

## Diego Hernandez - BHP Billiton - President, Base Metals

# Slide 2

Good morning to those in London and good afternoon to those in Sydney. I am Diego Hernandez, the President of BHP Billiton Base Metals and I would like to welcome you all to the third Biannual BHP Billiton Base Metals briefing. Our guests in the London and Sydney auditoriums and those listening on their phone or broadband, welcome.

Our last briefing was during LME week in October 2004 and obviously a lot has happened over the intervening period.

As the agenda shows, I will be joined here in London by Glenn Kellow, our VP Finance and CFO and John Crofts, Director of Base Metals Marketing.

Presenting in Sydney will be Roger Higgins, our Vice President and Chief Operating Officer for Base Metals Australia. Also in Australia, we have Ken Pickering, VP of Projects and Technology, and Paul Benson, our Chief Development Officer who I may call on during the question and answer session.

### Slide 3

Firstly, before we begin, I need to draw your attention to the standard disclaimer shown on this slide.

### Slide 4

We will tend to focus today more on what is new or changing rather than repeating what we have said in the past. Some of the slides have additional information which you may find interesting to read after the presentation.

Since our last presentation, the CSG has grown; Obviously we have acquired the Olympic Dam mine, and in response to this, we have established a Base Metals Regional office in Adelaide which is responsible for the Olympic Dam and Cannington operations and the Olympic Dam expansion project. Due to the ever increasing growing customer base in Asia, we have also relocated the Base Metals Marketing group from its position in The Hague to the BHP Billiton Marketing hub in Singapore. We are also preparing for the commissioning of our new greenfield development of the Spence mine in northern Chile.

Today, we have over 19,000 employees and operational contractors and 11,000 construction contractors working on the projects.

## Slide 5

This slide shows our vision. I wont read it out to you but it shows you what is important to us and what our ambitions are. I think the overall message we want to leave you with today is best given by paraphrasing one of Chip Goodyear's themes. "BHP Billiton Base Metals is currently achieving outstanding returns as preparation and planning meet with opportunity, allowing us to maximise production at times of record nominal prices."

Additionally, you will see today we are not just focused on the short term. We continue to invest to bring on new production, investigate new opportunities and explore to find the next Escondida. In many ways our goals are aspirational. We will never stop trying to improve because we know we can always get better.

# Slide 6

BHP Billiton's strategic focus has been recently revised. It is well illustrated in this pyramid with seven layers. From bottom to top, People; "Licence to Operate"; World Class Assets; The BHP Billiton Way; Financial Strength and Discipline; Project Pipeline; and Growth Options. The Base Metals strategy follows the same pattern and as you can see we can give numerous examples.



# Slide 7

Sustainability is the key to our "Licence to Operate". We aim to achieve zero harm with respect to our workforce, the communities we interact with and the environment in which we operate. We are proud of our record that has been recognised through numerous awards. I could talk for the whole hour on the ways we work with communities and on protecting the environment, but in the limited time we have available today, I wanted to focus on safety.

The graph shows one of our major trailing safety statistics. The orange line shows the Base Metals operations excluding Olympic Dam, that means those that have been in our portfolio since the formation of the CSG at the time of the merger in 2001. It is hard to see the trend but it is real and downwards. We have reduced the incident rate by 30% since June 2004. What is most important about this is that this is the best in class by world standards.

The second line shows Olympic Dam's performance. Although not bad by Australian underground mining standards, we are not satisfied with the status quo. We took over management in early June last year. As you are aware, there was a fatality shortly afterwards. You can however see we have made some solid improvements but we have just started the journey to zero harm. I'm confident that at our next briefing, it will be much closer to the Base Metals average.

### Slide 8

We have delivered production growth at a time of rising prices. From the time of the formation of the CSG to the end of fiscal year 2005, we have increased annual production by over 25%. Basing on performance year to date, we are confident we will produce in excess of 1.2 million tons this financial year, thus the increase over the last five years has been close to 50%.

### Slide 9

This page shows where we ranked in calendar 2005 in terms of size in the Base Metals world. Since the last briefing, we have moved up in each. We are the second largest copper producer in the world and the largest private producer. Codelco is a Chilean state owned entity. Note we have only included WMC's copper production from when we gained control in June 2005. We are the largest producers of lead and silver in the world. Although we will not discuss uranium during this briefing, we have included the chart for completeness. Unlike the copper chart, this was Olympic Dam's entire 2005 production.

We are also a top 20 producer of Zinc. As I think BHP Billiton is the only company that appears as a major producer of all the Base Metals, it is arguable that it does qualify us as the premier Base Metals producer.

# Slide 10

Moving to key issues. Obviously in a period of either high or low prices, market outlook tends to be an area of interest. John Crofts will go into more detail but suffice it to say with low stocks and healthy demand, prices should remain above historic averages for some time to come. We will cover the key production issues later in the presentation.

Finally, you are all aware of the industry wide issues of finding suitably qualified people and of rising costs. Although we are not immune to these pressures, you will see in the project section that we have mitigated a reasonable percentage of this. Also we have actually found that we do have an advantage of being able to transfer talented people across the globe where the needs are greatest. Escondida benefited from the experience brought in to help in its development from North America and Australia. We are finding now we are able to similarly help develop our Australian operations by bringing experienced professionals from South America. This is obviously one of the benefits of being part of such a large company.

## Slide 11

BHP Billiton Base Metals has delivered production growth at the right time. It is the only major copper company bringing on major new copper capacity in 2006. We continue to develop long term growth options and have a portfolio that can perform in a lower price environment as well as delivering exceptional returns in a high price environment.



I will now hand over to Glenn Kellow who will review the financial performance for the CSG.

# Glenn Kellow – BHP Billiton – VP and Chief CFO, Base Metals

# Slide 12

Thank you, Diego. Good morning and good afternoon to all. I am going to be giving some further details on our underlying profit performance and some of the key drivers in price, volume and cost.

## Slide 13

These numbers represent the previously reported half year results. Underlying EBIT for the six months was an increase of 82% compared to the corresponding period. I'm going to give a more detailed variance breakdown shortly, but a few things to highlight on this table are:

- the outstanding performance of Escondida
- the inclusion of Olympic Dam operational results following the acquisition in June 2005 (note we report any project costs associated with the expansion project under the exploration business development line)
- the emergence of Antamina as the number two contributor following increased production of copper and moly
- the strong performance of Cannington with operational de-bottlenecking continuing to offset the natural grade decline.
- Cerro Colorado was affected by an earthquake in June 2005 but the effect was partly mitigated by business interruption insurance.

