



**GOLD FIELDS**

### **Nick Holland – CEO**

Good morning or good afternoon depending on where you are in the world today. We are here to talk about the feasibility study that was recently completed at Salares Norte, a major project in the Gold Fields group in Chile. Joining me today I have Luis Rivera, Regional Head of South America, Avishkar Nagaser, EVP: Investor Relations, Max Combes the Project Director on Salares Norte, Francois Swanepoel, the Technical Manager on the project, and also Diego Huete, the Geology and Exploration Manager on the project.

I'm going to give a brief introduction as to where we are in the project and maybe just remind you what we announced to the market in the middle of February. We declared a maiden reserve and a feasibility study that was completed and peer reviewed on Salares Norte. And that maiden reserve came out at 21 million tonnes at 5.1g per ton of gold, 57.9g per ton of silver, which gave a declared reserve of 3.5 million ounces of gold, and on a gold equivalent basis that translates to 4 million ounces of gold.

There is an initial 11.5 year life of mine, and remember we're only focussing here on the Salares Norte project. There is significant exploration potential around us that we're not covering here today. The annual process plant throughput would be 2 million tonnes. Life of mine production of 3.7 million ounces of gold equivalent – that's actually produced gold. Average production would then translate to around 450,000 ounces a year for the first seven years at an all-in sustaining cost of under U\$500/oz.

And if you look over the first ten years, given that the production is front-ended, we average 355,000 ounces of gold equivalent production per annum over those ten years. The feasibility study has indicated a capital cost (in December 2018 money terms) of \$834 million to build this project. What does that mean? It means that over the life the all-in cost of the project, which includes that upfront capital, will be U\$785 per equivalent ounce. Or if you strip out the upfront project capital cost we're looking at U\$545 per equivalent ounce on an all-in sustaining cost basis.

As we have mentioned when we announced the results in the middle of February, we are looking here at a return of around 25% at a U\$1,300/oz gold price with a payback of around 2.2 years. So a very robust project and that gives an NPV at a discount rate of 7.5% of U\$654 million. Just to remind you, it's an open pit operation with contractor mining. There will be a dual stage processing circuit. Because of the silver we will have Merrill-Crowe. And that will have a CIP afterwards to capture most of the gold.

We've got more than adequate water. A lot of people have asked us, do we have water for the project? We have more than enough water that has actually been permitted, so there is no issue on water. We are obviously far from the grid, so it is envisaged to have an on-site power station. 40 megawatts is the required power. We will obviously consider renewables down the road.

A big issue – and the team will talk about it some more – is that the environmental impact assessment process is underway as we speak. That was formally accepted for review on the 11<sup>th</sup> July 2018. We expect that to be an 18 to 24 month process, which is customary in Chile for these kinds of project approval processes. And while we're busy with that we're doing detailed engineering. Currently we're at around 35% and by the end of this year we're looking to significantly improve that number. Construction of this project, if all goes well, could commence in the Spring of 2020.

With that I'm going to hand over to Max Combes who will take you through some more of the detail along with his team. Thank you.

### **Max Combes – Project Director**

Good morning. I will start talking about the journey we have done with this project since a long time ago. The discovery of this project happened in 2011. Since then we have been doing a lot of work through the years. We have completed a scoping study. We have completed a pre-feasibility study, then an interim feasibility study finalising with a definitely feasibility study at the end of last year.

Along all these years also we have been improving the knowledge of the deposit that ended up with the maiden reserve declaration that Nick just mentioned. In parallel to that the project has gone through several permitting processes in order to do the studies. More important, the process of the EIA which started in 2017 with the base lines and with the presentation of the EIA to the government in July last year.

At the moment we are in the middle of that process. As Nick mentioned we expect this process to last between one and two years. After we've got this approval on the EIA we're going to have to obtain the full notice to proceed approval from the board and anticipate that construction will commence in the fourth quarter of 2020. This is approximately two years of construction, expecting the first gold in the beginning of 2023. In the meantime, we are also progressing the detailed engineering.

Salares Norte is a project that is located in the region of Chile, Atacama, very close to the border with Argentina. It is a project that is located at an average of 4,500 metres altitude. It is a very isolated project. It is very far from any of the communities. We are situated in a closed basin located as you can see on the map around five hours drive from Copiapó and also very close to El Salvador mine which we have an airstrip there. I will hand over the presentation now to the Geology and Exploration Manager. He can explain about the geology of the project.

### **Diego Huete – Geology & Exploration Manager**

Good morning. So we're going to go through a little bit about the regional geology and the district exploration. So Salares Norte is classified as a high sulphidation epithermal deposit. The global distribution of these deposits around the world is shown over this map that we can see. There are several oxide examples in the Miocene between 23 million to 5 million years around Peru, Chile and the Argentinian Andes. There are some giants in the area as well. So our main focus is to show the ones in Chile and the area.

As opposed to the orogenic gold deposits – they are pretty deep on the geological terrains – we have the epithermal as shown here on the slide on the upper part. So it is a more superficial deposit form. Some notable examples of the Andes high sulphidation epithermal deposits and districts that they become, one of them is El Indio, which was in Chile as well. It started in 1979. It had initial reserves of 2.5 million ounces of gold equivalent and at the end of its life produced over 7.2 million ounces. So it had a reserve growth of nearly 2.9 million. La Coipa is another example. It's more a silver mine than gold, but also it had an initial reserve that nearly doubled over the life of mine.

