434	$ 2,510,328
Roads	$ 932,755	$ 139,913	$ 1,072,668
Misc. Electrical	$ 301,312	$ 45,197	$ 346,509
Plant Vehicles and Mobile Equipment	$ 780,800	$ 117,120	$ 897,920
Infrastructure Costs	**$ 6,126,320**	**$ 918,948**	**$ 7,045,268**
Temporary Construction Facilities	$ 442,799	$ 66,420	$ 509,219
Capital Spares	$ 373,373	$ 56,006	$ 429,379
First Fills	$ 764,076	$ 114,611	$ 878,687
Mining Pre-production	$ 1,000,000	$ 150,000	$ 1,150,000
Owner's Costs	$ 7,854,749	$ 1,178,212	$ 9,032,961
Indirect Costs	**$ 10,434,997**	**$ 1,565,250**	**$ 12,000,246**
Total Project Costs	**$ 38,579,404**	**$ 5,725,739**	**$ 43,897,331**

21.7.3 ***Estimate Basis***

West African Resources has purchased a second hand plant (Abore Plant) together with many of the design drawings of that plant. As a result, the approach used was as follows:

1. Crushing Agglomeration and Stacking plant costs were based on the Abore Plant (i.e. installing the second hand plant with refurbishment or replacement of the necessary items) with an upgrade to the Secondary Impact Crusher to achieve the desired throughput.
2. The Adsorption Recovery (ADR) plant cost was based on the use of a modular wet process plant.
3. The Elution and Gold Room was based on a previous project in Burkina with the same elution circuit and size.

When information was available, the Capital Costs were not factored (as would usually be the case for this level of study) but based on quantity take-offs from the drawings multiplied by rates for similar sized previous projects in Burkina Faso. A detailed explanation of the approach used in determining the Capital costs is given below.

21.7.3.1. ***Mechanical Equipment Supply***

Mechanical equipment requirements for the Project have been estimated as follows:

1. For the Crushing, Agglomeration and Stacking Circuit:
    - MMD sizer refurbishment was based on a budget quote for the expected replacement items and refurbishment required from MMD.
    - The secondary impact crusher cost was based on a budget quote for a new crusher.
    - The refurbishment of the existing conveyors was based on a per meter cost of supply and install of all new mechanical items for the conveyors taken from previous projects.
    - An allowance was allocated for the refurbishment of the agglomerator.
    - The cost of the cement silo and tramp metal magnet was based on information from similar recent projects.
    - A budget quote was used for the cost of supply of 12 new 100 foot Grasshopper conveyors.
2. ADR Plant was based on a budget quote for a modular plant, factored (using 6/10 rule) for the required flow rate.
3. Metal Recovery and Refining (Elution and Goldroom) costs (supply and install) were based a previous recent projects in Burkina Faso, with the additional supply of a modular transfer water system and carbon regeneration structure for which budget quotes were received.
4. Costs for supply and installation of the reagents handling and site services were based on supply costs from previous similar sized projects in Burkina Faso.

21.7.3.2. ***Plant Bulk Earthworks***

The plant bulk earthworks costs were based on estimated areas and volumes multiplied by applicable rates taken from recent projects. This included earthworks for the following:

- Plant site.
- Leach Pad
- Turkey's Nest
- Pregnant Solution Pond
- Storm Water Pond
- Site Drainage

21.7.3.3. ***Concrete Supply and Construction***

Costs for supply and construction of concrete foundations for the process plant were based on quantities taken from the Abore Plant and rates from previous projects.

21.7.3.4. *Structural, Mechanical, Platework and Piping (SMP) Installation*

Costs associated with SMP installation include erection and installation of plant mechanical equipment, prefabricated platework and supporting steelwork.

These have been estimated based on our in-house database of installation durations for installation of each item of mechanical equipment, and the steel and platework estimated quantities from the Abore Plant, multiplied by installation rates from comparable projects in Burkina Faso.

21.7.3.5. *Structural Steel Supply*

Supply of all prefabricated and coated structural members, floor grating, stair treads and hand railings has been estimated based on quantities taken off the Abore Plant drawings (it was assumed that all steelwork would be required new except for conveyor trusses) and rates based on off-shore fabrication (Malaysian Fabrication).

