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**SCOTGOLD**  
**CONONISH GOLD AND SILVER PROJECT**  
**BFS UPDATE – EXECUTIVE SUMMARY**

**Report prepared for:**

Scotgold

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**Date:**

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## REPORT DATA SHEET

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BFS Update – Executive Summary

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## EXECUTIVE SUMMARY

This report is an update to the Bankable Feasibility Study (BFS) dated 28<sup>th</sup> August 2015 completed by Bara Consulting Ltd (Bara). The BFS should be read in conjunction with this update report as, for brevity, this update report only covers changes that have been made to the BFS. The purpose of this report is to evaluate a range of production planning options enabled by the revised Tailings Storage Facility (TSF) design and incorporating the experience gained through the operation of the Bulk Processing Trial (BPT). These options are also evaluated using a revised set of economic assumptions, considered appropriate as at February 2017.

The BFS was based on a mine plan with an objective to achieve the maximum production (6,000 tonnes per month) as quickly as possible to maximize NPV. Subsequent to the publication of this BFS the cost of lending for the debt portion of capital requirements has proved expensive. This resulted in a re-evaluation of the project development strategy and a focus on reducing the peak funding requirement. The revised strategy has resulted in the following phased approach:

- Bulk Processing Trial (BPT)

There is a Probable Reserve of 7,200 tonnes of ore stockpiled on surface grading at 7.9 g/t. A pilot plant with a capacity of 1.5 t/hr was delivered mid-May 2016 and has been operational since the end of May. It was planned to initially treat 2,400 tonnes of ore at a rate of 400 t/month over two shifts. This was achieved in September 2016 and onwards. This has proved successful and the balance of the stockpile is now being treated. The purpose of this bulk test is to gain further data on the performance of the gravity process and to refine such process to maximise recovery. This reduces the metallurgical risk of the project. The BPT also has a spin off benefit of assessing the likely premium on Scottish produced gold.

- Phase 1 – Underground production at half capacity

Assuming a 1 January 2018 project start date, it is now planned to start underground development in April 2018 and build up production to 3,000 t/month as soon as possible. This will require a 7.5 t/hr process plant. This production rate will be continued for 2 years and four months. A significant amount of underground development will have been completed during this phase.

- Phase 2 – Full production

This is the final phase and the mine is now at full production of 6,000 t/month as planned in the BFS but with a significantly reduced risk and peak funding requirement. This phase will be self-funded.

The figure below illustrates the high-level development schedule for the project over the next five years.



### HIGH LEVEL DEVELOPMENT SCHEDULE

Since the completion of the BFS in August 2015, five additional scenarios have been considered for the Cononish Project. An overview of the scenarios is presented in the table below.

ASSUMPTIONS OF CONSIDERED SCENARIOS							
Description	Original Base Case (BFS)	Revised Base Case (BFS)	Full Scale	Full Scale with Cyanidation	Half Scale	Phased	Units
<b>Physicals</b>							
Production Rate	6 000	6 000	6 000	6 000	3 000	3 000 / 6 000	tpm
Overall Recovery	93	93	93	93	93	93	%
Dore Recovery	25	25	25	25	25	25	%
Total Au Sold	177 666	177 666	176 074	176 074	175 567	175 762	oz
Tailings Storage Facility Type	Valley Fill	Dry Stack	Dry Stack	Dry Stack	Dry Stack	Dry Stack	type
Start Date	01/2016	01/2016	01/2018	01/2018	01/2018	01/2018	
Stockpile Depleted	-	-	7 000	7 000	7 000	7 000	t
Construction Period <sup>1</sup>	16	16	16	16	16	16	months
Life of Mine <sup>2</sup>	7.5	7.5	7.5	7.5	14.9	8.3	years
<b>Economics</b>							
Gold Price	1 100	1 150	1 150	1 150	1 150	1 150	USD/oz
Silver Price	15	16	16	16	16	16	USD/oz
USD/GBP Exchange Rate	1.60	1.25	1.25	1.25	1.25	1.25	USD/GBP
Scottish Gold Sold	25	25	6.6	6.6	7.4	7.4	%
Scottish Gold Premium	-	-	10	10	10	10	%
Discount Rate	10	10	10	10	10	10	%
Notes:							
1 – Time required to achieve steady state production							
2 – Life of mine at steady state production (ie. excluding construction period)							