And there are several other examples here in Peru. Yanacocha is one of the giants of the Americas that increased nearly ten times in size over its life. Another important one to mention is Veladero as well in Argentina that has grown nearly two times. So what we want to show here basically is we started with Salares Norte. This district is very important. They are longer-lived assets of over 15 to 20 years that we are doing the exploration now over the terrain.

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To show the Maricunga Belt, it is located in northern Chile. It had already an endowment of more than 90 million ounces of gold equivalent. All of them except La Coipa, Esperanza and Salares Norte are porphyry style. They are copper-gold deposits. They are large but with low grade. La Coipa is on care and maintenance since 2013, and as we saw on the previous slide produced over 25 years some 7.5 million ounces of gold equivalent. Maricunga was suspended in 2016. It produced approximately 3 million ounces of gold over 20 years. And then Salares Norte was the first discovery in the northern part of the belt, 100km north of La Coipa.

The history of the discovery starts way back in 2008/9. The initial RC started at Horizonte which is another project that had positive results in 2009/10. That was our follow up over that area. It had interesting intercepts over 100m at 0.5g. But then in 2010/11 was the first drilling programme at Salares Norte and we hit a discovery hole, which was 96 metres at 1.54g of gold and 60g of silver. It was oxidised and had a good metallurgical response in the preliminary leach test done over that period.

From 2011 to 2013 there was delineation drilling. One particular hole was a spectacular hole with 132 metres at 53g of gold and 59g of silver. We had the first maiden resource declaration. Then from there, 2013 up to last year, we completed in-fill and extensional drilling. We have been drilling over 142km over the project. And we had the resource update late in December of 25.6 million tonnes at 4.76g of gold and 53g of silver for 3.9 million ounces of gold and 43 million ounces of silver.

We have land consolidation as well over the area. We increased our land holding over 25,000 hectares. We exercised some options that we had over the area. There are some JVs that are under negotiation as well over the area. And this table summarises the amount of hectares that we control over the area. The district around the Salares Norte deposit area there are multiple targets that we have, Aster 2, Aster 3, Salares, Heladas and Horizonte to the south.

This slide is basically to show the evolution of the drilling over the years. So now we're in 2013, 2014, 2016, 2017, and then as you can see we are advanced on the deposits Brecha Principal and Agua Amarga. If we do a cross-section just explaining the geology of the area, on the right-side here is the Brecha Principal deposit. On the left is Agua Amarga. As you can see Brecha Principal is a more vertical deposit. It has a mushroom format here that is very common on these sorts of diatreme deposits. On the left we have Agua Amarga. This one here is showing the alteration that plays a key role on the mineralisation.

So to advance on the resource and reserves, last year we put a lot of focus on increasing the in-fill in Agua Amarga. So we drilled nearly 13,500 metres. We also did some close based drilling over Brecha Principal and Agua Amarga. So we added 250,000 ounces in the last update. That was on process cost improvement, the finish off of high grades as well at Agua Amarga. They went through external audits over the year and the last years with the work completed in the past and we had the maiden reserve declaration based on the DFS.

So the resource is the number that we saw before. We have here again a total of 3.9 million ounces of gold, 43 million ounces of silver. And then for the reserve we have 21 million tonnes at 5.13g of gold, 57g of silver and a total of 3.47 million ounces of gold and 39 million ounces of silver.

So just to show some of the areas, those are the recent photos from the project on the top. On the right top is Agua Amarga and on the bottom is Brecha Principal. This is what we call the grade control drilling in some sections to take a look at the continuity. Just to show that we were basically increasing the spacing between

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the holes and we had very positive results. So the ones in red are showing the new results from that in-fill programme. I have to highlight that the second-best hole of the project comes from this in-fill grade control programme.

So this one is also showing Agua Amarga. We confirmed the resource blocks as well and confirmed the grades. So the model is robust as all the progress done over the years. We had as well some external audits. Geospark and some other companies, and we had external geologists as well doing audits on the geology. We had the Optiro resource estimation in January and also the reserve audit completed. We made another video to show the resource model.

### **Max Combes – Project Director**

Now we hand over to Francois Swanepoel who is going to talk to us about the technical aspects of the project.

### **Francois Swanepoel – Technical Manager**

Thank you, Max, and good morning to all. Firstly starting off with the mine design, this is a conventional facility or conventional mining operation with conventional diesel-powered equipment that we're envisaging. The operating model is based on contractor mining both for the mining and blasting services. The system is plant constrained. We've got significant overburden on the ore body, and that is really driving the size of the mining fleet. As a result we're going to mine the ore at a higher rate than the plant can actually take, so there is going to be a significant stockpiling strategy. That has given us some potential upside in terms of grade streaming, so we plan to stockpile the ore that we mine and then send high grades preferentially to the plant.

Key focus areas during the feasibility study were to optimise the SMU and the bench height. We really want to get to the ore zone as fast as possible, and we have made significant advances since the previous phases of the study in that regard. The phase design and sequencing for the mine has been finalised. We have defined a really achievable ramp-up schedule which we will talk about a bit later. And then finally, we identified the core mining strategy where as I explained we're going to mine the ore at a higher rate than the plant can actually process.

So in terms of the actual mine configuration we've got the two deposits adjacent to each other. Firstly the Brecha Principal sector and we see to the north of that Agua Amarga. So in the end these two pits actually merge when we mine it. We've got two waste storage facilities. Firstly, the one to the south will be used for pre-strip. That waste will be used to construct platforms for our dry stack tailings facility as well as the ore stockpiles. And then all operational waste will report to the north once the pre-strip has been completed. So it's a fairly compact site.