## Slide 14

This table illustrates the sensitivity to EBIT of changes in commodity prices and key exchange rates. I'm pleased to note that these sensitivities have grown since the last time we showed you the slide as the underlying business has also grown. The estimates that are calculated are net of price linked costs (such as the price participation effect of TC/RCs) as well as the impact of the revaluation of unfinalised shipments. In these times of rising prices, unfinalised shipments have had a very favourable effect. Consistent with industry practice, the bulk of our copper sales are priced on the basis of the monthly average of the LME High Grade Copper Settlement Price for a period following shipment. The common market quotational periods in the industry are one month after the month of shipment for cathode and two to three months after the month of arrival for concentrate.

Our revenue recognition policy calls for shipments for which the final price is not yet known, to be recognised at the lower of the spot closing market value of the period or the relevant forward curve at the close of the period. Revaluations are made monthly on this basis until pricing is finalised. This commercial structure of our sales will result in the average realised copper price being generally higher than the LME average during rising prices and generally lower during a declining market.

By way of specific illustration of this effect (and ignoring premium and other adjustments) the average realised copper price reported for our revenue for the half year to December 2005 was \$2.04 per pound versus the LME average of \$1.84 per pound.

# Slide 15

This next chart shows the variance breakdown in more detail. I spent some time talking about rising price effects already, but as you can see it's not just about higher prices. Having prices in the market is one thing, but we also had higher sales volumes to realise these prices across all Base Metals products. In particular copper and molybdenum where record production levels were achieved during the period.



In this cyclical environment we have been experiencing some specific cost pressures with higher price linked and input costs, mainly reflecting increased TC/RC charges including price participation, along with statutory labour bonuses in Peru and increased energy and other input costs.

To counter the effect of rising costs, we have a business improvement program that includes the Six Sigma tool, ongoing leverage of our purchasing power through global and regional supply networks and new initiatives such as improving tyre performance. We believe that our use of the Six Sigma programme benchmarks up with best practice. We have consistently tracked about half of our benefits in cost savings and about half in volume improvements through de-bottlenecking under the program. Our savings for the six months illustrated here bring our total reported annual benefits since we relaunched the programme in 2003 to over \$200m.

## Slide 16

This chart shows the effect of increased volumes for the first half of the year - the blue bar at average realised margins for last year, plus the new operation, Olympic Dam at current year prices. Although this is how the company traditionally illustrates the effect, it's also worth pointing out the red bar - which demonstrates the benefits of these volumes in the higher price environment. The chart has grouped all products for Olympic Dam (copper, gold, uranium and silver) and other products are shown separately for the remainder of the portfolio. These higher volumes come in the form of record production at Escondida, record moly production at Antamina, higher shipments from Cannington and the benefits of the acquisition of Olympic Dam. Countering this somewhat was the reduced production through this period as Cerro Colorado ramped up from the earthquake. The combined effect across all products is \$250m at last year's prices, or alternatively just under \$300m at this year's prices.

### Slide 17

Now turning to costs. These charts give two different views of the cash cost of copper in cents per pound using the Brook Hunt definition. The first pie chart gives a breakdown of cost by type and the waterfall chart shows a 12% increase in cash costs between the full year '05 and the first half of this year. The cost pressures facing the industry have been well highlighted in recent times but it's important to note that some of these costs need to be considered as cyclical in nature.

You can see from the pie chart that the biggest single cost item is treatment and refining charges which were at record contract levels and also incurred significant price participation. John Crofts will later describe our outlook for the custom smelting market going forward.

Our labour costs in Peru are subject to statutory profit sharing of 8% of EBIT, which impacted Tintaya and Antamina. The importance of energy prices on our cost base can also be seen. We have mentioned the Cerro Colorado earthquake and this had a four cent per pound impact. Finally bringing the underground operation at Olympic Dam into the CSG added approximately 3c per pound versus the weighted average of our portfolio.

Offsetting these pressures, our costs benefited from the effect of higher volumes, higher grade from the start up of Escondida Norte, and the benefits I described earlier of the ongoing business improvement programme.

## Slide 18

The effect of all of these factors can now be seen. Rising prices, volume growth and record production, cost pressure but a track record of cost management and delivering business improvement, leading to strong EBIT margin growth and record profits. I will now hand over to John Crofts here in London to further discuss the market environment.

## John Crofts - BHP Billiton - Marketing Director, Base Metals

## Slide 19

Thank you Glenn, and good day ladies and gentlemen. Today I want to cover two specific areas related to the marketing activities of BHP Billiton Base Metals. I would like to firstly briefly share our thoughts on



the current refined copper market and then I would like to devote a little bit of time to our view of the copper concentrates market and the pricing of concentrate in that market.

# Slide 20

This chart sets out exchange stocks and prices since January 2004. There is a lot of detail on this chart but it's interesting to look back for a moment to see how we got here with copper prices over \$7,000 a tonne currently. At our last briefing, 18 months ago, we were cautiously optimistic about the future. Back then, demand looked good with growth in China a key driver and stock levels had fallen rapidly, thus providing support for prices. The short term looked positive but there was also forecast to be enough supply coming on stream or restarting to balance the market or even put it into surplus 12 - 18 months out. The main concern on supply was a potential smelter bottleneck which was pushing up TC/RCs rapidly.

In fact, whilst apparent demand was weaker than expected in 2005 (mainly due to heavy de-stocking downstream), the real change was the extraordinary level of disruptions to mine and refined supply as operations were unable to sustain their output and the lack of investment in many parts of the industry over preceding years caught up. Equipment shortages manifested themselves also.

In the end for 2005, compared with forecasts at the end of 2004, refined output was nearly 800,000 tonnes lower than expected, whilst copper in concentrate output was nearly one million tonnes lower, and I'll come back to this later in the presentation. SXEW output was 180,000 tonnes down. Thus, as this chart details, we have seen much larger than usual disruptions and partly as a result of this, an influx of fund money. We are not experts on this but certainly new flows of money appear to be coming into commodities generally, attracted by the non-correlation of commodity indices returns with equity and bond returns - the so called 'New Asset Class'. How this will develop is not for us to predict, but it certainly has made our market more volatile in the short term, and reinforces the need to have the financial and trading capability in order to manage the day-to-day deliveries and business.