Conveyor trusses from the Abore Plant in the crushing and agglomeration plant were assumed to re-usable. Section 5 of the PFS for the Kayeya Gold Project prepared by Como in 2006 stated that "the stringers of the conveyor appear to be sound and only slightly corroded" for all the conveyors of the Abore Plant within the Crushing and Agglomeration circuit. However due to the lapse of time this may need to be reconsidered.

21.7.3.6. *Plate work Supply*

Supply of all bisalloy- and rubber-lined chute work, launders and tanks, estimated based on quantities taken off the Abore Plant drawings and rates based on off-shore fabrication (Malaysian Fabrication). There are potential cost savings if some of the plate work from the Abore plant is found to be re-usable.

21.7.3.7. *Piping Supply and Installation*

Supply of steel, HDPE pipe lengths, prefabricated rubber-lined spools, flanges, valves and installation of these items has been estimated as follows:

- Crushing, agglomeration and stacking was based on 12.5% of mechanical equipment supply costs.
- Leaching and adsorption was based on at 25% of mechanical equipment supply costs.
- Heap leach piping was factored based on the area of the initial heap (400m x 200m) using costs from a similar Australian project.
- Metal recovery, reagents and services piping costs were based on costs taken from a similar sized project in Burkina Faso.

21.7.3.8. *Electrical and Instrumentation Supply and Installation*

Supply and installation of all electrical equipment, plant instruments, and associated cabling have been estimated at 45% of mechanical equipment supply costs, except for in the metal recovery, reagents and services area where previous project costs were used (due to similarity).

21.7.3.9. *Plant and Infrastructure EPCM Costs*

Costs associated with engineering design and drafting, procurement of mechanical equipment, preparation of construction contracts and management have been estimated at 15% of direct costs.

21.7.3.10. *Construction Overheads*

Plant and infrastructure construction overheads represent cost items such as:

- Mobilisation and demobilisation of contractors and subcontractors
- Site establishment
- Travel costs for the contractors and subcontractors
- Accommodation and messing cost for contractors and subcontractors
- Construction equipment hire costs e.g. cranes, boom lifts, welders, generators
- Supervision and administration costs

Costs were factored from similar projects in Burkina Faso.

21.7.3.11. ***Plant Buildings and Equipment***

This includes all buildings located within the process plant low and high security fences, and all associated equipment within these buildings. Costs have been taken from similar projects in Burkina Faso.

21.7.3.12. ***Overall Plant Site Infrastructure***

Infrastructure costs external to the process plant represent the establishment and construction of:

- Site access roads (factored based on length)
- Water Storage Facility (factored based on total storage capacity required).
- Communications (taken directly from a similar project).
- Accommodation village (factored based on capacity).
- Site security (allowance taken directly from a similar project).

Costs have been based on similar projects and factored as indicated above.

21.7.3.13. ***Power Station***

This study assumes a Build Own Operate arrangement will be used to minimise capital costs. Costs have been estimated based on a cost per MW (3 units of 750 kW each), with the cost of installation per MW taken from previous projects in West Africa.

21.7.3.14. ***Plant Vehicles and Mobile Workshop Equipment***

Costs for the supply of plant transport vehicles and maintenance equipment have been estimated based on similar recent African projects.

21.7.3.15. ***Capital Spares***

Plant capital spares were estimated at 5% of mechanical equipment supply costs.

21.7.3.16. ***First Fills***

Costs for First Fills were based on quantities required (3 month's stock, and 1 month for cement) and rates from recent projects.

21.7.3.17. ***Owner's Costs***

The owner's costs have been based on costs from recent projects in Australia and West Africa. Cost breakdown is as follows:

- Construction insurances
- Land and crop compensation
- Pre-production labour
- Pre-production expenses
- Owners General (includes legal and financing fees, corporate O/H allocation, consultants fees)
- Business systems
- Training
- Mining - working capital
- Processing – working capital
- Mining pre-production

21.7.4 ***Contingency***

Specific provision needs to be made for uncertain elements of cost within the project scope and thereby reduce the risk of cost overrun to a pre-determined acceptable level. Contingency reflects the measure of the level of uncertainties related to the scope of work. It is an integral part of an estimate and has been applied to all parts of the estimate, i.e. direct costs and indirect costs.