The **Revised Base Case Scenario** is effectively an update of the BFS. The modifications to this scenario over the BFS include:

- An update to the Tailings Storage Facility (TSF) type, from a valley fill method to a dry stack method.
- An increase in the gold price from 1,100 USD/oz to 1,150 USD/oz.



- A decrease in the exchange rate from 1.6 USD/GBP to 1.25USD/GBP

These assumptions are carried forward to the other scenarios for comparative purposes.

The **Full Scale Scenario** considers the exact same assumptions as those of the Revised Base Case Scenario, however the stockpile modelled in the BFS is fully depleted. This assumption is more in line with the current project status as the BPT phase will exhaust the current stockpile by the end of the year. This assumption is therefore carried forward in all other scenarios. Additionally, the Full Scale Scenario considers that a portion of the gold produced will be sold through “MarketCo” at a 10% premium as Scottish gold, with Scotgold’s participation in the premium above 10% being considered as further upside potential. The assumption is that 15% of gold production, up to a maximum of 1,500 ounces per annum will attract this premium. This assumption is also carried forward to the following scenarios.

The **Full Scale with Cyanidation Scenario** considers the addition of an off-site cyanidation plant to the processing circuit, as described in the Bara Consulting report 2015-203-001 “High Level Study Intensive Cyanidation of Flotation Concentrate”. In this scenario, smelter treatment charges are replaced with the capital and operating costs of the cyanidation plant.

The **Half Scale Scenario** builds on the previous assumptions with a modification to the production rate. The Half Scale Scenario assumes a decreased production rate of 3,000 tpm over the 6,000 tpm considered in the other scenarios. This modification introduces the ability to reduce the quantity of mining equipment, the size of the processing plant and general scale of operation, which attracts a lower capital cost and funding requirement. The unit operating cost is however increased due to lower operational efficiencies.

The **Phased Scenario**, considers a variation of the Half Scale Scenario, whereby 3,000 tpm is initially produced from the operation, after which a second phase of capital investment is incurred to increase the production rate to 6,000 tpm. This second phase is funded from the project cashflows once sufficient profits have been realised, which occurs approximately 29 months after the start of production. This scenario benefits from the low funding requirement of the Half Scale Scenario while ultimately realising the efficiencies of the Full Scale Scenario, albeit with a small reduction in overall project value.

Three scenarios were selected which fit into the Scotgold corporate strategy. These include:

- The Full Scale Scenario – which will be pursued if reasonable funding terms for the initiation of the full scale project may be realised.
- The Phased Scenario – which is the optimal scenario when full scale project funding is not viable.
- The Half Scale Scenario – which is a worst-case scenario where the phased case is pursued but the second phase of capital is not committed.



These scenarios were evaluated in detail and the underlying assumptions on capital and operating costs were, in instances, modified to further reduce the funding requirement.

The financial metrics presented in the table below are the metrics achieved by each of the three key scenarios. The original BFS scenario has been included for comparative purposes.