## Slide 21

Current price levels are proving especially challenging, not only for our customers and manufacturers, but also for commodity analysts, many of whom have been criticised for being too conservative in their forecasts, to the point where many are wondering if fundamental analysis is appropriate. As would be expected, forecast ranges have become very wide, with large price revisions commonplace. We still believe in fundamentals, and we believe the chart on this slide gives as good an explanation as any, from a fundamental point of view, as to why prices are at such levels, and why forecasts vary so widely. Essentially, when stocks have dropped to such low levels, the relationship between prices and the stock/consumption ratio becomes almost vertical, as prices are now having to act as a constraint on demand, as supply has been unable to keep up in the short term.

For copper, where demand is largely inelastic, this has meant prices have had to rise to very high levels to restrain demand growth in the short term, essentially by encouraging everyone to de-stock to very low levels, and we're seeing that that is not sustainable.

As you can see, a wide range of prices are "justified" at this level of stocks, and until stocks are rebuilt, we would not expect prices to fall back to "more normal" levels.

## Slide 22

Let's move to the more immediate market outlook as we currently see it. This year so far has been very strong for physical cathode demand, with tightness seen in Europe, USA, Japan and Southeast Asia. Premia levels demonstrate this very well, with spot rates rising in all markets, except China, in recent months. We have also seen a resumption of the downward trend in exchange stocks since the beginning of this year.

Certainly, this time of year is seasonally a strong period, but with stocks very low, we have seen a number of consumers struggling to get adequate cathode, and enquiries have held up well.



China has been quieter than expected, but all the evidence points to continued de-stocking due to high prices, and we believe that as the Chinese economy continues to grow strongly, we shall see the market supported by Chinese semi-fabricators returning to the market later in the year.

It also needs to be remembered that China's smelting capacity increases are starting to come online, increasing the proportion of copper imported in the form of concentrates.

## Slide 23

Major independent analysts forecast that the market will move back into surplus later in 2006 or 2007. However, these forecasts, at our last briefing at the end of 2004, were for the market to be in surplus from the end of 2005. As this chart shows, forecast surpluses have subsequently been pushed back, and now even the surplus in 2007 looks more doubtful, as disruptions to production still continue to occur. This is consistent with BHP Billiton's assessment of the market outlook.

## Slide 24

So in summary, the outlook for the refined market looks positive in terms of demand, whilst ongoing supply side disruptions remain a distinct possibility. Longer term, risks to new supply are arguably higher than in the last decade.

# Slide 25

I'd like now to spend a few slides focussing on copper concentrates and the copper concentrate market. We currently sell around three-quarters of our copper in the form of concentrates to customer smelters. This will diminish as the Spence and Escondida Sulphide Leach Projects come onstream later this year. It is, however, still a very significant part of our business.

This slide shows our estimates for the theoretical balance between concentrate supply and demand historically, and a forecast of the gap between supply and demand for the next three years. I emphasise the forecast is the gap because clearly, in practice, there are not the concentrate stocks available to fund such a deficit going forward.

At the last briefing, the concentrates market was in surplus, with treatment and refining charges rising very quickly. At that time, the outlook for 2005 was for another large surplus in copper concentrates as mine supply was forecast to outstrip smelter capacity growth. However, due to 2005 production of copper in concentrates being almost 1,000,000 tonnes lower than expected, even though smelter output was also disrupted, it still meant that we believe the concentrate market was essentially balanced in 2005, as depicted in the graph.

Thus, whilst there are still some concentrate stocks remaining from the 2004 surplus, we do not believe these were increased in 2005. This is important, as we see the market already tightening with treatment and refining charges falling, and we believe this will continue to be the case over the next two years. In fact, our projected shortfall of concentrates, compared to smelter requirements, is the largest we can recall, and may lead to substantial changes in the smelting industry going forward.

## Slide 26

Why is this happening? There has been a rapid growth in Indian and Chinese copper smelting capacity in recent years, and this looks set to continue. With copper demand growing in these countries, there has been an understandable desire to lower raw material costs and add value domestically by importing more copper in the form of concentrates, rather than just in refined form. Smelting capacity and output has increased, helped also by lower capital costs, supportive tariff differentials, the need to expand to get economies of scale and lower operating costs, good local markets for copper and also by-products such as acid. As a result, and not dissimilar to many markets, we see a rapid change in the balance of power in customer smelting. This transitional period is very difficult for those involved, and we are currently entering that period.

# Slide 27

Let me now focus on TC/RCs, and our views on how concentrate should be priced. The black line on the graph is the spot market for copper concentrate. It is a liquid market, it is a very transparent market, and



in essence it is the price discovery mechanism for treatment and refining charges. The spot market, importantly, does not include price participation as a component. In our view, the long term market, or the annual market, whatever it is comprised of in terms of treatment charge, refining charge or price participation, ought to approximate the average of the spot market over the cycle. If there's any systemic bias, sellers would logically change their rate of participation in the spot market. The blue line shows clearly the systemic bias where price participation is unvalued and/or uncapped in annual contract TC/RC negotiations. It reflects the current situation in the market.

Clearly, as the market continues to tighten, we will move to address this distortion. It's not necessarily about the elimination of price participation, but the package of treatment charge, refining charge and price participation in the annual contracts has to meaningfully relate to the price discovery treatment and refining charge levels as reflected in the spot market, and this will be a focus of ours going forward.

## Slide 28

So in summary, we look set to enter a deficit market of some magnitude. The market structure is evolving. Japan will no longer be the largest buyer of concentrates, probably from this year; if not this year, definitely from next. Treatment and refining charges are declining rapidly. We sold a parcel in the market last week at below \$60/t 6c per pound, no price participation. That's reflective of how quickly the market is falling.

There is potential for the deficit to be sufficiently sustained such that smelter capacity rationalisation occurs. Concentrates ought to be priced on the supply-demand fundamentals for concentrates, and that will be a firm policy initiative by BHP Billiton as we enter this market cycle.

With that, I'll hand back to Diego.

## **Diego Hernandez**

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Thank you John. I'll talk now about operations.