The contingencies used in this study do not include allowances for scope changes, escalation or exchange rate fluctuations, but rather for assumptions, omissions and other uncertainties that affect the estimate accuracy.

The allowed estimate contingencies are depicted in Table 21.11.

Table 21.11 Allowed Estimated Contingencies 15%	
Process Plant	15%
Infrastructure	15%
EPCM Costs and Overheads	15%
Capital Spares and First Fills	15%
Owner's Costs	15%
Total Weighted Contingency	**15%**

21.7.5 ***Clarifications***

The following clarifications apply to the cost estimates:

- The capital estimate is based on the implementation strategy as detailed in Item 18.12.
- The estimate is based on current wage rates and expected local safety regulations and work practices.
- It has been assumed that international air services are operating and sufficient seats on flights are available when required to meet the program schedule.
- Construction accommodation costs are included in Construction Overheads, however, no cost for the building of a construction camp has been included. It has been assumed that the permanent accommodation will be utilised for construction and this assumption needs to be reviewed during subsequent studies.
- No costs have been allowed for the provision of process guarantees or performance warranties.
- The costs of refurbishment of the available second-hand equipment will require further in-depth study and may potentially result in cost savings.
- The cost of the Water Storage Facility is simply a factored allowance. The viability of this facility must be investigated in future studies.
- The costs for the Heap (for the first 3 months only) has been included under "Other Infrastructure", and the piping for irrigation and drainage of the Heap is not reflected under piping but as part of Infrastructure. Expansion of the heap for ongoing operation is provided for in the operating costs.
- The Mechanical costs for the Process Plant given in Table 21.11 include installation costs. The cost for supply of mechanical equipment only, for the Process Plant is US$6.1 million.

21.7.6 ***Exclusions***

The following exclusions apply to the cost estimates:

- No allowance has been made for escalation of prices.
- No allowance has been made for an EPC Contractor's Builders Margin.
- No allowance has been made for financing costs or interest.
- No allowance has been made for import duty for capital items.

- No allowance has been made for government approvals, training levies and special permits.
- No allowance has been made for currency exchange rate variations.
- No allowance has been made for GST or VAT (it is expected not to apply).
- No allowance has been made for Owner's sunk costs prior to project implementation.
- No allowance has been made for the operation of a Ouagadougou Office i.e. an off-site office.
- No allowance has been made for withholding taxes for work completed by non-Burkina Faso companies.