In terms of project physicals the DFS result on waste is 308 million tonnes. Pre-strip is approximately 50 million tonnes, and we really worked hard to reduce that number to the current value. Ore mined is 22.2 million tonnes over life of mine. That gives us a life of 11.5 years. Of that 18.8 million tonnes plus the 2.3 million tonnes of marginal material is all in the indicated category, and we've got 1.1 million tonnes of material in the inferred category.

This gives us a strip ratio of approximately 14:1. The gold grade for the study was at 4.96g or close to 5g per ton, and the silver grade 55.6g per ton. So there's a significant amount of silver associated with this facility,

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and that really influenced the process flow sheet which we will come to in a second.

So in terms of the mining schedule criteria what we really tried to achieve in the feasibility study was to get the pre-strip done in two years. That really is to match it with the plant construction schedule which is also roughly 21 months. So we are really aiming to get the pre-strip done by the time we commission the plant. We also aim to have at least five years of continuous mining activity at the peak rate in order to be able to negotiate reasonable contracts on the mining side. And then the aim was to reduce the peak mining rate to lower than 50 million tonnes per annum. We don't want to stretch the contractor in this regard.

And then if we look at the actual schedule that we came up with we can see that we've got a reasonable ramp-up during years 1 and 2. Those are the two pre-strip years, and then we are going into production. We have managed to get the peak mining rate down to 44 million tonnes per annum. And we are really maintaining about seven years at between 40 million and 44 million tonnes over life of mine. So it gives us a nice period to optimise the investment in the mining fleet, in this case through the contractor.

Moving on to metallurgy, we have performed extensive metallurgical test work. We've done test work on more than 200 samples. We have done the full process flow sheet testing. In the end what we found was the metallurgical recoveries are only dependent on head grade and on mineralisation, whether it is sulphide or oxide material. The ore is free milling and amenable to cyanidation. The ore body is predominantly oxides, more than 98%, so that is really driving the recoveries. We've got excellent recoveries over life of mine, gold 92.7% and silver 67.5%. So this is really behaving really well from a metallurgical perspective.

In terms of the metal production profile over life of mine this graph just shows the gold to silver ratio. So at the peak we're probably producing about 550,000 ounces of gold, but on top of that we've got quite a significant amount of silver that we need to deal with, and hence the need to have dual metal extraction processes in terms of Merrill-Crowe and then carbon in pulp acting as a scavenger stage.

So moving on to the process flow sheet, this is just a schematic diagram. It is very conventional upfront with a single-stage jaw crusher. We've got a SAG and ball mill, conventional pinion and ring gear driven. And then from that point we move to the leaching in tanks. So it's cyanide leaching in agitated leach tanks. We move on to the Merrill-Crowe circuit. After the Merrill-Crowe, where we remove most of the metal, about 85% of the metal, after that step we've got a CIP scavenger stage. So we've got eight CIP tanks to clean up the tail for us and make sure that we get optimum extraction in the circuit.

I'm just going to point out what's different to a conventional circuit that one would expect. Firstly it is the dual circuit, the Merrill-Crowe portion. Then we've got a cyanide detox step. The aim is to get the cyanide levels to below 15 ppm before we deposit it on the TSF. We've got a mercury retort facility where we recovery some elemental mercury. And then finally, something that we felt very strongly about since the initiation of the project is we wanted to introduce filtered dry stack tailings for this project. So we've got three tailings filters at the tail end. These filters will produce filter cakes which will be transported with trucks before it is placed and compacted on the dry stack facility.

So on the processing and processing infrastructure side, this is an overview of the site. Again very compact. You can see the plant is located very close to the mine. And we are located at an altitude of 4,500 metres above sea level in the Andes, but despite that the topography is very forgiving. We are quite fortunate. This shows what terrain we have to deal with. Firstly, I'm indicating where the truck shop is going to be. Secondly, the process plant. Thirdly, we've got the crusher location, the fourth the dry stack tailings facility location. So it's fairly good terrain that we have to construct this project on.

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The next diagram is what the actual facilities will look like. I just want to highlight that it's a fairly compact site. We are really focussing on integrated operations, so the administration buildings and all the facilities are located very close to each other. We are really driving integration as far as possible with this project. Maybe worth pointing out, in the north-eastern corner we've got the on-site power station and the fuel facilities. As Nick mentioned earlier, this will be on-site power generation due to the distance to the national grid being that far.

Moving on to tailings filtration and the actual deposit, we can see on this map again it's all quite close to the other infrastructure. The tailings filtration plant is approximately 1km away from the processing facility. The tailings will be transported hydraulically to the tailings filter plant where it will be filtered. And from that point it will be handled with conventional trucks and placed on the tailings storage facility.

So the main criteria for the TSF, the first thing we wanted to do was to avoid the site being tailings constrained and we wanted to limit the footprint. So from that perspective filtered tailings was the best option for us. We wanted to eliminate completely any infrastructure downstream of this particular facility, which we managed to do in the layout. We wanted to avoid any upstream tailings storage facilities.

So we went for something that we believe is the best available technology in terms of tailings deposition which deals with the use of vertical plate filters for tailings filtration. This allows us to improve geotechnical and geochemical stability of the tailings in the short and long term post closure as well. Using filtered tailings allows us to reduce water consumption, and I'm very happy to say that the water requirements for this plant are about 12 litres per second, so it is extremely low. We're in an area where water is quite scarce and we really tried to optimise the use of that water as far as possible.