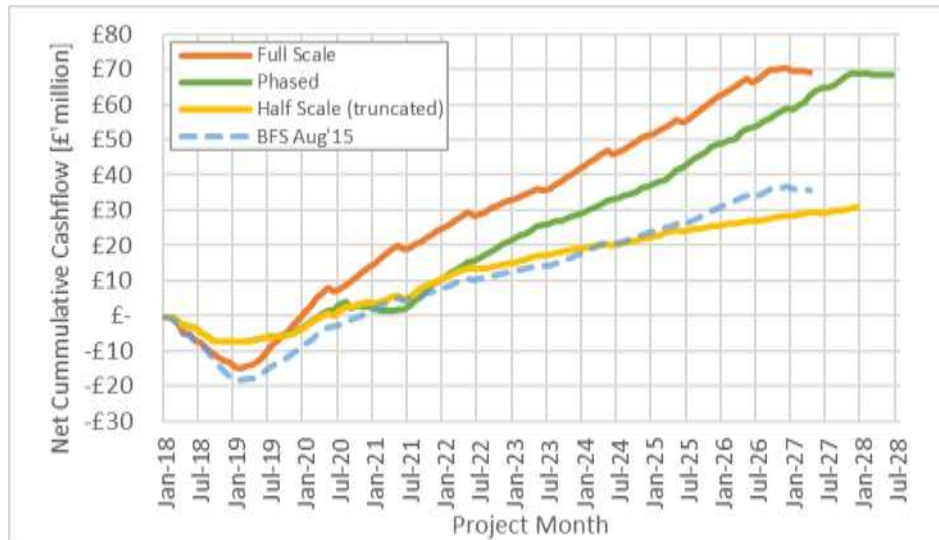
<b>FINANCIAL RESULTS OF UPDATED KEY SCENARIOS</b>				
<b>Result</b>	<b>BFS Aug'15</b>	<b>Full Scale</b>	<b>Phased Case</b>	<b>Half Scale</b>
EBITDA	67 427 626	102 942 898	101 193 046	83 169 096
Gross Cashflow	43 403 552	83 567 876	81 095 784	69 219 983
Net Cashflow	35 725 551	69 060 352	68 364 248	57 395 752
Pre-Tax NPV (10%)	22 945 889	50 273 091	43 601 701	30 898 914
Pre-Tax IRR	45.0	94.7	81.7	73.7
Post-Tax NPV (10%)	18 515 172	41 553 293	36 738 574	25 308 687
Post-Tax IRR	40.6	86.6	76.7	65.9
Operating Margin	52.5	60.0	59.0	49.7
Life of Mine	8	8	9	15
Payback Period	19	9	13	13
Peak Funding Requirement	- 18 452 183	- 14 966 129	- 7 396 285	- 7 417 930

The table shows that the funding for the Phased Scenario and Half Scale Scenario are essentially equivalent, however the capital investment for the 6,000 tpm plant adds significant value to the project. The Full Scale Scenario delivers the highest project value, should the funding for this scenario be available on acceptable terms.

The figure below presents the project cashflows by scenario. The figure shows that the Phased Scenario shares the same project cashflows as the Half Scale Scenario, until approximately July 2020, where the initial funding for the 6,000 tpm plant and associated mine production ramp-up is required. The Phased Scenario then diverges from the Half Scale Scenario. However, the project remains cash positive throughout the ramp-up period, and the margins that are present in the Full Scale Scenario are realised by July 2021, as shown by the similar gradient of the two scenarios. The delay in capital investment, and subsequent loss in operational efficiency, reduces the project NPV (10%) by approximately 13 per cent.

The graph also shows the improvements over the BFS Scenario, the Full Scale Scenario has improved in funding requirement due to modification of the TSF design, and the margin has improved due to the

improvements in gold price IN BOTH us Dollar and GB Pound terms (as seen by the increased gradient over the BFS Scenario).



**PROJECT CASHFLOWS BY SCENARIO**

On management's selection of the Phased Project as the most favourable overall, this option was re-evaluated using 0% as the Scottish premium in order to provide a more meaningful comparison with the BFS and highlight the positive impact of the other factors.