Table 21.12 Capital Costs by Discipline

West African Resources - Mankarga (Heap Leach) Scoping Study CAPITAL COST ESTIMATE Summary by Activity						
	Material Costs	Installation Costs	Freight Costs	Subtotal	Contingency	Grand Total
Process Plant						
Construction Overheads	$ -	$ 2,622,618	$ -	$ 2,622,618	$ 393,393	$ 3,016,011
Plant Bulk Earthworks	$ 1,625,587	$ -	$ -	$ 1,625,587	$ 243,838	$ 1,869,425
EPCM	$ 3,275,718	$ -	$ -	$ 3,275,718	$ 491,358	$ 3,767,076
Area 10 - Crushing, Ag. and Stacking	$ 5,278,332	$ 1,158,474	$ 1,389,282	$ 7,826,087	$ 1,173,913	$ 9,000,001
Area 20 - Not Used	$ -	$ -	$ -	$ -	$ -	$ -
Area 30 - Leaching and Adsorption	$ 1,961,418	$ 467,367	$ 181,128	$ 2,609,914	$ 391,487	$ 3,001,401
Area 40 - Not Used	$ -	$ -	$ -	$ -	$ -	$ -
Area 50 - Metal Recovery and Refining	$ 1,865,400	$ 420,738	$ 309,272	$ 2,595,410	$ 389,311	$ 2,984,721
Area 60 - Reagents	$ 273,036	$ 167,554	$ 41,591	$ 482,182	$ 72,327	$ 554,509
Area 70 - Services	$ 418,656	$ 97,600	$ 56,503	$ 572,759	$ 85,914	$ 658,673
Total Process Plant	**$ 14,698,147**	**$ 4,934,351**	**$ 1,977,776**	**$ 21,610,275**	**$ 3,241,541**	**$ 24,851,816**
as % of total plant	59%	20%	8%	87%	13.0%	
Infrastructure						
WSF Facility	$ 2,000,000	$ -	$ -	$ 2,000,000	$ 300,000	$ 2,300,000
Plant Infrastructure	$ 1,367,844	$ 586,379	$ 157,229	$ 2,111,453	$ 316,718	$ 2,428,171
Camp	$ -	$ -	$ -	$ -	$ -	$ -
Roads	$ 932,755	$ -	$ -	$ 932,755	$ 139,913	$ 1,072,668
Misc. Electrical	$ 301,312	$ -	$ -	$ 301,312	$ 45,197	$ 346,509
Plant Vehicles and Mobile Equipment	$ 780,800	$ -	$ -	$ 780,800	$ 117,120	$ 897,920
Other						
Temporary Construction Facilities	$ 442,799	$ -	$ -	$ 442,799	$ 66,420	$ 509,219
Capital Spares	$ 306,043	$ -	$ 67,330	$ 373,373	$ 56,006	$ 429,379
First Fills	$ 764,076	$ -	$ -	$ 764,076	$ 114,611	$ 878,687
Mining Pre-production	$ 1,000,000	$ -	$ -	$ 1,000,000	$ 150,000	$ 1,150,000
Owner's Costs	$ 7,854,749	$ -	$ -	$ 7,854,749	$ 1,178,212	$ 9,032,961
Total Indirect	**$ 15,750,379**	**$ 586,379**	**$ 224,558**	**$ 16,561,317**	**$ 2,484,198**	**$ 19,045,514**
as % of total indirect	83%	3%	1.2%	87%	13.0%	
Total Project	**$ 30,448,526**	**$ 5,520,731**	**$ 2,202,335**	**$ 38,171,592**	**$ 5,725,739**	**$ 43,897,331**
as % of grand total	69%	13%	5%	87%	13%	

22. ECONOMIC ANALYSIS

This PEA is preliminary in nature as it includes Inferred mineral resources that are presently considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as reserves. There is no certainty that the assumptions utilized in the preliminary assessment will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

The base case is stated assuming 100% project basis and a gold price of $1,300/oz. All amounts are in US dollars unless otherwise stated. The results of the analysis of the Mankarga 5 Project, as it is currently envisaged, are very positive. The pre-tax Net Present Value (NPV) with a 5% discount rate is $84 million using a base gold price of $1,300/oz. Post-tax with the same 5% discount rate and $1,300 gold price the NPV is $64 million. Internal rates of return (IRR) are respectively 57% pre-tax and 49% post-tax. Payback on the project capital is expected to be 16 months pre-tax and 18 month years post-tax. The detailed results are shown in Table 22.1.

Table 22.1 Economic Summary

Pre-Tax (100%)	**$1100/oz**	**$1300/oz**	**$1500/oz**
$NPV^{0\%}$ ($M)	$58	$103	$145
$NPV^{5\%}$ ($M)	$45	$84	$119
IRR %	37%	57%	71%
Payback (Months)	25	16	12
After-Tax (90%*)	**$1100/oz**	**$1300/oz**	**$1500/oz**
$NPV^{0\%}$ ($M)	$47	$80	$111
$NPV^{5\%}$ ($M)	$35	$64	$90
IRR %	32%	49%	62%
Payback (Months)	26	18	14
* Allows for 10% free carried Government interest			

22.1 Taxes and Royalties

Various taxes and royalties are included in the economic evaluation: the Government Royalty, Corporate Income Tax, an estimation of depreciation, and the VAT.

22.1.1 *Government Royalty*

The Government Royalty is a net smelter calculation that varies according to the world gold price. For gold prices less than or equal to $1,000/oz, the rate currently is 3.0%. With a gold price between $1,001/oz and $1,300/oz the rate rises to a 4.0% NSR. Greater than $1,300/oz the rate is 5.0%.

22.1.2 *Depreciation*

Depreciation was scaled based on capital per ounce i.e. Depreciation in the period = (Capital / Total Ounces) * ounces produced in that period.