For some of those on the call who may not be familiar with filtered dry stack tailings I've got a couple of photos here, the first being conventional hydraulically placed tailings. And we can see that that contains a lot of water. On the top right-hand side we can see an operating dry stacking in Chile. You can see you can easily manoeuvre on that with heavy mechanised equipment. On the left bottom you can see filter cake. It is soil-like in nature. And then we've got some of our test results. That shows Salares Norte tailings at a moisture content of 15.7%. So this is going to be quite a geotechnically stable facility over the long term because we're trying to reduce the moisture and water content as far as possible.

This is just a schematic of what the actual tailings filtration plant will look like. We need two tailings filters to deal with the capacity, but we have decided that we will install a third filter just to make sure that we've got sufficient redundancy in the system to deal with any eventualities. This plant is also de-coupled from the primary process facility. We've got surge capacity so this can continue to operate independent of the actual processing plant. The TSF has been designed for a capacity of 24.1 million tonnes. And overall the height of this facility will be less than 40 metres. Again I want to highlight that it is compacted. We've got a liner installed. So this is really a best available technology design.

In terms of access roads to site and distances from the airport and port facilities from the capital city of the Atacama Province, we are about 330km away. That is from Copiapó. We are 180km away from El Salvador airport. The port of Angamos which will serve as the main entry point for the construction phase is about 850km away, but there are also other port facilities that are located a bit closer like the Port of Huasco. In terms of the site access road all of this is existing, so there is no big expenditure required to construct access roads. The only thing that we need to focus on as part of the project is internal roads. So there is no significant expenditure in that regard.

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Moving on to power and fuel, the power station and fuel station is in the top right-hand corner of this slide. And it is quite a modular design. Initially we will focus on diesel generators. The objective is to get the plant away with a technically proven solution, and from that point we will start to introduce renewable energy as per our strategy that we've developed. We are more than 100km away from the grid. We believe that non-conventional renewable energy is a very likely option for us, but regardless of this we need 100% thermal generation capacity to operate this plant during night obviously. So the base case considers a diesel power station of which we will install about 17.5 megawatts. That's installed capacity. The actual requirement is close to 12 to 13 megawatts on an average basis. And that will be operated under a boot contract modality.

And then we will continue with staged introduction of non-conventional or renewable energies starting with non-process loads. So this is the renewable energy strategy. We can see we are following the plant ramp-up with the amount of renewable energy we plan to incorporate for the project, our final target being to generate about 20% of total energy consumption by renewable energy sources approximately two years after we commission the plant.

So there are various benefits for going with the staged approach, and that is basically that the intent is not to complicate the actual construction and commissioning of the processing facility. We want to get that away and afterwards start with the construction of the renewable energy facilities for the project. We envisage energy savings of approximately 75 cents per ton once we have this strategy fully implemented. That hasn't been considered in the actual project financials to date.

In terms of water supply we are dependent on ground water that is located approximately 12km away from the processing facility. We've already got water rights granted at 114 litres per second. The current demand for the plant is only about 30 litres per second. The water will be sourced from two main wells. And the water quality is generally of good condition. TDS is below 1,000 so we're quite fortunate in that regard. For potable water we plan to install a reverse osmosis plant. For sustainable development I will give back to Max.

### **Max Combes – Project Director**

Thank you Francois. In terms of safety and health management we have been working in preparation for this project for many years. We have had exploration activities and also early construction activities at site for a long time. That has allowed us to experiment with the conditions of the site and the conditions of the altitude. So we've got a very mature risk management process in place. We've got a very good clinic facility taking care of in particular the altitude problems. We have an emergency brigade already in place and also we have incorporated in the last year the proactive measures and practises with our workforce. So we are working with first-class contractors, so we have already integrated our safety manual for the project taking into consideration both companies' high standards.

In terms of environmental we have focussed mainly in the baseline studies in recent years to feed our EIA and feasibility study. We have also built a very robust hydro-geological model. A lot of drilling has been done at site to understand very well the ground water. And we have also set the conditions for climate change management and this has been incorporated into the technology we are including in the project. And of course we've got the day to day environmental management like waste management and compliance to the permits we have already in place.

In terms of the EIA process, as I mentioned before we have introduced or submitted to the authority the EIA

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document last July. The recently introduced EIA is an alteration on the loss of the chinchilla habitat. A chinchilla is a species that is an endangered species in Chile declared in Chile before the recent EIA. We have received the first document of questions and observations from the authority last October. Since then the team has been working to answer all these observations and questions.

And in the meantime in January there has been declared an indigenous consultation by the authorities. We want to consult with some of the indigenous communities that are close by the road we're going to use. If they are in agreement with the project and the measures we are implementing for them the indigenous consultation was finally closed last week with a letter from the community indicating that they have already negotiated or agreed with us the measures and activities we are going to do together. We've got a long-term agreement with this community. That was a unique phase in Chile where indigenous consultation is closed by the request of the same community. As I mentioned before, we are ready to present the addendum of the first questions and observations. And if everything goes well we're going to be introducing this by the end of this week.

In terms of project execution strategy just a quick overview of the schedule of the project. As Nick mentioned, we intend to go to construction in the fourth quarter of 2020 if we get all the permits already in place. And we have a work scale taking into account the weather conditions, the altitude and also the construction strategy that we have designed for the project that is mainly based on mobilisation and doing as many activities we can outside of the project. As mentioned, considering all the contingencies we are expecting to have the first gold in the first quarter of 2023.

In terms of the results of the business case, as we mentioned the capex is \$834 million in December 2018 money terms. This is a split of the capex. You can see around 20% of the capex is related to pre-stripping and process plant is 38%. The rest is the different facilities and the cost of utilities. In terms of the all-in sustaining cost there is also a graph of the split where the cost is. I'm not going to go into that detail. It's in the presentation.