## Slide 30

First, Escondida. When we held our last briefing in 2004, Escondida was ramping up from the Phase IV project, and was learning how to manage the new tailings dam. I am pleased to say that Escondida is delivering the results at the best time. You can see the continued growth in production over the last five years, and this will continue with the commissioning of the Sulphide Leach Project later this year. Of note, our share of EBIT of \$1.1 billion in the first half was on the back of an average LME price of \$1.84 per pound. With copper over \$2 per pound from January 1, the second half promised to be much stronger. With current prices Escondida has the distinction of, what I am sure is a first in the industry, of generating over \$1 million in EBIT every hour (on 100% basis). It is, without a doubt, the best copper mine in the world.

#### Slide 31

Antamina earned the distinction of being the second highest EBIT contributor in the CSG in the first half. Antamina has been a story of continuous improvement. I will let you review the operational highlights later but it is worth pointing out that it has managed to maximise moly production at a time of high price. In some months the site operating costs were covered solely by moly revenue! As you will see, the site continues with its exploration program and we believe there is good potential to increase reserves.

#### Slide 32

As you will be aware, Cerro Colorado was impacted by an earthquake measuring over 8 on the Richter scale in the middle of last year. The major disruption to production was the reduction in permeability in the leach piles thus reducing acid flow and slowing copper release. In the photo on this slide, the top of the ore heap used to be at the same level as the stairs. The team on site have worked tirelessly to bring the operation back to normal levels. It is pleasing to see that the site has achieved production targets on its recovery plan - in fact recently breaking the record for material placed to the pads. While Cerro Colorado



is a mature operation, we will discuss briefly later in the presentation the potential for extending the mine life.

# Slide 33

As you are aware, BHP Billiton announced earlier in the year it was considering expressions of interest for the sale of Tintaya. As these discussions are ongoing, it is not possible to comment further on the sale process other than to say that we expect a decision as to whether we proceed with the sale or keep the asset in the portfolio at the end of this financial year. I will now pass to Roger Higgins in Australia to cover the Australian operations.

## Slide 34

# Roger Higgins - BHP Billiton - VP and COO Australia, Base Metals

Thank you, Diego and welcome to everybody from the team members who are in Sydney here today.

## Slide 35

As Diego mentioned in the introduction we restructured the CSG management following the acquisition of Western Mining Corporation. We now have a regional office in Adelaide that has responsibility for the two Base Metals operations in Australia and for the OD expansion project. The office is located in the same building as BHP Billiton's Shared Services office in Adelaide which brings considerable synergies.

The new office replaced the former WMC office in Adelaide and a number of functions undertaken in the WMC Melbourne office. Other functions previously located in Melbourne for WMC have been relocated to the Olympic Dam mine site. As reported earlier and elsewhere the merger integration has gone smoothly and OD is now firmly a BHP Billiton site with a fully integrated site management team for the asset.

# Slide 36

On the Cannington asset briefly, the site has delivered outstanding performance. The first half EBIT of US\$190 million on the back of a silver price of only \$7.56 per ounce was extraordinary. Silver and zinc prices have continued strongly since then into the second half. We announced last week that we are reducing production at Cannington over the remainder of this calendar year in order to undertake an intensive ground support rehabilitation program. We have done this to ensure the safety of our employees and to best position this mine to continue its high throughput rates in the future. This will assist us in mitigating the impacts of declining headgrades over the remainder of the life of the Cannington asset.

## Slide 37

At Olympic Dam, the graphs here show the physical performance over the past five years, with the exception of the one graph which is for EBIT and here we show only the EBIT performance from when we took control in late financial year 2005 (so that result represents 5 June to 30 June 2005, i.e. less than one month). It is worth pointing out here, and obvious on the slide, that 2005 was an anomalous year in Olympic Dam's production history. In addition to high grades the mine was reprocessing various stockpiles which are now used up. The extent to which both copper and uranium oxide production peak up in 2005 is clear from these graphs.

Although the smelter at Olympic Dam has a nominal capacity of around 230,000 tonnes per year this depends on the composition of a concentrate in terms of its copper to sulphur ratio. When the copper:sulphur ratio decreases because of ore mineralogy, the smelter capacity also drops off.

## Slide 38

From an operational point of view at Olympic Dam, the mine is clearly the bottleneck. The recent years of the operation (prior to our acquisition) benefited from running down stocks throughout the value chain, including underground mine development. Although these stocks can be rebuilt, this takes time and it takes planning. Key constraints on the speed at which production can be built up include complex ventilation restrictions, accessing new mining blocks, and importantly, ensuring that we do not go for the



easy tonnes which may give a better economic outcome through being mined at a later date via an open pit mine.

We are working to realise the full potential of the existing mine and are attacking this in a holistic manner. We are addressing underground mine production planning and scheduling issues; we are utilising BHP Billiton's in-house expertise as well as that of external experts; we are restructuring and renewing the mine management team; and we are applying our proven Six Sigma methodologies. It is important to say that at this stage we do not see this as a matter of more equipment but rather better planning and better utilisation of the equipment that we have.

## Slide 39

The remainder of the site will be able to process more material when we can produce it from the mine. The processing plant generally performs well, although the uranium leach circuit needs significant maintenance modification to improve its recovery. This is an ongoing project that will take about one year more to complete. The smelter has the most excess capacity in the system and we have opportunistically bought in third party concentrates to keep the smelter running at full utilisation. We will continue to do this while it makes economic sense to do so. Note that we do have a planned smelter shutdown in September of this year.

Housing and camp accommodation has been reported in the Australian press as being a challenge for the Olympic Dam operation. We have already started to work to alleviate this issue with preparing and offering land for house construction and with 160 new camp rooms.

Although we don't have time to delve very far into the uranium business today, we wanted to make sure that everyone was aware that WMC had locked in price on uranium production at below US\$20 a pound for the majority of production until the financial year 2010.

# Slide 40

We'll now move onto major projects. Although the Olympic Dam expansion is not the most advanced project in the portfolio I will cover it first while I've got the floor here in Sydney and then pass back to Diego in London who will cover the projects in the Americas.

## Slide 41

The Olympic Dam resource is large enough to support a significant increase in production rate. Olympic Dam has a very large copper resource - in the top five globally - and can become a big gold mine. BHP Billiton recognised the potential for an expansion and the opportunity to meet the growing world demand for uranium. The graph shows that OD is a unique uranium resource. Uranium resources there represent around 40 per cent of the known world resources for uranium in the ground.

We are currently completing the pre-feasibility study on the potential expansion of this operation. A conventional, open-cut, concentrator, leaching and smelting configuration looks to be the preferred route at this stage, however, (as is customary in the pre-feasibility study stage of any project) we are evaluating this along with other options.