22.1.3 *Corporate Income Tax*

A tax rate of 17.5% was applied on income after depreciation and carried forward losses were accounted for. Carry forward costs associated with exploration were included in Year 1. WAF worked together with Mintrex in the modelling of the tax treatment.

22.1.4 ***Value Added Tax***

Withholding tax and VAT have been excluded from this Study.

22.1.5 ***Sensitivity Analysis***

The project sensitivity to various inputs was examined on the base case (pre-tax). The items that were varied were:

- gold price
- capital cost
- operating cost

Figure 22.1 Project Sensitivity

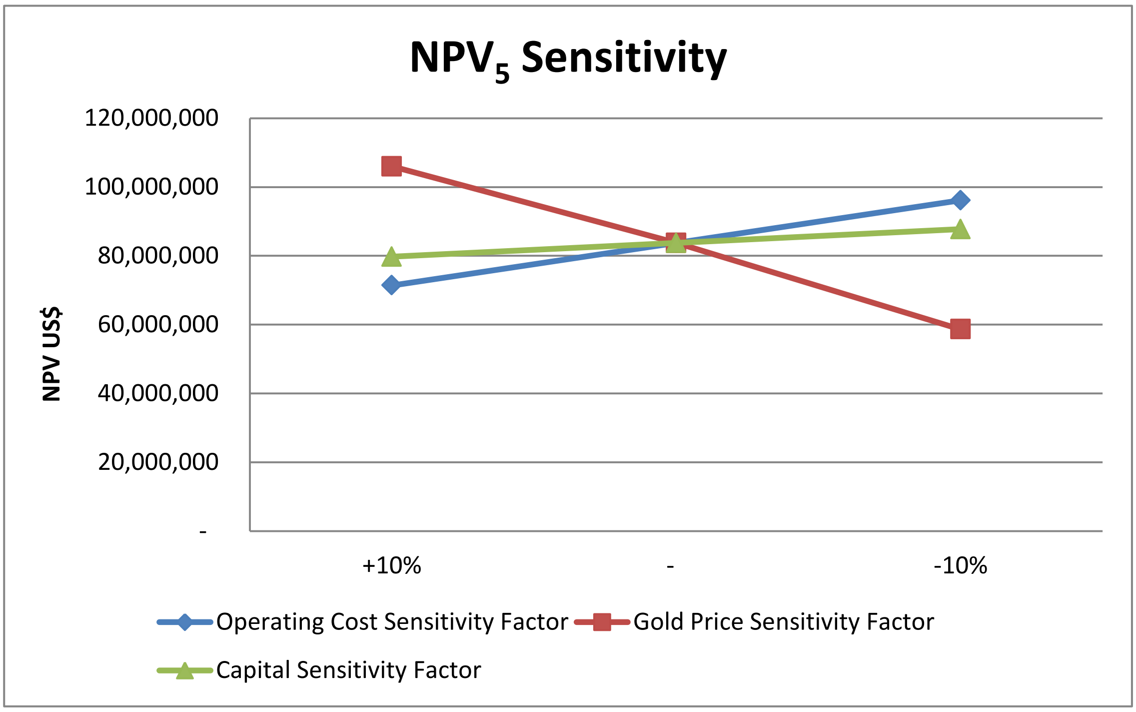


Table 22.2 Project Sensitivity NPV$^{5\%}$ (Pre Tax)			
Item	10%	0%	-10%
Capital Costs ($M)	$80	$84	$88
Operating Costs ($M)	$71	$84	$96
Gold Price ($M)	$106	$84	$59

22.1.6 ***Project Cash Flow***

Table 22.2summarises the project cash flow forecast for the life of mine.