The **mine access** remains unchanged from the feasibility study, with the primary means of access being the existing adit and exploration drive on 400 m elevation. In order to reduce the amount of waste development required in the early years of mining the development layout has been revised. The following changes have been made:

- Access to the 415 m Level in Block 1 is gained via a ramp in ore, from the 400 m Level exploration drive.
- The footwall drive on 400 m level, West of the central Ramp (to the upper levels) breakaway, has been removed. The stopes will be sequenced in retreat so that access via a footwall drive is no longer required.
- The breakaway position for the Ramp to Block 9 (Lower Ramp West) has been moved to the East, to the "horseshoe" bend in the exploration drive. This allows the footwall drive West, described above, to be removed.

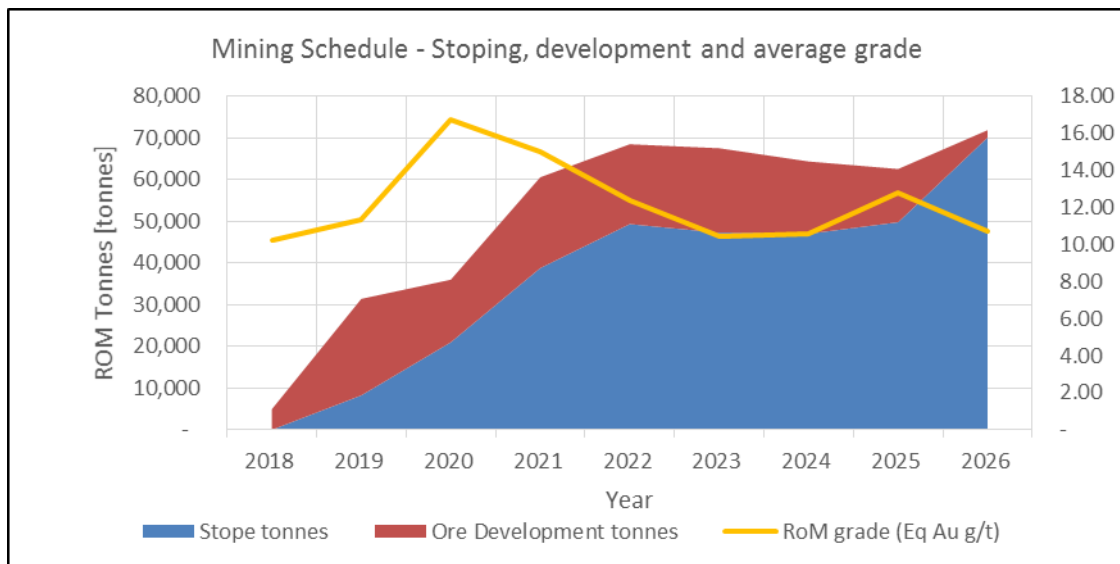
The **mining schedule** has been revised to match the project development schedule. The project development has been split into two phases, the first being the operation of a phased plant at a throughput rate of 3,000 tonnes per month for approximately two years and four months, followed by Phase 2, in which the plant is upgraded and the throughput ramps up to 6,000 tonnes per month.



The mining schedule commences in April 2018, with the rehabilitation of the 400 m Level adit. The first ore from development will be available in October 2018.

In the original BFS there was a limit on the quantity of waste that could be stored on surface so the waste schedule had to be balanced with a backfill schedule, with the balance of the waste not required on surface being placed in the underground stopes. The revised TSF design requires waste rock as a foundation drainage layer and stack toe. Consequently, all waste will be trucked to surface.

During Phase 1 ore is sourced mainly from development with limited stoping commencing in August 2019. The ramp up to production of 6,000 tonnes per month takes place at the start of Phase 2 of the project, in June 2020. The Figure below shows a graph of the mine production schedule.



**GRAPH OF MINING PRODUCTION SCHEDULE**

For the **processing plant**, as mentioned, there are now three production phases each requiring a different plant capacity:

- Bulk test phase at 1.5 t/h. This is now installed and operating. Based on 12 operating hours per day and five days per week (22 days per month) this rate should achieve 400 t/month.
- Phase 1 requiring a capacity of 7.5 t/h. Based on 18 operating hours per day and five days per week (22 days per month) this rate should achieve 3,000 t/month.
- Phase 2 requiring a capacity of 13-14 t/h. Based on 18 operating hours per day and six days per week (25 days per month) this rate should achieve 6,000 t/month, after allowing for some statutory holidays.