## Slide 42

We anticipate commissioning and ramp-up to full expanded production during the years 2013 to 2014. Some people not familiar with resource project development will be surprised as to why it takes so long to bring this into production. One answer, in particular in this case, is size. Although difficult to confirm absolutely, we believe this to be the largest pre-feasibility and feasibility study ever undertaken in the mining industry. One of the reasons is that the resource is so very large we are still attempting to find its limits. It is open in a number of directions and at depth with many existing holes still finishing in high grade ore. During this program we intend to drill five deep holes to a depth of 2.5 kilometres to better understand what happens at depth with this ore body.

Also, because we need to construct a dedicated smelter on site we need to have a very detailed understanding of the ore characteristics. We will not have the opportunity nor the luxury of blending concentrates with others from other sources as is the case with custom smelters.



# Slide 43

If the technology allows us, we are now going to make the presentation a little bit more interesting with a three dimensional representation of the resource as we currently understand it.

## [Run 3D animation]

We start with a surface photo and below the surface in yellow, you see the size and shape of copper mineralisation above a grade of 1 per cent. Surface facilities including the tailings dams and the plant can be seen as we rotate around the ore body.

We now introduce uranium ( $U_3 0_8$ ) in blue above a grade of 0.4 kilograms per tonne. As we start to see underneath the plane of the surface we will also see the threts which represent the current underground workings, the tunnels and stopes underground. We have only the uranium showing there now in the blue colour and we've dropped off the copper that was there initially. As we continue to rotate, we will add a 40 year open pit shell which you will see pop up here just now showing what the size of the open pit might be on the scale of this photograph. The next change is to add gold (gold colour) showing gold above 0.4 grams per tonne and the blue (the  $U_3 0_8$ ) that's now gone, that was the uranium showing and now we've just got gold.

Lastly, we will show combined mineralisation, it will come up here in a moment, as a copper equivalent grade above 0.7 per cent in that khaki colour and we'll add some vertical drill holes to show the density of drilling. As you can see, we get to use all of the rock in the mineralised zone below the overburden.

### [3D animation finishes]

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Coming back to a flat slide and looking at the same area this map of the ore deposit illustrates the March 2005 understanding of the mineralisation in the white line, the underground mine area in the northern arm, the density of geological drilling in the dots of various colours, an early possible open pit in red and potential footprint expansions and extensions in yellow. We have good potential to expand the footprint to both the east and the west of the southern mine area and at depth. We have 19 drilling rigs operating an active drilling program which will cover the areas outlined in yellow.

## Slide 45

Finally, this slide shows an open pit development. The yellow pre-strip is around 800 million tonnes, this is the amount of ore we need to move before we first uncover mineral, and is just over three times that which we have just recently completed for the Escondida Norte project in Chile. The blue shell is a 40 year open pit. What happens after 40 years we'll save to discuss at a later CSG briefing!

I'd like to hand back now to Diego who will cover the projects that we have in the Americas, thank you.

## **Diego Hernandez**

### Slide 46

Thank you Roger. It is important to recognise that we have seen pressure on capital projects. This is minor compared to the benefits we are receiving from bringing on the additional capacity in the current high price environment. For example, Escondida Norte, Sulphide Leach and Spence all had robust financial returns when approved using our long-term price assumptions. The early cash flows are obviously much stronger due to the higher copper price than that which we assumed at the time of the sanction.

#### Slide 47

Escondida Norte was completed last year on time and on budget before exchange rate variations. It has come into production since the last CSG briefing. As I mentioned earlier, the Norte pit gives amazing flexibility to Escondida operation. We continue to do work into systems around truck dispatch as we continue to optimise the site; we have the potential to understand the optimal location for each truck load



of ore based on GPS positioning and the aim is to dispatch the load to either of the two processing plants to leach operations or waste ore dumps.

# Slide 48

The Sulphide Leach project is on schedule to produce first metal in June this year. This will be the first major mining project to use desalinated water.

I will let you read the key statistics at your leisure but wanted to highlight the upside potential. The project was approved on the base case overall copper recovery of 37 per cent. We are taking great care in the construction of the leach dumps using a number of patented technologies. Our modelling and lab trials show that theoretically the recovery could be higher. Obviously the approved base case showed very robust returns. Any increase in recovery is essentially free. It will either increase the life of the leach operation or if large enough justify additional electrowinning capacity.

## Slide 49

Spence is our new greenfield project. We are pleased with the project performance to date and expecting it to commission on time at the end of the year. Being hidden in the BHP Billiton portfolio, Spence has probably not received the attention it would have received if owned by another company. At its full capacity of over 220,000 tonnes per year of copper (which it should reach in fiscal year '09), it would be one of the 20 largest copper mines in the world (based on 2005 production data). This mine is bigger than it looks. The ability to high-grade and front-end-load production also means that it will have excess plant capacity in the second half of its planned life. One potential source of material is the hypogene low grade material below the existing planned ultimate pit. Obviously over coming years we will complete the work to see if these materials can be economically treated.

## Slide 50

For the sake of completeness it is worth pointing out that we retain 45 per cent in the Resolution project that is managed by our joint venture partner, Rio Tinto. Although a lot of work still remains to be done to reach an investment decision point, there is no question that this is one of the largest high grade copper resources in the world. We look forward to understanding its potential.

## Slide 51

Occasionally people look at the BHP Billiton project bubble chart and ask what happens when those projects run out. It is important to understand that they are only projects that are well defined and in feasibility study. The Olympic Dam expansion and the Resolution project are not yet on that chart. We continue to work hard to find the next generation of projects. One area is brownfields exploration which because of existing infrastructure usually has lower hurdles and attractive returns. Escondida is still prime exploration ground. We have recommenced a brownfields program on site. At \$8 million annually, it is interesting to think this is actually more than many companies spend on their entire exploration budget.

Finally, from what we have learned in our technology labs and are putting to use at Escondida, we believe we have the potential to economically treat the large, low grade hypogene resource at Cerro Colorado. We will complete a scoping study over the next year.

## Slide 52

Finally, when looking for the next Escondida, you need to look in the most prospective areas. BHP Billiton is actively exploring in Mongolia, Kazakhstan and the Democratic Republic of Congo (DRC), the areas we consider have the highest potential. We also undertake significant exploration in the regions in which we currently operate and know well.

