

The tungsten “brain trust” on the Almonty Los Santos mine tour

In the first week of November, we went to visit the Los Santos mine, one of the largest tungsten reserves in Spain, with a view to seeing current operations and discussing the other activities of the company in Spain, Australia and South Korea. The CEO of Almonty Industries (TSXV:AII), Lewis Black was on site at the time, as were staff that had worked at or visited the company’s other operations around the globe. Interestingly the staff are composed of a strong component of Portuguese mine staff, many of whom are known to the company management since the days when the Almonty team ran Primary Mining, which owned the Panasquiera Tungsten mine in Portugal.



The Los Santos scheelite deposit is in the province of Salamanca in western Spain. It is 180 km west of Madrid, 50 km south of the city of Salamanca. The drive to the mine from Salamanca is an easy one over a double carriageway most of the way through flat to lightly rolling landscape. The area around the actual mine is low hills with a mix of small holdings. The cultivation of pigs is the major industry in the region as the “capital of Jamon Iberico” is a small town nearby where the pigs fed on acorns produce this famous and costly product.

Los Santos (pictured below) is a large village of around 2,000 people. The mine has become quite an important feature of the local economy over the nine years it has been operating. With around 65 contract staff and tens of direct employees, the mine has a significant trickledown effect in such a small community. It is also worth remembering that unemployment in Spain is 25% at this time and has been even higher since 2008

and that in isolated rural areas it can be significantly higher. The company has strong relations with local mayors and councils. It has even established its company “canteen” in the town, rather than out at the minesite. This has effectively doubled the number of eating places in the town!



The mine is one kilometre east of the town of Los Santos and there is a newly paved road to the mine gate.

The Los Santos Mine

The Los Santos scheelite deposit was originally investigated by Billiton starting in 1979. Work undertaken included trenching and drilling. In one of the zones, Los Santos Sur, an 825m underground ramp was developed, along with level development at the 950m elevation, which provided bulk samples as well as underground drilling access. The ramp is still visible but has largely been consumed by the pit construction.



Billiton went as far as to carry out a pre-feasibility study of the prospect. By 1985, however, with a prevailing tungsten price of US\$81/mtu, the project was not considered viable.

The project passed to the ownership of the ASX-listed company, Heemskirk. Under this new management the mine build began in 2008 and it was commissioned in July 2010.



The map above shows the minesite. Thus far one of the pits has been fully mined out and refilled. The blue represents the pits currently in production or planned. The two pits to the right (west) that nearly touch are intended to be combined into a sort of “super-pit” (well, not by Kalgoorlie standards) to exploit the mineralisation in the pit wall between the two existing pits.

Mining

The open pit operations are conventional drill and blast operations. The aerial view below shows the main pit with the green structure to the left being the processing plant and the Los Santos South (Main) pit being the bright white patch just right of centre. Towards the town at the top of the photo is a smaller Las Cortinas pit that has been developed over the last few years.



The production mining & drilling operations currently employ 65 people and this task is undertaken by a contractor. All of the other 68 employees on site work directly for Daytal (Almonty's Spanish subsidiary).

For the moment plans for going underground have been discounted (while the price for APT remains where it is). In some ways the need for that strategy has been reduced by making the pits deeper and via the mini "super-pit" implementation.

Processing

The plant is located immediately to the south of the Los Santos Sur pit close to existing mine workings, the main waste dump and other infrastructure. The plant is now processing 500k tpa and is primarily based on gravimetric separation, aimed at recovering a high grade scheelite concentrate, so as to provide a concentrate containing greater than 68% W03.



The image above is our analyst with the plant management inside the processing facility with the rod mill shown below.

Below can be seen scheelite concentrate running off one of the shaking tables under an ultra-violet lamp.



The process plant in the following picture.



Production during the three months ended June 30, 2015 rose 18.75% when compared to the three months ended March 31, 2015. The main plant is currently undergoing a meaningful expansion to debottleneck operations and boost concentrate grade and recoveries. This expansion has been rather rapid only beginning a few weeks ago and expected to be finished before the end of November. The extension is being added to the end of the main building closest to us in the photograph above (which was taken before work began). Below can be seen the frame that was up last week. Cladding is probably already finished by now.



The latest additions will double throughput from the finishing circuit and remove what the company terms the “last bottleneck” in its process. It is expected that the extra pieces of kit to be housed in the extension will hike recoveries from 65% to 69% and boost the W03 content from 63% to 67%. Output will rise from 5 tonnes per day to $5\frac{3}{4}$ tpd (therefore a 15% increase). The additional equipment has enhanced the ability to reprocess the tailings stockpiles.

This added production will come at no increase in staff costs.