Table 22.3 Project Cash Flow Forecast									
	Unit	**Year -1**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Total**
Mining									
Total	t		8,016,421	7,990,280	842,903				16,849,604
Waste	t		4,899,439	3,196,833	256,172				8,352,445
Ore	t		3,116,982	4,793,446	586,731				8,497,159
Grade	g/t		0.88	1.06	1.38				1.02
Processing									
Tonnes	t		1,600,008	1,600,008	1,600,008	1,600,008	1,600,008	497,119	8,497,159
Grade	g/t		1.23	1.33	1.34	0.65	0.57	0.89	1.02
Contained Oz	Oz		63,395	68,459	68,903	33,302	29,230	14,259	277,548
Recovery	%		0.88	0.89	0.90	0.78	0.71	0.65	0.85
Recovered Oz	Oz		55,702	60,650	61,728	26,589	20,639	9,625	234,932
Revenue									
Spot Revenue	US$		72,412,052	78,845,028	80,246,227	34,565,343	26,830,979	12,512,228	305,411,857
Royalties	US$		2,896,482	3,153,801	3,209,849	1,382,614	1,073,239	500,489	12,216,474
Refining	US$		217,793	237,142	241,356	103,962	80,699	37,633	918,585
Gold Loss	US$		72,412	78,845	80,246	34,565	26,831	12,512	305,412
Net Revenue	US$		69,225,365	75,375,240	76,714,776	33,044,202	25,650,209	11,961,593	291,971,386
Costs									
Mining	US$		17,417,559	26,406,528	4,584,200				48,408,287
Processing	US$		15,208,095	13,565,090	14,486,314	15,362,121	15,134,925	4,254,600	78,011,145
G&A	US$		3,904,020	3,904,020	3,090,682	2,928,015	2,928,015	1,072,394	17,827,145
Capex	US$	41,106,635							
Sustaining Capital	US$		612,906	612,906	612,906	612,906	612,906	255,378	3,319,909
Total Project Cost	US$	41,106,635	37,142,580	44,488,544	22,774,102	18,903,041	18,675,846	5,582,372	147,566,486
Head Office	US$								
Net VAT	US$								
Pre-tax Project Cash flow	US$		32,082,785	30,886,696	53,940,674	14,141,161	6,974,364	6,379,221	103,298,265
Corporate Tax	US$		3,222,156	2,849,080	6,847,857	1,050,004	644,756	842,540	15,456,393
Government 10%	US$			267,869	4,770,572	1,370,406	694,251	579,206	7,682,305
Project Cash flow	US$	-41,106,635	28,860,629	27,769,746	42,322,244	11,720,751	5,635,356	4,957,475	80,159,567
Cumulative Cash Flow	**US$**	-41,106,635	-12,246,006	15,523,741	57,845,985	69,566,736	75,202,092	80,159,567	

23. ADJACENT PROPERTIES

23.1 Introduction

The area is principally prospective for orogenic gold deposits, which typically exhibit a strong relationship with regional arrays of major shear zones, similar to that found elsewhere in late Proterozoic Birimian terrains of West Africa.

Properties adjacent to the Tanlouka Project include Orezone's Bombore as well as WAF's Mogtedo project. Of note is that the qualified person has visited the Mogtedo property however has not visited the adjacent properties to verify the publically available information which is presented here. In addition the information below is not necessarily indicative of the mineralisation on the Tanlouka property that is the subject of this technical report.

23.2 Orezone Gold Corporation: Bomboré Project

Orezone Gold Corporation's NI 43-101 compliant Bomboré gold deposit is located immediately adjacent to the southwestern portion of the Tanlouka Project. The Bombore deposit is a large tonnage gold deposit with 140 million tonnes of measured and indicated mineral resources at 1.01g/t for 4.56 million oz, and 18 million tonnes of inferred mineral resources at a grade of 1.22g/t for 0.72 million oz (Orezone, 2013). Orezone have reassessed development options for the project, and presently are undertaking feasibility work on an oxide only Heap Leach development option (Orezone, 2013).

23.3 Mogtedo Project: Zam Permit

The Mogtedo project is located approximately 20kms NNW of Tanlouka, in the southern part of the Zam Permit. Gold mineralisation at the Mogtedo Prospect is shear bound and is associated with a network of shear hosted veins and veinlets within a northeast-southwest trending shear corridor that is interpreted as a second order structure from the major Markoye fault discontinuity. The mineralisation is largely hosted by diorite, though it locally extends into the intermediate schists found within the shear corridor. Inter-shear quartz veining located at or near the lithological contact zones between diorite and intermediate schist dominantly host mineralisation.

Drilling has been carried out over an area of approximately 1,800m of strike, and 150m width, within which mineralisation has been found to be discontinuous.

24. OTHER RELEVANT DATA AND INFORMATION

To the authors knowledge, there is no other relevant data or information related to the Tanlouka property.