# Slide 53

The slide shows our significant landholding in the DRC. This is obviously a long term project, the core tray from our early drilling shows that finding copper is not the challenge. The challenge is finding it in sufficient quantities and in a location that can be economically mined and recovered. Projects like this take time and commitment. We hope to have some positive results to share with you at a future CSG briefing.



### Slide 54

I would like to conclude from where we started. BHP Billiton Base Metals has delivered production growth at the right time. It is the only major copper company bringing on major new copper capacity in 2006. We are continuing to develop long term growth options and have a portfolio that can perform in a lower price environment, as well as delivering exceptional returns in a high price environment.

May I take this opportunity to thank you and hand over to you for questions. We will start with questions here, in London, and then move to Sydney and then to telephone questions.

### **Questions and Answers**

**Question:** A question for John Crofts. You outlined a situation that's clearly quite different now in terms of the balance of power between smelters and producers. Does that raise the possibility of you engaging in tolling contracts?

**John Crofts:** We previously mentioned that we have engaged in some physical tolling contracts. In essence, a concentrate sales contract is a financial toll. We did put in place some contracts with smelters whereby we took metal back, and that is still of potential interest to us, particularly in areas where it's more difficult logistically to get to with our own equity production.

**Question:** Clearly BHP Billiton has maintained a no-hedging policy, which has been, I guess, the right thing to do over the past few years. Given the way not only the nearby prices in metals have moved, but also the way the whole forward curves have shifted up in a way which is really unprecedented, I think, is there any potential for a change in that policy, or will that remain the case?

**John Crofts:** I think Chip Goodyear in the half-year results announcement reaffirmed the commitment to the portfolio model at a corporation level. You're correct in your assessment in terms of unprecedented territory that we're currently in, but at this point our philosophy remains intact on the portfolio model.

**Question:** You mentioned the use of desalination at Escondida. Obviously there's not only the capital cost of building a desalination plant, there's a significant cost in operating the plant and pumping water up to the height of the mine locations. Are there any figures or indications you can give on what the operating cost impact is of using desalination plants?

**Diego Hernandez:** I will give general figures. The mines in northern Chile that have a source of water nearby can pump water for \$0.6/0.7 per cubic metre, and the mines that are at very high altitude and use potentially desalinated water could get that for \$1.50/2.00. This is a big difference. Only 20% of the total water consumption of Escondida is from desalinated water, and of course we have several aquifers that we need to manage with a long term view. It's not our intention to switch to desalinated water for 100%, but northern Chile water now is scarce, and of course it makes a difference if you have access to cheap water or not in the future.

**Question:** With Escondida, you've done quite a lot of new projects over the last couple of years. If you don't do any more new projects from here, can you tell us when your production will peak, and at what level, and what decline rates are likely to be beyond there? And also, you did have the Coarse Particle Recovery project as a potential project at one stage, and that seems to have disappeared. Can you just tell us what happened to that?

**Diego Hernandez:** I will start with the Coarse Particle Recovery project. Earlier this year we decided to cancel both the Los Colorados and Laguna Seca stages of the Coarse Particle Recovery project. We have been optimising, during the last 12 months, both concentrators and we have improved metal recovery - higher concentrate grade and increased throughput - and that combined with a new mine operating plan for the two Escondida Mines, have made the original CPR project marginal I would say.



We were working on the project at the same time we were optimising the operations and this optimisation was eating the improvement that CPR could give. So we have decided to cancel the project and start looking at a bottlenecking project for both plants, and that will take some time.

The other question. Escondida peak production... we, as you know, we are now completing the Sulphide Leach Project, that should start to be commissioned now and in the second half of the year. With that, Escondida should peak to around 1.4 million tonnes by about 2008, and the challenge is to keep that level of production. That production could, of course, be affected by the recovery on the Sulphide Leach project. If the recovery is what we expect, that's the number, if the recovery is higher that gives us more room to keep that level of production longer. Escondida has a lot of potential to keep that level of production for a longer period than initially expected, perhaps seven years at that level. We hope that our brownfield exploration program will give some results. We are doing exploration at the known bodies, we are doing exploration in some known satellite ore bodies and also we are doing greenfield exploration on that area. Then I think Escondida has still many years to go at that level.

**Question:** There's been a lot of speculation on Olympic Dam. I understand you're still going through the feasibility process, but just about the type of scale we could see ultimately, given the size of the resource. I notice from the Western Mining target statement's independent expert reports, they commented that around a 500,000t planned asset, you'd be moving sort of an equivalent amount of dirt as what we see at Escondida today. Does that mean that that's the sort of capped level that we could ever see at Olympic Dam, the sort of 500,000t of copper production, or do you see, in this early stage, there is scope to go even higher than that, and obviously have an incredibly large mine? So that would be my first question. Just the second question is related to Spence. Some time back, the comment on operating costs was that we should see costs consistent with what we've seen at Cerro Colorado. A lot's changed in the operating cost environment. I'm interested to know how you see that stacking up today for Spence, and what sort of numbers we should be looking at going forward.

**Diego Hernandez:** Olympic Dam is a huge ore body and we are doing a lot of exploration to switch from inferred resources to proven reserves, in a way that we can go ahead with a firm feasibility study data. We should complete the pre-feasibility study next year, and then go for the feasibility study that will take another year. The results up to now confirm what we expected and a little more, as Roger showed. We are looking at different alternatives, but the base case shouldn't be too different to the way that you mentioned, probably around 600,000t of copper per year. But still, we haven't decided. Depending on copper demand and uranium demand and so on in the future, eventually Olympic Dam can have expansion, because it's a huge ore body, but that's in probably 15 years' time or so. For the cost, of course, we are having a lot of cost pressures everywhere, and that's as a result, among other things, of the good price of commodities. In some countries, Australia and Chile and Peru, having high commodity prices strengthens the local currency and of course that increases our local costs. We believe that a big part of that cost increase is related to the high price of commodities. We are always monitoring our costs and our conclusion is that the costs that we can control we are keeping to similar levels as before. Then we don't see a big worry about our cash cost increase, because as I said a big amount of that is related to copper price.

**Question:** A follow-up question on Olympic Dam – do you anticipate actually having continued underground operations for a period of time whilst you're ramping up the open pit and then after that as well? A second question, for John probably. You have a lot of very impressive copper projects. How much copper do you think is needed in addition to bring on every year post-2010, and will you plan your projects coincident with market direction and market demand?