In terms of metal production as I mentioned before we have the first seven years with very high production and after that we are taking the stocks with lower grade. And you can see that during the first seven years we have also a very low all-in sustaining cost. We have also included here the development cost. We're going to spend \$80 million between January this year until the sanction of the project. After that is \$134 million. The all-in sustaining cost as I mentioned is \$545. And the all-in cost including the initial capex is \$785 per ounce.

Our free cash flow margin is 46% and the NPV is based on \$1,200 gold. This is not taking into account today's gold price. The NPV would be \$510 million. The IRR is close to 22% at \$1,200 gold and \$17.50 silver. If we consider the discounted NPV of January was \$402 million it is still a very robust project. That's including the \$80 million of pre-development. I will hand over to Nick to talk about the next steps.

### **Nick Holland – CEO**

Thank you very much, Max. So obviously there's been a lot of work ongoing to get us to this point. Clearly as you can see we're still around about 18 months away from what we would hope to be a construction start. As Max has mentioned, there are obviously permits and so on. There is the feedback from the authorities on the EIA. So we are working through that, but so far so good. So the first and most important milestone is to get that EIA approval. As we mentioned earlier it was formally accepted in July of last year, so we would expect to have that in place, all being well, by the middle of next year.

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In the meantime we will continue doing all of the preparatory work so that there can be a construction start. And key towards that is doing the detailed engineering to make sure that we really firm up the sequence of activities and also make sure we understand the detail behind all of that. That will de-risk the project significantly and make sure that we can hit the schedule that Max briefly talked about when he showed the project execution plan timeframe. So that will be the work that is included in that \$80 million or so that Max has talked about to get us to that point where we can start the construction of the project.

In addition obviously a lot of people have asked us this on the road when we first put out the feasibility study results and the maiden reserve. How are we going to fund this particular project? As you can see from the project the good news is it's very robust. I think you will find that this project still looks pretty good at prices below \$1,200. You can see it's a short payback period. Because of the accelerated mining strategy we are able to preferentially feed the higher grade in the earlier part of the mine schedule. So from a financial perspective this shouldn't be a high risk project to finance.

So the good news there is that this is something that I think even at fairly conservative prices we should be able to come up with a funding strategy that works for us. We don't know exactly what that strategy is going to be at this stage. What I can share with you is that we are evaluating a number of different strategies. We may bring in a partner. That doesn't necessarily mean it has to be a fully-fledged joint venture. It could be a passive partner. It could be a strong technical partner. We're going to look at all of these options, so we haven't locked ourselves into that.

But clearly as we prepare ourselves for a final board approval, which would obviously incorporate a funding strategy, we're going to be working through that. We've got time. Bear in mind that the EIA we're still a year away at least from getting that approval in all likelihood. So we've got time to work through these issues and we will figure out the best strategy, obviously taking into account where Gold Fields is as a company and what it wants to do.

But certainly this is the kind of project – and I just want to reiterate what Max and the team have said here today – that ticks all the boxes in terms of the Gold Fields strategy. It's a long life operation. It's ten years plus. It's low cost. It's in a jurisdiction that we like and we've been in for over ten years. We've been in Chile now for a good ten years plus, so we've really started to learn a lot about the jurisdiction. As you have heard, it is in a belt that is very prospective and contains multi-million ounce deposits that just got bigger over time, as Diego pointed out to you earlier in the presentation.

So the funding strategy is key. We will have to decide whether we go it alone, whether we go with a partner or whether we look at other innovative financing techniques. But there is a team working on that in tandem with all of the work that Max and his team are doing to get this project ready for a construct decision. So final board approval of course would be when we get the final environmental impact assessment. We will have to update our numbers obviously, because as you heard the project is stated in Q4 2018 terms. So when we take it to the board for final approval we will have to assess whether there is any impact of any escalation or other changes, which obviously we can't discount between now and when we have a construction approval and a construction start.

Lastly, let's just bear in mind Salares Norte is only a small part of the total land package that we have here. And as we've mentioned earlier you can see that we have a lot of ground around us that is very prospective. So whilst we're doing all this work and getting the project ready to go, at the same time we're also doing district exploration. We're actively drilling a number of targets. It's early days, but so far it looks

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encouraging. And I think over time there is every reason to believe that we will add to this project. And certainly from where I sit and the team we see Salares Norte as the first step in what will be a much bigger land package that is exploited for the benefit of Gold Fields shareholders over time.

So with that I think it's probably a good time for us to close and leave now the time that we do have for questions. Bear in mind Luis Rivera is here as well, who is the Regional Head in South America. He is based here in Lima of course. Avishkar is here, Max, and Francois and Diego you have heard from. So with that we're going to hand it back to questions which possibly Avishkar will monitor for us.

#### **Avishkar Nagaser – Investor Relations**

**I will. There are quite a few questions so I'm going to ask them one at a time. I suppose that's the best way. Firstly, James Bell from RBC. I see the study metrics and reserves use \$17.50 silver which is above the spot price of \$15.17. If you run \$1,300 gold and spot silver how does the project look? Is the project sensitive to moves in the silver price?**

#### **Francois Swanepoel – Technical Director**

Silver at the study prices account for approximately 10% of the overall project value. So I think there is probably about a 15% change between the study price we've used for silver and spot. So therefore it's not sensitive so it wouldn't move the project metrics in any significant way.