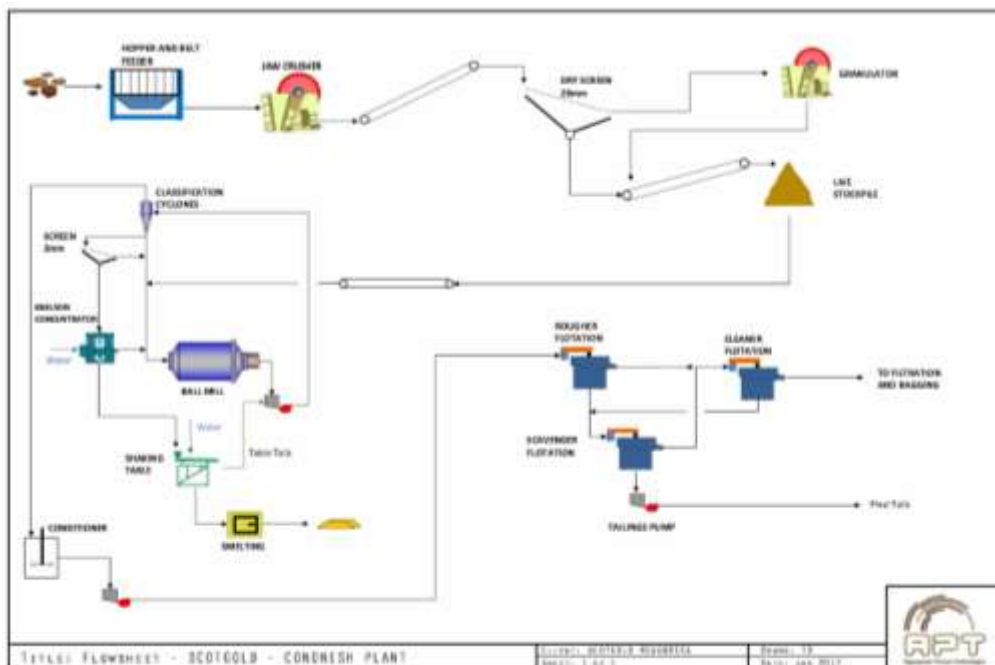


This trial began in June 2016 and has so far (end of February 2017) processed approximately 2,400 tonnes of ore which was previously stockpiled from the 1980's development programme. The permit to extend this trial to the end of the year has been granted.

The BPT has confirmed that:

- The original metallurgical test work was correct and with the grind of P80 125micron planned, a recovery of 93% is confirmed.
- It is possible to obtain a Scottish premium on Scottish mined gold with a proven provenance.
- Tabling of concentrates has highlighted the opportunity to produce a separate gold rich Pb concentrate which may be important if an off-site cyanidation route is eventually chosen.
- Demonstrated pyrite concentrate quality is as predicted at 150g/t - 200g/t. It also confirmed absence of any penalty elements.
- Assisted in developing tailings dry stack potential.

A quote has been received for the Phase 1 plant. This quote is from the suppliers of the plant (APT). The process flow sheet is summarized in the figure below. This is similar to the BFS flow sheet and process plant recoveries are expected to be the same at 93%. The quoted cost was US\$1.42 million.



**PHASE 1 PROCESS FLOW SHEET FOR 7.5 TPH**

The plant for Phase 2 full production is the same as designed in the BFS but, based on the experience gained in running the 7.5 tph plant, we would expect some changes to the plant design. These combined



with the potential reuse of elements of the Phase 1 plant should result in some savings however, these have not been taken into account at this stage.