Tailings Reprocessing

On another score the company has been considering the issue of tailings recovery as specific areas where tailings have been deposited still contain economic W03 grades. The amount in the dumps is a not insubstantial amount at half the level of the current reserve in the ground.



Almonty tested reprocessing the tailings stockpile by blending tailings with fresh ore during Q1 2014. Bulk testing of 100% tailings ore was run through the plant at Los Santos without any additional modifications. Recovery rates achieved exceeded expectations and management believes that target recovery rates for tailings reprocessing will be achieved when the tailings stockpiles are eventually reprocessed.

Conclusion

Los Santos is clearly the milch-cow that feeds the rest of the Almonty empire. With its reserve, its stockpiles, its tailings to rework and the planned mini- "super-pit", it should have another four years mine-life at least. Wolfram Camp's turnaround has essentially been funded by Los Santos as has the Valtreixal mine plan. Planning is already advanced for Valtreixal to pick up the slack and use equipment and personnel from Los Santos as it becomes available. Then there is the Sangdong mine which really awaits a price turnaround to fire up its motors.

Almonty's management team, last decade, managed to get one Tungsten producer (Primary Metals) off the ground and now they are on their second go-around. This time they are not building to sell it but rather putting together a long-term producer and creating that hitherto elusive investment opportunity, a geographically diversified multi-mine Tungsten player. As they say, seeing is believing and certainly the mine trip brought home that Almonty is a tightly run operation with somewhat of a dream team in having corralled a goodly proportion of the Western World's Tungsten "brain's trust" into its employee ranks.

Almonty – Cornering the Tungsten Market

It is rare to find a Tungsten miner with more than one project let alone four on the go at one time. As I noted a few weeks back the quantum leap for Almonty (TSXV: AII) was its move on Woulfe Mining to bring the Sangdong project into its portfolio. This was on top of the company's existing two projects in Spain and it's rapidly advancing Wolfram Camp mine in Australia. However it is useful to go back and look at the company's original projects in Spain, one of which is the cash-generator for the new outreach.

The Los Santos Mine

The Los Santos scheelite deposit is in the province of Salamanca in western Spain and was originally investigated by Billiton starting in 1979. It is 180 km west of Madrid, 50 km south of the city of Salamanca and 1 km east of the town of Los Santos.



After 1980, Billiton completed an exploration campaign which included 249 trenches and 231 diamond drillholes. In addition in one of the zones, Los Santos Sur, an 825m underground ramp was developed, along with level development at the 950m elevation, which provided bulk samples as well as underground drilling access. Billiton went as far as to carry out a pre-feasibility study of the prospect. By 1985, however, with a prevailing tungsten price of US\$81/mtu, the project was not considered viable.

Ownership passed into the hands of Sociedad de Investigacion y Exploracion Minera de Castilla Leon S.A (SIEMCALSA), a publicly-owned company of mining and geological consultants based in Salamanca. In 2007 the deposit was purchased by

Daytal, which at the time was 100% owned by ASX-listed Heemskirk Consolidated (HSM.ax). The mine was originally opened in 2008 and commissioned in July 2010.

The Los Santos Project was acquired by Almonty in September 2011 from Heemskirk and represented the QT for the listing of Almonty on the TSX-V.

Geology

Under Billiton, exploration was focused on skarn mineralisation on the margin between the Bejar granodiorite and the surrounding Cambrian metasediments. The discovery of the Los Santos tungsten bearing skarns was the result of regional geological reconnaissance and the targeted night-time use of ultra-violet lamps to disclose the presence of the tungsten mineral, scheelite (CaWO_4) which fluoresces under ultra violet light.

A period of intense exploration activity followed, including diamond drilling and some preliminary engineering including the aforementioned ramp.

The tungsten occurs mainly as scheelite within massive pyroxene skarn. The skarn bodies are generally narrow steeply dipping structures. The deposit is made up of a number of discrete zones, six of which have been modelled for the current resource estimate. The strike length varies for each zone, but zone dips are fairly uniform across the deposit, varying between 60° to 90° . Within each zone, the skarn mineralisation is located within a number of individual beds, separated by barren lithologies. The major skarn beds vary between 2m and 20m in width; there are, however, numerous thinner bands measuring tens of centimetres.

The latest resource dates from June 2013:



Two years of production since publication would have depleted this resource but exploration is on-going to replace reserves.

Mining

Almonty is a strong believer in contract mining and employs this method at Los Santos to maximize its flexibility. The open pit operations are conventional drill and blast operations, based on mining 10m benches in waste, and 5m benches in ore, with 0.5m of sub-drilling.

The aerial view below shows the main pit with the green structure to the left being the processing plant and the Los Santos South (Main) pit being the bright white patch just right of centre. Towards the town at the top of the photo is a smaller Las Cortinas pit that has been developed over the last few years.



