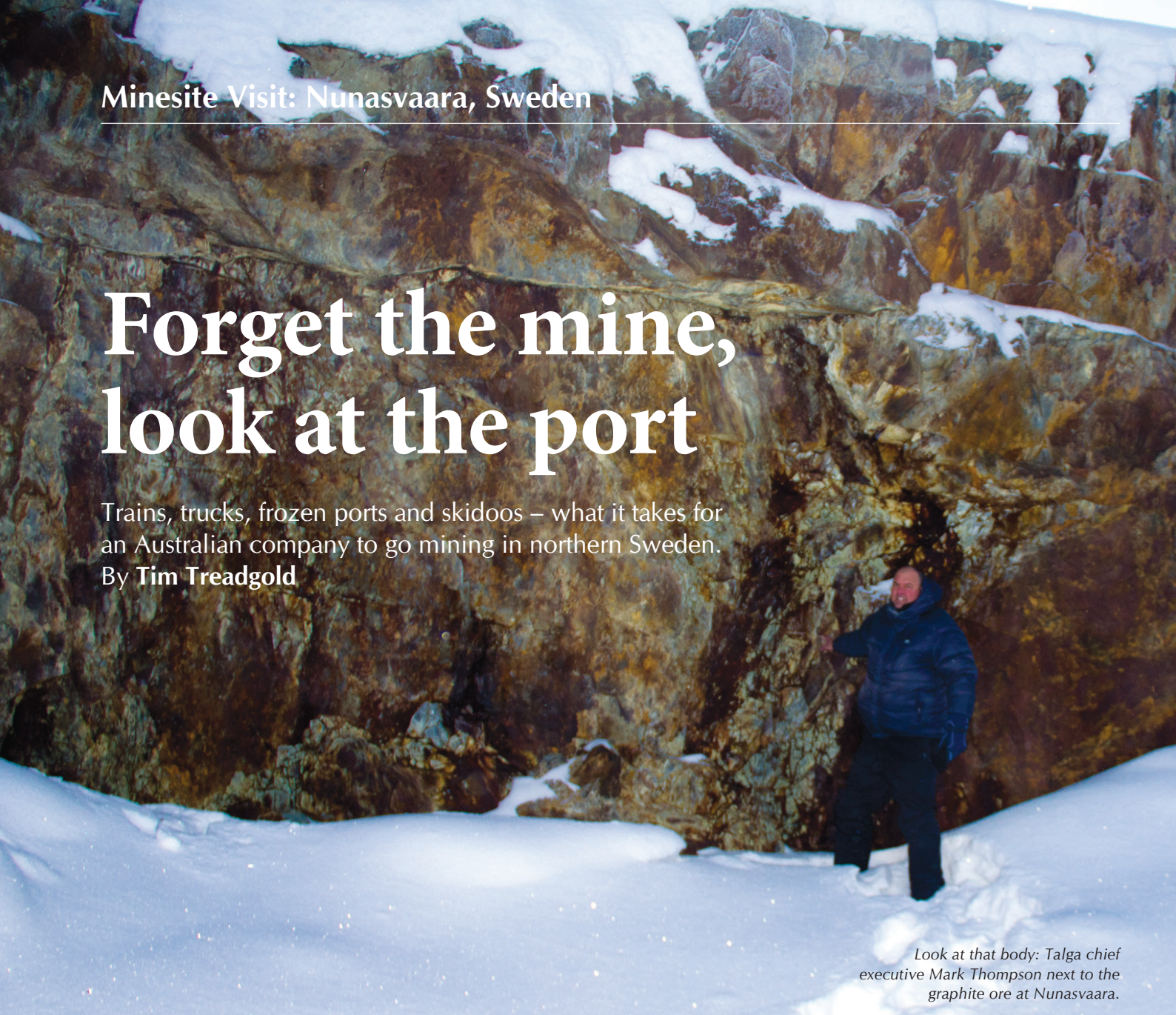


# Forget the mine, look at the port

Trains, trucks, frozen ports and skidoos – what it takes for an Australian company to go mining in northern Sweden.  
By Tim Treadgold



Look at that body: Talga chief executive Mark Thompson next to the graphite ore at Nunasvaara.

“No port, no project” is a principle of bulk-commodity mining that an emerging Australian explorer has taken to heart in a country (and climate) that is far from home.

Talga Resources, a junior vying for a position in the race to be one of the next generation of graphite miners, has been investing more management time in securing port, rail and road access for its assets in northern Sweden than it has on the resource in the ground.

There are three reasons for the emphasis on infrastructure:

- Talga already has its foot on a world-class graphite resource;
- Gaining access to rail, road and power supplies is an essential step for all bulk commodities; and
- Port access is even more important.

Other explorers with stranded deposits of bulk commodities, such as iron ore and coal, could learn valuable lessons from Talga's approach to converting its Nunasvaara

graphite resource from the status of a remote ore deposit to a potentially valuable business.

Demonstrating access to critically important infrastructure was the primary reason a recent trip to northern Sweden took place at the worst time of the year and began at the port rather than the orebody.