Diego Hernandez: Well the question on Olympic Dam I will let Roger answer. Roger?

**Roger Higgins:** The existing open pit is operating at about 10 million tonnes per year – its name plate capacity. And we would continue to plan to expect to operate that through a significant ramp-up of the open pit, possibly seven or eight, nine years. We'll work that out as of course part of the pre-feasibility



and feasibility that we'll do over the next year or so, but we would expect to keep running it for some time, because there's still a lot of ore in that northern arm.

**Question:** So you would expect to have 600,000 tonnes out of the open pit, plus 200 or 150 out of the underground?

Roger Higgins: No, the numbers we're quoting are totals.

### Diego Hernandez: John?

**John Crofts:** In terms of the post-2010 period, I think there's really two factors that we try and consider. One is the growth in the market; currently it's about a 17.5 million tonne global market for copper, and for the balance of this decade we would think that 3.5-4% p.a. growth levels look realistic. Forecasting it beyond that is difficult. But one of the other factors that we try and analyse too is the grade decline in terms of existing production, and that's an important factor post-2010 at a number of the world's major mines. In terms of the role of the marketing group, to the extent that we can analyse the view looking forward, and feed that back into the CSG, yes, that's part of our strategy to try and determine when projects are most optimally timed.

**Question:** Diego, could you give us some insight into what's happening with power costs in Latin America in general, and particularly with what's happened with gas supply there recently? Will that impact on your business, and has that changed any recent contracts? And how much or how significant has that been?

**Diego Hernandez:** As you probably know, Chile has two power grids. We will talk about the northern power grid, where our operations are. There is an excess capacity installed in terms of power generation on the grid, but part is coal-fired and part is gas, and a very small amount of diesel plants. The total installed capacity is around twice the demand, but the gas power plants are fed by gas coming from Argentina to gas pipelines. On that northern grid, around 90% of total consumption is mining.

When Argentina was in trouble with their gas consumption, they froze the gas prices internally in Argentina in pesos. Then there was a lack of investment there and an increase in consumption, then Argentina started to reduce the contracted amounts that they had with the Chilean consumers. As a result of that, we are seeing gas restrictions on the grid, but for the time being that gas restriction has had little effect on our costs. Until now only during 13 hours has the grid had to put in place some gas power plants operating with diesel. So with a gas restriction of around 50%, the system can run without problems. Of course, if the gas restriction goes to 100%, then some of the gas plants need to run with diesel, and that requires special logistics and of course will increase the power costs. We don't expect to have too many problems this calendar year, and some of the mining companies are involved in the bidding process for new coal-fired power plant and power, and that will take probably around three years. Then by 2010, 2009/2010, probably we will see new coal-fired power plants on the system. I think that that will not affect copper production. It could affect eventually some of the power costs during certain periods, for a certain amount, of course not total power on the grid, just 5-10% of power generation.

**Question:** I've got two questions. Firstly, you talk about Olympic Dam being fully-integrated, but as you highlighted, the safety performance is a lot worse than the rest of the group. Do you think there is an impediment to getting it down to group levels, and when you do are you expecting an equivalent type operation efficiency improvement? And the second question is, your growth in production or your production plan over the next two years, has it been constrained by your ability to get mining supplies?

Diego Hernandez: Roger, can you answer those questions?

**Roger Higgins:** The comment about Olympic Dam being a fully-integrated site means that we have Olympic Dam operating with our systems, our safety systems as well as financial operating systems, using our networks for information exchange and expertise and so on. I would like to comment on the note that the safety performance is not as good as the rest of the group. It is about as good as equivalent



underground mining operations in Australia and elsewhere, and traditionally underground operations do have higher incident rates and higher statistic numbers than open pit operations. Olympic Dam is not significantly different in this regard for example, from Cannington. That's not to say we're satisfied with it. We would love to see Olympic Dam as a benchmark safety operation. We'd love to see it achieve total recordable frequency rates that are comparable with open pit mines. It'd be a great achievement and we're working very hard towards it. There is, of course, a relationship with productivity; a safe mine is a productive mine, so whenever we can improve safety, it's good for all reasons. It's principally good because we're not hurting our employees, and we're sending them home in good condition, but of course a safe mine, a well-run mine that is achieving benchmark safety levels, will be a productive mine as well, although we don't see that as being the driver on our safety performance.

The second question in relation to the production plan, I'm not quite sure if I understood it. If it's about supplies to the mining operation from outside, that's not a constraint on us. If we're talking about supplies from the mine to the plant, it is correct to say that the processing plant and the smelter can operate at higher levels than the mine can deliver. And as we mentioned earlier, one of the ways that we've taken to address that is to buy in third party concentrates where that's appropriate, in order to keep the smelter operating as close to as fully-utilised as we can. The other things we're doing are to employ our expertise internally and externally. Six-Sigma is this improvement methodology; to continue to optimise the operation underground, to get it to planning further out than they are at the moment, so that we can improve production from underground to feed the facilities that are on the surface.

**Question:** Thanks for that. The question on supply constraint was actually for the group as a whole, and in particular I was thinking of South America and getting supplies to the mines, of things like explosives, tyres, trucks, those sorts of things.

**Diego Hernandez:** No, in general we have supplies under control. Of course, there is a shortage of tyres worldwide. We are well-covered and we don't expect to have disruptions because of lack of tyres. All the other supplies are normal.

**Question:** Just a couple of questions perhaps for John. First you mentioned, or you indicated, high prices having some impact at the customer level. Can you give us some insight in terms of what customers, and what impact?

The second is in terms of substitution. I guess we're getting increasingly asked about the impact of high copper prices on substitution. What does your analysis tell us in terms of the elasticity there and what sort of impact you're expecting at these sort of prices?

**John Crofts:** Yes, the first part of the question, clearly at current copper prices, there is a significant working capital imposition on the fabricators and the custom smelters in terms of purchases. That I think is an issue in the industry at the moment, stretching credit lines for fabricators. And then depending on which particular aspect of the business, or sector of the business they're in, their ability to pass that on down the line varies, and that really links into the second part of your question, which is the substitution impact.

Clearly copper benefits from the fact, as I think I mentioned in my commentary, that in the majority of its applications demand is fairly price inelastic. However there are applications, particularly for example in the plumbing tube sector, where substitution is an issue. I think what we're seeing is an acceleration in the level of substitution that was already underway prior to the price rally.

In the principal electrical applications, demand remains robust and there is no evidence to us at least that substitution in those applications is a threat.