25. INTERPRETATION AND CONCLUSIONS

The pertinent observations and interpretations which have been developed in producing the resource estimate at Mankarga 5 are detailed in the sections above. Detailed conclusions regarding various resource risk are documented in the June 18, 2014 NI 43-101 report.

The key conclusions are:

- The Mankarga 5 Project hosts a substantial gold deposit that has potential for development and warrants further exploration and economic assessment.
- Exploration drilling, sampling and assaying by West African Resources and its predecessor Channel Resources has been carried out to applicable industry standards and the data derived is appropriate for resource estimation.
- It is the Qualified Person's opinion that the Mankarga 5 April 2014 resource documented in this report meets NI 43-101 standards and JORC Code (Dec 2012) guidelines.
- The Mankarga 5 Resource Estimate data spacing, quality of data, and current confidence in the geological understanding of the deposit is sufficient to imply or infer continuity of mineralisation and grade. Additional infill drilling is needed to improve confidence in the Inferred resources to a level needed for detailed economic assessment (i.e., to define Indicated Resources).
- The Qualified Person understands that presently no major environmental, permitting, legal, taxation, socio-economic, marketing or political factors have been identified which would materially affect the resource estimate.
- The main risk factors at this stage are fluctuating commodity prices and technical risks such as data spacing, geological interpretation and grade/geological continuity. These technical factors are reflected in JORC (2012) / NI 43-101 Inferred and Indicated Resource classifications of the Mankarga5 Resource Estimate.
- Metallurgical test work returned to date indicates that gold is amenable to recovery by conventional metallurgical processing techniques.
- Mining studies have shown that it is appropriate to consider a 'starter' heap leach project targeting oxide material.
- The pit is relatively simple in design and yields a 1:1 ore to waste stripping ratio.
- The Mankarga 5 resource is largely open at depth, and further drilling is warranted to test strike and depth extensions.
- The results of the economic analysis of the Mankarga 5 Project, as it is currently envisaged, are very positive. The pre-tax Net Present Value (NPV) with a 5% discount rate is US$84 million using a base gold price of US$1,300/oz. Post-tax with the same 5% discount rate and US$1,300 gold price the NPV is US$64 million. Internal rates of return (IRR) are respectively 57% pre-tax and 49% post-tax.

26. RECOMMENDATIONS

Due to the positive results of this Preliminary Economic Assessment WAF will transition directly into the commencement of a Feasibility Study (FS) on the Mankarga 5 Project. It is recommended the following are included in the FS:

- Infill drilling at Mankarga 5 to upgrade the Mineral Resource to Indicated (400 holes 15,000m) enabling the estimation of updated Mineral Resources and Mineral Reserves. Estimated Cost: Completed
- Resource estimation studies. Estimated Cost: $0.08m
- Deeper drilling to test for high-grade shoot extensions and geotechnical studies. Estimated Cost US$1.0m
- Additional metallurgical test-work on Mankarga 5 oxide mineralisation enabling a final process plant flow sheet design. Estimated Cost: US$0.4m
- Completion of mine design and development of a mining plan and Life of Mine Schedule as well as refurbishment construction and development planning. US$0.5m
- Completion of environmental studies and monitoring as well as advancement of permitting of statutory requirements to enable mining and processing to commence. Estimated Cost: US$0.6m
- Technical management and field support $1.8m

FS Study and Permitting Total Planned Estimated Budget: US$4.4m.

27. REFERENCES

Anderson, P. G. (2006). Geological Evaluation and Exploration Proposal for the Tanlouka Research Permit in the Province of Ganzourgo, Burkina Faso, West Africa, April 21, 2006. Prepared for Channel Resources Ltd.

Abouchami et al., 1990; Leube et al., 1990; Boher et al., 1992; Sylvester and Attoh, 1992; Feybesse and Milesi, 1994; Hirdes et al., 1996; Hirdes and Davis, 1998; Béziat et al., 2000), was followed at around 2.1 billion years by the Eburnean tectono- thermal event (Leube et al., 1990; Liégeois et al., 1991).

Barnett, W.P. (2010). Tanlouka Structural Mapping Project, Burkina Faso, West Africa. Internal report by SRK Consulting (Canada) Inc. on behalf of Channel Resources Inc., 43p.