#### **Avishkar Nagaser – Investor Relations**

**Can you talk about the trade-off between contractor versus owner mining given potential mine life extensions that deposits like this have? Are there contractors that have successfully operated at the altitude of Salares Norte in Chile?**

#### **Francois Swanepoel – Technical Director**

So firstly we need to realise that Gold Fields doesn't have any active operations in Chile. That was a key factor in our decision to go with contractor mining. That coupled with the fact that we wanted to keep initial capex under control led us to contractor mining. In terms of contractors operating at this elevation, Chile is a mining country with significant copper deposits in the Andes. So there are a number of contractors operating at similar altitudes and it's something that the industry here is really good at, operating at those sorts of altitudes. So no, we are definitely not outside the envelope as far as that is concerned.

#### **Avishkar Nagaser – Investor Relations**

**And a last one from James Bell. How much project debt do you think the project can handle of the initial capital? Can you also talk about the potential returns you would consider as acceptable to Gold Fields when partnering with another miner?**

#### **Nick Holland – CEO**

Okay, I will answer that question. Certainly if you looked at conventional project financing probably with a degree of commodity hedging put in place this project could probably be financed through conventional project financing given the fact that there's a 2.2 year payback. We wouldn't think that that would be a

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challenge for us. And certainly initial indications from the market here in South America are there'd be an appetite to finance a project like this. I think what we have to do here is not just look at the project but look at the impact on the greater Gold Fields and the fact that we need to consider what other commitments we've got. That's why we're going to be looking at other opportunities. Certainly it could be project finance. We're not saying that we're discounting that as an option.

In terms of how much we would give away and what sort of deal we would want, that can only be assessed if we test the market. So one of the things we may consider is to determine what we think the market might value this project at at some point over the next six months. But at this stage we're not going to commit to any particular route or to any particular outcome. I think it's fair to say, James, that the work is all ahead of us and once we've done that we will come back and give a better indication. The point is we've got time. It's not something I think that has to be sorted out in the next three months. But certainly from my perspective by the end of the year we'd need to have a strong indication as to where we are. Thank you.

#### **Avishkar Nagaser – Investor Relations**

**Okay. I've got two from Yatish at Macquarie. With the SMA taking a hard stance on Kinross and Barrick's operations on polluting the environment how confident are you in terms of your environmental management plans with a specific focus on water management? What measures are in place to circumvent any pollution of ground water?**

#### **Max Combes – Project Director**

Okay. That's a good question. Of course during this project study we have taken into consideration where we are. Atacama is a desert. Water is a big issue. So we have taken this very seriously. I just want to point out some key differences here. The projects you just mentioned are located in a deep basin and they are located on top of the basin of the Copiapó River, and the Copiapó River feeds downstream into farming and also into the city. It is a very, very sensitive area. They have some issues there related to infiltration and some other accusations.

In our case, just to differentiate, we are located in a closed basin up in the Salar Grande. This is a basin where we are the only one sitting in that basin. There are no other commercial activities or no human activity in the basin. The closest or the nearest community people are 65km away two or three basins downstream. So with regards to water we are the only users. We have obtained the water rights and also deal with the authority to protect that basin in terms of being the owners of all the rights. As Francois mentioned, we are using very small quantity of water. We've got 114 litres per second water rights already obtained. We are asking for 30 litres per second for the necessities of the plant, the different activities like the mine and other infrastructures.

We have also included the latest technology as mentioned here in terms of tailings filtration in order to reduce the minimum possible water. We have included without the need to do it, just to avoid having any issues with the recent experience, we have included a membrane underneath the stacked dry and compacted tailings. It wasn't necessary from the pure technical point of view. And also we have done a lot of work in terms of geochemistry in our waste dumps. We've got very well developed models to prove that there is very low probability of impacting the ground water.

#### **Avishkar Nagaser – Investor Relations**

**Okay. One more from Yatish. In years four and five would there be potential to consider an underground transition given the ore body is open at depth? If so, are there implications from a processing perspective if you transition from oxides to sulphides? Is the plant being constructed on a modular basis?**

**Francois Swanepoel – Technical Director**

At this stage the process flow sheet caters for oxide ores only. The ore as I mentioned is 98% oxides so it is entirely driven by that. I think at this stage what we require for the sulphides would be some deep drilling. So there is more geological information that would be required for us to make any reasonable assessment of that. I think there is definitely a critical mass of oxides to get this project underway, and I think the sulphides option will be explored further down the road.

**Nick Holland – CEO**

Can I just add to what Francois said? And it's coming back to the district exploration. Given the fact that we have a number of concessions within 20km of the plant with good terrain and topography it would be more logical for us to look for shallower oxides around us than to go deeper below the existing operations. So if anything the greater likelihood is for us to be adding incremental oxides from the concessions around us. And that speaks to the district exploration programme. That would probably be the first preference for us. And I think there's a lot there that could keep us busy for many years if we're successful in the exploration work that we're currently busy with. Thank you.

**Avishkar Nagaser – Investor Relations**

**Okay. I've got a whole bunch of questions from Victor Flores. I'm going to ask them one at a time. Could you please provide nominal plant capacity in tonnes per year?**

**Francois Swanepoel – Technical Director**

The plant capacity is 2 million tonnes per annum, so it's a fairly small front end to the plant. Maybe on the back end there is going to be a significant amount of ounces coming out. So the plant has been designed to push out about 5 million ounces of gold and silver combined, but it's 2 million tonnes per annum.