**Question:** Another question in terms of price participation and the stance you're going to take in upcoming negotiations. I guess when you look at the chart it isn't particularly evident that over the course of that chart, under contract terms, you've been hard done by. Considering what the gap is at the moment relative to spot. But do you have any fear that if you go on with this sort of stance, there might be some sort of kickback next time, or push back from the customers, I guess particularly amongst the Japanese? I



guess having learned a lesson from the iron ore negotiations a couple of years ago, is this the right stance to be taking?

**John Crofts:** I can't comment on the iron ore lesson, whether there was one learnt or not. In the case of copper concentrates, quite clearly the objective of my team is to achieve the lowest possible realisation cost, on an ongoing basis. I stress the sustainability aspect of that. As you would have seen from the presentations we've got long life assets; we will be in the business for a long time. We will be in the concentrate market for a long time so we evaluate very carefully in terms of our commercial stance in the market place what possible implications there may be of something like pursuing a rational outcome on the price participation aspect.

So we have no concerns about being able to place our concentrate on an ongoing basis.

**Question:** I was just wondering if you could give us an indication of how much of the market is up for substitution when you talk about the plumbing side. Is that a big issue or not? And then you've gone back into the Congo now after having sold out a number of years ago, out of Tenke Fungurume. Obviously, if I look at your portfolio and I look at everyone else's, you're having to go into a lot higher risk areas now for the copper. I was wondering how you approach that now, can you get the same returns that you've been used to on the projects in probably less risky areas, and how do you tackle that from a long term price perspective as well now? Is that going to have any impact, do you think, on the price going forward?

Diego Hernandez: John, you'll start with this?

**John Crofts:** I'll take the first part of that then, on the substitution. It's important to note in terms of the plumbing tube threat that it varies somewhat by location because really the issue is a total installed cost so there's a labour component that also exacerbates the substitution threat on plumbing tube because copper tubing can be more time consuming to install and therefore more expensive than some of the competing materials. In terms of the overall share of plumbing tube in that 17.5 million tonne total market, it's not a huge component - probably in the order of 10%, 12% and not all of that would be under threat. We are certainly seeing here in Western Europe quite a significant impact of substitution, but as I said part of that is related to the installation cost.

**Diego Hernandez:** On the exploration targets, we are back in DRC, and as I said we are also present in Kazakhstan and Mongolia. With this price increase, you have seen that the response from the producer has been slower than 10 or 15 years ago and the reason is that we have less ore bodies in the portfolio to be developed. In the 1990s we could have almost every new year a new project coming, being commissioned and now this portfolio is empty.

The way we see it is that we still can develop ore bodies in the traditional countries where we are having high copper production now, through not so many greenfields and not as competitive as what we had 10 or 15 years ago.

And at the same time, or you have some brownfield exploration, and through brownfield expansions you can try to keep total production or increase slightly copper production while the grade is dropping. Then probably in countries like Chile, Chile should keep its market share at best from now until say 2010 but increased market share now it's unlikely. Those existing mines and those countries will continue to increase production. But when you look long term, of course, the new Escondida should come from those countries with higher country risk and we want to be present there and that's why we are doing exploration. Trying to simplify, we have two kinds of new developments. One low grade, in low country risk countries and others high grade in high country risk countries. Both will need average copper prices better than we had in the last 10 years.

Our main aim is to be present where the new corporate developments will be and that's why we are starting exploration of those countries.

**Question:** I noticed a significant amount of comment there on costs pressures but also capital cost pressures yet it appears to me that the budgets remain as previously stated. I guess my question is does



that mean we should take it that all of your projects are running on budget including contingencies or do you believe it is still prudent for us to assume some capital cost overruns on those projects, it's just a matter that they're still yet to be completed and it's under review?

**Diego Hernandez:** We have three projects in Chile in execution. Escondida Norte has been completed and Spence and Sulphide Leach are both well advanced. Escondida Norte is a good example. We completed the project on budget except foreign exchange variations, which are limited. The budget was \$400 million. The final cost is around \$390 before foreign exchange rate variation and the cost in dollars including exchange rate is expected to be around \$437m. This is the kind of range that we could see in our other two projects. Roughly we'll say that yes the projects are on budget with very small variations or reasonable variations due to exchange rate.

**Question:** Two questions, the first one's zinc. Obviously that market's very hot at the moment. Just on Antamina, I saw the grades were off recently. Can you give us some more colour on expansion opportunities there and also maybe the short-term outlook for the production profile there? Secondly, labour contracts – can you give us a view, or if you're in the position to, what's the timeframe for your contracts particularly in South America for labour and what are the renewal times? What's the term for those contracts?

**Diego Hernandez:** I will start with the second question and you take the first one John? On the second question, we are currently going through a period of negotiations with the trade unions. We have one in Antamina now in the middle of this year – in a couple of months. Then in August we have the negotiation of Escondida. Then for Cerro Colorado we have the negotiation in January next year. John?

**John Crofts:** Yes, just on the Antamina zinc question, we're currently in the process of reviewing the Antamina mine plan. The base case mine plan would see an increase in zinc production and a fall in copper production over the 2007/2008 period and there's currently work under way to assess if that can be avoided. In terms of expansion opportunity at Antamina there's nothing currently contemplated.

**Question:** I have a question in relation to technology and technology change. The Sulphide Leach project that you have, if it is very successful, I'm wondering if it will unleash other miners to be involved to go down that path. I note that in the 1990s the SXEW of basically oxide resources led to a large increase in copper supply. I'm wondering if you're anticipating that your project would involve the industry and we'll see a large increase in such supply in the next decade?

**Diego Hernandez:** Sulphide Leach will be successful. We have tested it with demonstration pile of 300,000 tonnes of run of mine product. This technology is not like SXEW technology that is applicable to any leaching operations. To leach hypogene material or to bio-leach some primary or secondary sulphides depends on the quality of each ore body and the technology is not the same and not all ore bodies are exactly the same with the same mineralogy.

We are working in Escondida using some bio-leaching for primary ore that contains also high pyrite and there we are looking at a different process. We will start testing now in Cerro Colorado where the hypogene is also primary sulphides but with a different mineralogy and then we are testing chemical leaching.

I think that you will see some more primary ore leaching over on the next 10 years but it will not be as quick as we saw with SXEW.

Thank you very much for attending this briefing and thank you for the questions.

[ENDS]