David, J. (2008). A Report on Induced Polarisation/Resistivity and magnetic Surveys Conducted over the Tanlouka Permit, Burkina Faso West Africa, Submitted to Channel Resources Ltd/ GMC, Ouagadougou, BF, Project # 08-B230, May 2008

Davis, B. K. (2014). Structural geological review of the Tanlouka Permit, Burkina Faso. Internal report by Orefind® prepared for West African Resources Ltd., 83 slides.

Guérard, S. (1997). Summary of Exploration Activities on the Bombore Research Permit, Annual Report 1997, Province of Ganzourgou and Sanmatenga, Burkina Faso, West Africa. Channel Resources Ltd internal Report, 55 pages plus appendices and figures.

Hughes, C.J. (2014). Tanlouka Permit - Exploration Summary/Potential. West African Resources Ltd. Internal memorandum, 2p.

Huot, D., Sattran, V. and P. Zida. (1987): Gold in Birimian Belts of Burkina Faso, West Africa; Economic Geology, Vol. 82, 1987: pp 2033-2044.

Hyde, R. Hughes, C.and Morel, V, 2014, Tanlouka Gold Project – Project Review, West African Resources Internal Company Memorandum, May 2014

Kere Avocats July 9 2012 Title Opinion Tanlouka Exploration Permit.

Milese, J.P.(1989). West African Gold deposits in their Proterozoic Lithostructural Setting, Chrn. Res. Min., 497. Orezone, 20131, http://www.orezone.com/news/press-releases/2013/4/orezone-increases-and- upgrades-bombor%C3%A9-gold-project-resource

Mintrex. September 2014. Mankarga 5 Heap Leach Project Scoping Study. Project Number 1399.

Morel, V.P.I. and Hughes, C.J. (2014). Geological Overview of the Tanlouka Permit. West African Resources Ltd. Internal memorandum, 6p.

Orezone, 2013, http://www.orezone.com/news/press-releases/2013/6/orezone-shifts-focus-bombor%C3%A9-study-heap-leach-scenario-1

Smith. J.K., 2012, NI 43-101 Technical Report on Mineral Resources for the Mankarga5 Gold Deposit Tanlouka Property, Burkina Faso for Channel Resources, NI 43-101 Technical Report prepared by AMEC for Channel Resources, August 2012.

Pohl, D.C. 1998. A Decade of Change – Mineral Exploration in West Africa. The Journal of The South African Institute of Mining and Metallurgy. Nov/Dec 1998: p. 311-316.

Pohl, D.C., Kaboré, E, B., Bennell, M., Hanssen, E., and Nikiéma, S. Essakan Stockwork Gold Deposit – Burkina Faso: Phase One Completion Report. BHP Minerals Unpubl. Internal Report, 1995. 33 p.

Ravensgate May 28th 2014 NI 43-101 Technical Report On The Tanlouka Gold Project For West African Resources Ltd

SN-ERFAC (2012). Mission preliminaire socio-environnemental sur le permis de recherche Tanlouka. Rapport prepare pour Tanlouka SARL.

Sylvester, P. J., and K. Attoh, 1992. Lithostratigraphy and composition of 2.1 Ga greenstone belts of the West African Craton and their bearing on crustal evolution and the Archean-Proterozoic boundary. J. Geol., v. 100, pp. 337-393.

West African Resources, 2010, Prospectus, Prospectus for Initial Public Offering (IPO) to list on the ASX issued May 5th 2010.

West African Resources, 2014, "Excellent recoveries confirm potential of West Africans Boulsa Gold Project". ASX/TSX Market Release dated 9th May 2014

28. SIGNATURE PAGE

The effective date of this report titled "NI 43-101 Preliminary Economic Assessment, Mankarga 5 Gold Deposit, Tanlouka Gold Project, Burkina Faso" is 15 September 2014. It has been prepared for West African Resources Ltd., by Leon Lorenzen, Richard Hyde, Vincent Morel, Stephen Hyland and Declan Franzman each of whom are qualified persons as defined by NI 43-101.

Signed 15 Septemer 2014.

"Signed and Sealed"

Leon Lorenzen
Manager Project and Studies
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Managing Director
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