**Avishkar Nagaser – Investor Relations**

**And then can you provide unit costs in terms of mining cost per ton moved, and processing cost per ton processed, and then G&A in Dollars?**

**Francois Swanepoel – Technical Director**

Firstly in terms of mining cost, life of mine mining cost is \$2.28 per ton. The processing cost is just over \$35 per ton over life of mine. And then finally G&A on an average basis is \$25 million per year.

**Avishkar Nagaser – Investor Relations**

**Sustaining capital Dollar million per year over life of mine, and then closure costs in Dollar million.**

**Max Combes – Project Director**

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Just to add to what Francois said. These are based in [unclear].

**Francois Swanepoel – Technical Director**

In terms of sustaining capex, sustaining capex is just below \$17 million life of mine, and closure cost has been estimated at \$78.3 million. And I just want to point out, that number is heavily influenced by the amount of rainfall or lack of water on site. There is no effluent on site so we don't have large water treatment requirements at the end of life. So that definitely impacts the closure burden. And as I said, that's \$78 million.

**Avishkar Nagaser – Investor Relations**

**Okay. Assumptions on ore hardness and assumptions on power cost.**

**Francois Swanepoel – Technical Director**

Okay. Ore hardness we have done extensive comminution circuit test work. The ore is classified as between medium to moderate hardness. So if we look at A cross B type values it is in the 40 range. So it is definitely not a challenge. It is nothing like we have at some of our other operations, I'm glad to say, in West Africa for example. So it is quite manageable. In terms of power cost the study was performed with 100% diesel power and the cost we used for the study considers oil price at \$70 per barrel which roughly translates to 70 cents per litre of diesel. And that gives us a power cost of just over 28 cents per kilowatt hour.

**Avishkar Nagaser – Investor Relations**

**Okay. And then a last one from Victor. What proportion of cost is US Dollars versus other currency?**

**Francois Swanepoel – Technical Director**

The current estimate is that between 35% and 40% is US based and the remainder will be mostly CLP, Chilean Peso.

**Avishkar Nagaser – Investor Relations**

**Thank you, Victor. Rich Howard, a question from him. Please give colour related to the Franco purchase of royalty.**

**Max Combes – Project Director**

This process is independent to us, but just to mention that we currently conserve the same rights we had before the sale of that royalty which is 2%. We've got the right to buy the 1% – this is \$6 million – once we are in production. So basically it's that. We are conserving the same contract structure we had before the selling of that.

**Nick Holland – CEO**

I think the point is there's no commercial impact on us.

**Max Combes – Project Director**

That's included in the financial model.

**Avishkar Nagaser – Investor Relations**

**Okay. Then Patrick Mann. What is the biggest risk to project delivery?**

**Max Combes – Project Director**

Well, I would say that it's always permitting. In Chile we've got a lot of regulations and a lot of permits that we need to go through. From a technical point of view I think we've got a very good project. It is very mature. We've been studying it for more than three years. We've got first class contractors and consultants. We've been advancing detailed engineering. So I think we will be in a unique position compared to other projects when we go to construction. We're going to have most of the engineering already done. So from a technical point of view I think the risk is low. So the biggest risk is the delay on the permitting I would say.

**Avishkar Nagaser – Investor Relations**

**Okay. Then I've got a whole lot again from Adrian Hammond at Standard Bank. Does this project represent growth or replacement for Gold Fields?**

**Nick Holland – CEO**

Adrian, I would say that we've mentioned before that we have a solid profile over the next ten years of about 2 million ounces for Gold Fields. That does not include Salares Norte. That is just on the existing operations with Gruyere coming into production in June, and with the Damang ramp-up which is happening as we speak, and of course the base load from everywhere else. So that 2 million ounces over ten years did not assume that Salares Norte went ahead. So if Salares Norte went ahead and if we did 100% ourselves then as you can see particularly in the first seven years you'd be adding over 400,000 ounces a year of production to the base. And obviously if we did a deal that was 50/50 with somebody else then obviously you would be adding half those ounces. So essentially this would be a growth in the production ounces for the group if we go ahead with this.

**Avishkar Nagaser – Investor Relations**

**Would Gold Fields lift its net debt to EBITDA threshold to help fund the project, and to what level?**

**Nick Holland – CEO**

So the beauty of this project is that essentially the big Dollars only start happening from the beginning of 2021. And as you've heard from Max and the team the project build is just over two years. So we would be spending of the order of that \$800 million at a rate of about \$400 million a year roughly. By that time we will have finished all the project work at Damang. We will have finished all the project work at Gruyere. Capital would be less. So we would be in a good position in terms of lower capital to absorb this. In addition, we as we have mentioned before we would expect Gold Fields – assuming that the market prices are roughly where they are now – over the next 18 months, particularly when Gruyere gets into production in

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the second half of the year, to be cash positive and for us to be able to reduce our debt between then and when this project starts to be funded.

So I think we will be in a good position to assess. But at the same time we would take a very hard look at this project before we committed to doing 100% of it on our own. We would look very carefully at where the market is, where we are, and make sure that we can comfortably do this with headroom to spare. We would never fund this project by pushing the limits here. We would do this in a way that we could comfortably do. And we've got time. The beauty here is we've got time. We don't have to make that call today. We will make that call I'm pretty sure in the next 12 to 18 months before we start. And that will be determining the right answer for us going forward.

**Avishkar Nagaser – Investor Relations**

**Okay. Have you approached potential partners, and if so would you want to remain the operator?**

**Nick Holland – CEO**

We have not followed an active process at this stage of soliciting interest from potential partners. But what I can tell you is there has been no lack of interest, unsolicited that is, from companies that would wish to partner with us. So I don't think this would be a challenge in finding a partner. In terms of operatorship I think our preference would be to operate. But that said if we get the right technical partner we would obviously have to look at all of the commercial aspects in any kind of deal where we are not the operators. I think our first prize, particularly given the fact that we see Salares as being the start of something much bigger in the district, it would be preferable for us to be operators. But again there are not hard and fast lines in the sand at this stage.