**“If we don't have port access, we will not have a graphite project.”**

– Mark Thompson

Initially, members of the small tour group comprising London-based analysts and me, as a representative of *Australia's Mining Monthly*, wondered why the expedition started in the port city of Lulea rather than the orebody which is close to Sweden's iron ore mining centre of Kiruna.

The answer, which is the same for mining

projects in Australia, is that bulk mining often has little to do with the orebody and everything to do with the specialised world of transport economics.

At Lulea, Talga has secured something that most of its rivals in the graphite race lack – a first-phase agreement with the local port authority ensuring space to handle annually up to 80,000 tonnes of graphite concentrate, or more advanced products.

The non-binding memorandum of understanding is an act of good faith on the part of the port's management keen to expand what is already the biggest bulk goods port in Sweden, handling part of Kiruna's iron ore exports which arrive by train and are loaded in the same way as at any Australian iron ore port, with one important difference – the Baltic Sea around the port freezes in winter.

Icebreakers routinely cut a path for ore carriers to use the port all year round and while workers in Australia's bulk mineral ports in Western Australia and Queensland might dream of an ice-filled harbour, it



presents a challenge that requires constant monitoring.

"If we don't have port access, we will not have a graphite project," Talga chief executive officer Mark Thompson said at a signing ceremony with Port of Lulea managing director Roger Danell.

From bitterly cold Lulea, where the overnight temperature dropped to minus 14C (and the wind chill took it even lower) Thompson led his guests on a 300km drive to Kiruna with a steady snowfall producing near white-out conditions and laying the foundations for the biggest disappointment of the three days in the field.

So heavy was the snow in near windless conditions and so burdened was the forest that even snowmobile-riding locals advised against making the final 3km trip to the graphite orebody which features an impressive cliff-face of the carbon-rich ore.

Curiously, not seeing the graphite wasn't the disappointment that it might seem because of that all-important bulk commodity factor, transport economics.

What Thompson was able to demonstrate – and why Talga could be onto a winner – could be seen in:

- The quality of the road access, even in white-out conditions north of the Arctic Circle;
- Access to a heavy-haul railway linking the iron ore mine at Kiruna with the port at Lulea;
- Abundant professional mining services and skilled mining labour in a region with a deep mining history;
- Low-cost and abundant electrical power from a combination of hydro and nuclear sources; and
- A location within easy delivery distance of major European consumers of graphite, especially vehicle makers who are quickly developing their electric car capacity.

For followers of graphite – as one of the minerals made fashionable by a combination of Chinese production controls and demand in new technologies such as long-life batteries – the Talga situation is an emerging success story in reverse.

There is no question that at Nunasvaara the small Australian company has the world's highest-grade (and second biggest) graphite deposit in the world, with an initial JORC-code compliant resource of 7.6 million tonnes grading 24.4% graphite for 1.86Mt of graphite.

It is the grade, more than the tonnes, which should be the making of Nunasvaara and while the 24.4% average is measurably higher than its nearest competitor (19.3% at Lac Gueret in Canada) there is potential for even higher grades and more tonnes because exploration at Nunasvaara is far from finished.

In fact, graphite in the Kiruna region of northern Sweden has been known for decades, examined at one stage as a possible fuel ►



*In agreement: Talga has struck a deal with the local port authority at Lulea.*



## Minesite Visit: Nunasvaara, Sweden



All mapped out: Talga Resources in Sweden.



Drop of the hot stuff:  
Tim needs his sustenance.



Graphite connection:  
Talga CEO Mark Thompson.

source, given graphite's alternative status as the highest grade of coal, one notch up from anthracite.

Talga's orebody has been picked over by earlier explorers with the previous immediate owner being the big Canadian resources group, Teck. It quit its northern Swedish assets to concentrate on bigger targets elsewhere, flicking across to Thompson and his team a perfect opportunity to develop a "starter mine".

Given that Lulea is about 600km by sea from Stockholm and another 700km to Germany's biggest port, Hamburg, it puts Talga's graphite within easy delivery distance of big European consumers.

Cracking open a niche in the specialised world of graphite, with its multiple grades and variable specifications, will be a challenge for Talga that could be made easier by bringing in a major end-user of the material as a development and end-product offtake partner.

Given that Lulea is about 600km by sea from Stockholm and another 700km to Germany's biggest port, Hamburg, it puts Talga's graphite within easy delivery distance of big European consumers and provides another transport economics advantage over more remote graphite deposits in Africa or Australia.

More detail on Talga's graphite plans will become available in the next few months as a preliminary scoping study is finalised and as exploration continues to find the highest grade deposit as a pit starting location – preferably an orebody rich in premium-quality "flake" graphite.

Never an easy story for investors to follow, graphite is both a scarce and abundant commodity. Scarce because of Chinese market control and abundant because there is no shortage of graphite, natural or synthetic.

It is the economic factors which will probably restrict the development of graphite mines, with some experts in the business tipping an opening for three or four new mines over the next few years.

And it is the transport economic advantage (and high grades) which should make Talga's mine one of the new producers – a prediction made without ever actually seeing the orebody but after getting a good look at the port, rail, road and power lines which combine to make a bulk mine possible.

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