Knight Piésold Limited has undertaken the feasibility design for the **tailings storage facility system** (TSF) at the Cononish Gold Mine. The mine is in an environmentally sensitive location, located within the Loch Lomond and the Trossachs National Park. The tailings management design has been modified from previous design (a conventional cross valley slurry storage dam) to minimise the visual impact on the area, to remove the requirement for diversion of streams and to provide a lower capital solution to the Project.

The tailings have been shown in past studies to be non-acid generating. Samples of ore have been ground to optimum sizes for gold recovery, and tested for filtration and geotechnical properties. The assumed P80 for the tailings is 125  $\mu\text{m}$ . The revised feasibility design comprises the dewatering of the tailings (to below 20% moisture content) at the processing plant using a filter press, followed by stacking the filtered tailings in mounds in the valley immediately below the plant. The tailings stacks have been designed to replicate the glacial landscape of the area and represent forms typical of nearby moraine deposits.

The tailings stacks will be constructed by tipping the filtered tailings on a pre-prepared footprint after peat, topsoil and turf has been removed. An initial 0.9 m thick basal drainage layer comprising mine rock will be placed over the stack footprint. This will be covered by a geotextile separation membrane and tailings placed on top. The tailings will be placed at their optimum moisture content in 300 mm thick layers and compacted using a towed roller. This will maximise the stability of the stacks. The shape of the final landform will be formed using an excavator to trim the stack to approximately the designed shape. Each stack will store about a year's production at the higher production rate.

Three areas of tailings stack are proposed, each comprising two to four individual stacks. As one stack is being completed, preparation for the following stack will be in progress. On completion of each stack, the mound will be re-topsoiled and turfed. Stripped peat will be placed between the stacks where the conditions will be suitable to maintain the peat in its optimum condition.

Before construction of the tailings stacks begins, surface water diversion channels will be constructed upslope of the site so that clean water does not enter the site. Channels will be excavated at the toe of each stack to collect seepage from the basal drainage layer and runoff from the stack slopes. The seepage and runoff ditches will discharge to settlement ponds. One settlement pond has been provided for each group of stacks. Water from the settlement ponds will be discharged to the River Cononish according to the limits prescribed by the existing discharge consent.



Costs have been estimated for the dewatering of the tailings and construction of the tailings stacks for the two production scenarios and with new or refurbished filter plant and hired or purchased earth moving equipment. Two optimum scenarios are presented below, for the lowest life of mine costs and for minimising capital expenditure.

<b>Lowest Cost LoM</b>							
Production Rate (tpm)	Filter Press	Earthworks Plant	CAPEX	OPEX (Annual)	OPEX (LOM Total)	Plant Value at LOM	<b>Total Costs Over LOM</b>
3000	Refurbished	Purchased	1,025,384	212,314	3,397,031	82,000	<b>4,340,416</b>
6000	Refurbished	Purchased	1,025,384	274,363	2,345,171	200,647	<b>3,169,908</b>
<b>Minimising CAPEX</b>							
Production Rate (tpm)	Filter Press	Earthworks Plant	CAPEX	OPEX (Annual)	OPEX (LOM Total)	Plant Value at LOM	<b>Total Costs Over LOM</b>
3000	Refurbished	Hired	404,206	852,168	13,634,686	-	<b>14,038,891</b>
6000	Refurbished	Hired	404,206	883,986	7,892,236	-	<b>8,296,442</b>

The proposed changes to the project are deemed to constitute a 'material variation' to the existing planning permission and in discussion with the Planning Authority (Loch Lomond and Trossachs National Park), it is planned to submit a 'revised' application for planning permission incorporating the benefits of the proposed tailings storage facility. It is considered that this process should be completed by year end (2017).

For the **financial analysis** the costs used in the BFS Report have been significantly updated as described in the scenario analysis with updated quotes for:

- ✓ Processing capex and opex costs.
- ✓ TMF capex and opex costs.

The Phased Scenario is now considered the base case going forward. Although the premium on Scottish gold was used in the scenario comparison it is not included in the financial evaluation of the selected go forward option.