**Avishkar Nagaser – Investor Relations**

**What are the key project risks identified? Do you want to talk more about it?**

**Max Combes – Project Director**

Well, at this stage most of the project risks identified are related to the EIA process and a delay that this can cause in the process. And they are mainly related to the questions and observations we are receiving related to how we're going to handle the chinchilla impact, how we're going to handle the indigenous communities and questions about water. So these are the main risks. There are risks of course associated with the altitude and the weather conditions that are built into the project execution strategy and also into the scale. And the number one risk of course in our list is related to safety and related to the long distance to drive to site. That is related to a potential accident transporting people. So there is no specific or high risk other than those.

**Avishkar Nagaser – Investor Relations**

**Okay. Are the costs provided net of silver credits?**

**Francois Swanepoel – Technical Director**

The costs are reported on a gold equivalent basis. So silver is included.

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**Avishkar Nagaser – Investor Relations**

**Okay. Potential upside to reserves within the next two years?**

**Max Combes – Project Director**

Diego, do you want to answer that?

**Diego Huete – Geology & Exploration**

Well, we can see even some sections that we went through, Agua Amarga still has potential. It is still open, the deposit. But obviously very close to what we call near mine around Salares there are a couple of targets that can provide some additional resource first and then reserves to the project life of mine.

**Max Combes – Project Director**

The thing is year on year we have been improving the project. The more we drill the more we find. As Diego mentioned, we need to close this for the feasibility study at some point in time. But there is still high potential to grow this in the future years.

**Avishkar Nagaser – Investor Relations**

**Tax and royalty rates?**

**Francois Swanepoel – Technical Director**

So the corporate income tax in Chile is 27%. On top of that there is a mining tax which really functions as a royalty. We've got a third party royalty on the project but there are no government-imposed royalties. The third party royalty is 1% on the project. That is after having bought back the additional second percent as Max explained earlier.

**Avishkar Nagaser – Investor Relations**

**And then what contingency is built into the capex schedule?**

**Max Combes – Project Director**

I think it is around 15% contingency.

**Avishkar Nagaser – Investor Relations**

**The last lot of questions I have are from Tanya at Scotia. Some of them have been answered already so I won't go through those. Why is the tailings filter facility separate from the processing plant?**

**Francois Swanepoel – Technical Director**

That was a deliberate design point. What we wanted to do is find the optimal site for tailings filtration on

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the property, and we've done that looking at hydrogeology. And the next point was to see what the best means is of transporting tailings to that particular point. We had two options. Either install the tailings filtration plant at the processing facility, but then we had to truck the tailings over native soil to the tailings storage facility. And we thought it was a much better option to pump it hydraulically to the tailings filter facility, filter it there, and that being adjacent to the facility limit the transport of the actual dry tailings to the minimum amount possible. So we definitely think it's the best design option for us.

**Avishkar Nagaser – Investor Relations**

**And the other unanswered one from Tanya is what currency assumption have you used and how sensitive is it to currency change?**

**Max Combes – Project Director**

We have been using 651 Peso per Dollar. As we mentioned more than 60% of the cost of the project is in Chilean Peso so it is sensitive.

**Avishkar Nagaser – Investor Relations**

**Just a reminder, if you want to ask a question please submit to the webcast on the website. And then Andrew Williams from Sun Valley is asking: Are there any contractor mining cost benchmarks that are comparable to the 228 you've quoted? And is any of the material three deck [?]?**

**Francois Swanepoel – Technical Director**

Firstly the question of three deck [?]. Yes, we have got quite a significant amount of steam metered alternation [?] which is a weak alteration. We've got about 40 million tonnes between Brecha Principal and Agua Amarga combined, and most of that materials will be three deck [?]. In terms of benchmarking we have done a number of studies. In the first instance we invited fixed and firm quotes from multiple contractors. Secondly, we prepared a shadow of it with our mining consultant. And thirdly, we had an independent peer review by an expert with a significant database of mining costs in Chile. And we are quite confident that the values we are using in the model are representative of current rates in Chile.

**Avishkar Nagaser – Investor Relations**

Okay, that's it from the webcast. If you have any other questions please email me and I will get the team to come back to you. Any closing comments, Nick?

**Nick Holland – CEO**

I just want to say thanks to everybody for dialling in for all of the very good detailed questions that we've had as a follow-on from the presentation. We believe that this is one of the more exciting projects in our portfolio and certainly it represents something we can add on to over time. We really don't see this project as being what you see is what you get. We see this as being the first step in a growth strategy in a district that has a lot of potential. A lot of work ahead of us of course. We've got to get the project now to a point where we can get it to a construction decision. A lot of work there.

As Max has said, we're doing a lot of work planning the construction and in particular adopting a strategy of



**Speaker**

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making sure that we can do as much work off-site in terms of fabrication as opposed to doing it on-site. That is going to make it cheaper, easier and less risky. So the team is working on all of those activities between now and hopefully when we can start building the mine in the Spring of next year. So with that I just want to thank everybody for joining us today. I want to thank the team who have come up from Chile from Santiago to present, Luis and his team here in Lima for providing the overall support, and of course Avishkar for helping us to coordinate this. With that we want to say thank you very much. Have a great day.

END OF TRANSCRIPT