Future Expansion

Exploration in recent times has been directed towards the lower parts of the deposit as the company believes that underground development has the potential to materially extend mine life.

In an area to the south of the Los Santos Sur pit, some small skarn extensions were blocked out for underground mining, resulting in approximately 94,000 tonnes of underground ore. It is felt that it should be possible to access these underground stopes through adit access from the pit, as well as by extension of the existing underground development. In this blocking out process, a cut-off grade of 0.3% WO_3 was used. The underground mining cost of \$30.42 per tonne was derived from estimates from local Spanish mining contractors. The blocking out was based on a cut-and-fill mining method, with 5m lifts.



Based on the current underground resource, a 15,000 tpm operation has been evaluated by management. This would involve a 15 metre crown pillar remaining between the open pit and the underground development. This would provide an additional four-year mine life.

Exploration drilling results demonstrate that substantial potential exists below delineated resources

The current processing optimization plan consists of:

- Increase production to >90,000 MTU per annum
- Plant process refinement expected to result in a 40% recovery improvement and increased throughput
- Operating costs, excluding waste rock movement, to be reduced and sustained between US\$125-135/MTU from ~US\$190/MTU at acquisition (achieved US\$98 for the six months ended March 31, 2015) –
- Improved strip ratio, improved plant recoveries and streamlining personnel costs, improved throughput
- Further extend mine life to 10+ years (from four years at acquisition) – Drilling targets identified to further delineate the resource and explore newly discovered structures

On another score the company has been considering the issue of tailings recovery. With the recent improvements in mill recovery, as well as the further improvements with the planned scheelite flotation facilities, an overall mill recovery of 70% should be achieved. This has meant that specific areas where tailings have been deposited still contain economic WO_3 grades. The resource estimate from 2013 projected that there was 3,105 tonnes of *in situ* WO_3 grading at 0.16% recoverable In the tailings.

The Second String – Valtreixal

This property came into Almonty's hands in March 2013 when it entered into an option agreement with SIEMCALSA (the same parties that vended Los Santos to Heemskirk) to acquire a 51% interest in, and be the project operator of, for total consideration of Euro 1.4 million. This deal was later rejigged and in January of this year it announced that it had made the third installment payment of €300,000 (instalment payments to that date totalled €700,000). Almonty now owns a 25% interest in the project and has an option to acquire the remaining 75% ownership interest through €1,700,000 in additional installment payments over the next 18 months.

The Valtreixal Sn-WO₃ project is located in the northwestern Spanish province of Galicia, approximately 250km from the Los Santos mine. It is quite common that tin occurs alongside Tungsten in Spanish Tungsten deposits. This site is a past producer with extensive underground workings.

A historical resource estimate (not NI43-101 compliant) for the Valtreixal property of 8.65 million tonnes of mineralization at a grade of 0.23% Sn+WO₃ (0.10% Sn + WO₃ cut-off). This was prepared on the basis of the applicable mineral resource standards in Spain.

Almonty has been carrying out additional exploration activities on the project and produced a new resource estimate in the second half of last year, which can be seen below.

Valtreixal – NI 43-101 Mineral Reserves/Resources (as at Aug 31, 2014)

	Tonnes (000's)	Sn (%)	WO₃ (%)	WO₃ Equivalent (%)
Inferred	7,410	0.12	0.20	0.27

The company now classifies the project as being in Pre-Feasibility mode.

Conclusion

There are two themes to the Almonty Industries Inc. (TSXV: AII) story that catch the imagination. The first is the obvious one, the long overdue creation of a consolidator in the fragmented Tungsten space. The second though is the reestablishment of Spain on the mining map. Once the leading mining nation in Western Europe, the country fell off the radar when it joined the EU and the good times rolled. Now that the EU gravy train has been derailed its back to basics and the fundamental truth that mining makes jobs for isolated communities has come back to the fore.

One thing investors should also keep in the back of their mind is that the Barruecopardo Tungsten mine a few hundred kilometres south on the Portuguese side of the border is apparently now back in play as the major Japanese trading house, Sojitz, has struggled to get into the mining mindset. The irony of Almonty buying this asset is that the management team at Almonty has sold the asset, last decade, to Sojitz for an extraordinary price. Picking this up would be a major coup.

So Los Santos is now the cash generator that is funding the further expansion of the Almonty empire. While Valtreixal is on the horizon as a future project the company is rightly pushing for geographical diversification in the short term with Australia and South Korea next off the blocks with Valtreixal keep up its sleeve as the follow-on when Los Santos starts to wind down. There is currently nothing we can fault in the Almonty tungsten mine consolidation strategy.