The table below shows the financial assumptions that have been used. These were provided by Scotgold and agreed to by Bara.

<b>FINANCIAL ASSUMPTIONS</b>			
	<b>Original BFS</b>	<b>Phased Project</b>	<b>Unit</b>
1 EURO	1.4	1.4	USD
1 USD	0.625	0.80	GBP
1 EURO	0.84	0.84	GBP
Gold (Au) Sales Price	1,100	1,150	US\$/oz
Gold (Au) Sales Price	687.50	920.00	GBP/oz
Silver (Ag) Sales Price	15	16	US\$/oz
Silver (Ag) Sales Price	9.375	12.80	GBP/oz
Discount Rate	10%	10%	%

The table below is a summary of the production schedule for the phased project.



<b>SUMMARY OF PHASED PROJECT PRODUCTION SCHEDULE</b>											
<b>Year</b>	<b>Unit</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
Total ROM Tonnes	tonnes	4,948	31,964	35,994	64,419	72,997	73,751	70,396	65,193	72,165	61,508
Total Waste Tonnes	tonnes	25,846	18,024	7,921	24,336	21,513	20,381	21,425	32,673	213	-
Process Tonnage	tonnes	4,000	34,000	36,000	57,000	72,000	72,000	72,000	72,000	72,000	62,334
Gold (Au) Content	oz	1,235	11,739	17,629	24,905	26,385	21,435	21,668	26,274	23,340	21,662
Gold (Au) Grade	g/t	9.6	10.7	15.2	13.6	11.4	9.3	9.4	11.4	10.1	10.8
Silver (Ag) Content	oz	5,709	56,844	84,550	97,064	112,309	91,753	102,702	118,406	92,514	79,494
Silver (Ag) Grade	g/t	44	52.0	73.0	53.0	48.5	39.6	44.4	51.2	40.0	39.7



The key metrics of the financial analysis are shown in the table below.

<b>FINANCIAL RESULTS</b>			
<b>Measure</b>	<b>Original BFS</b>	<b>Phased Project</b>	<b>Unit</b>
EBITDA	67.42	100.04	Millions GBP
Gross Cashflow	43.40	79.94	Millions GBP
Net Cashflow	35.73	67.36	Millions GBP
Pre-tax NPV (10%)	23.95	42.89	Millions GBP
Post-tax NPV (10%)*	18.52	36.12	Millions GBP
Pre-tax IRR	45	80	Percent
Post-tax IRR*	41	75	Percent
Payback	19	13	Months
Pre-tax profit margin	52	59	Percent
Operating cost per oz	327	379	GBP
All in cost per oz	455	487	GBP
All in cost per oz	729	609	US\$
Peak funding requirement	18.45	7.42	Millions GBP

\* Post tax returns are calculated on an all equity funding basis

As mentioned previously, the financial results for the phased project were recalculated on the assumption of a 0% Scottish premium on the gold price. All in cost quoted in the above table includes operating cost, capital costs and royalties. It also accounts for both plant recovery and smelter recovery.

In **conclusion**, the phased approach offers the best balance between minimising peak funding requirements and maximising NPV return. The increase in the assumed gold price and the depreciation in the pound since the original BFS has resulted in a significant increase in the NPV value of the project. This demonstrates the potential improvements in value if further increases in pound denominated gold price materialise. Conversely, the project can also provide reasonable returns at much lower gold prices.



## Competent Persons Statement

*The information in this report that relates to the 2015 Feasibility Study for Cononish Gold Project and the revised development plan (Phased Project) is based on information compiled by Pat Willis, a Competent Person who is registered as a Professional Engineer (Pr.Eng.) with the Engineering Council for South Africa (ECSA) and a Fellow in good standing and Past President of the Southern Africa Institute of Mining and Metallurgy (FSAIMM). Mr Willis is employed by Bara Consulting Limited, an independent consulting company. Mr Willis has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2014 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Willis consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*