# **New Deep Inferred Resources at Tara Mine**

### Summary

Deep drilling, over the period 2012-2016, on a seismic exploration target south of the Tara Mine, has intersected a new zone of Zn-Pb mineralisation with similar characteristics to the main orebody. Up to late 2016, 45 intersections of ore grade mineralisation had been made and these outline an Inferred Resource amounting to 10.2 Million Tonnes grading 8.5% Zn and 1.8% Pb. The new Tara Deep resource is located 2 km from the Tara Mine South West Extension, at depths ranging from 1.2 to 1.9 km.

The Boliden Board have approved underground development to access the new mineralisation and allow underground delineation drilling to convert Inferred to Indicated Resources and to generate Mineral Reserves following technical and economic feasibility work.

Surface exploration drilling continues to define further extensions in the area, guided by on-going geological interpretation, seismic and electromagnetic geophysical surveys.

### 1. Discovery and Location

In 2010, a major review of exploration and geology at Navan suggested that seismic surveys should be undertaken to locate deeply buried targets. Seven lines of 2D seismic surveys were completed in Co Meath over the period 2011 to 2012 and a clear target was drilled in 2012. The first drill hole yielded a significant intersection of 32m grading 11.0% Zn and 3.0% Pb. Subsequent drilling continued to intersect high grade mineralisation with 69 holes drilled up to late 2016 totalling 96km of drill core.

The new Tara Deep resource is located 2 km from the South West Extension of Tara Mine (Fig. 1) at depths between 1.2 to 1.9 km below surface (the deepest workings in the Tara mine are just less than 1 km deep).

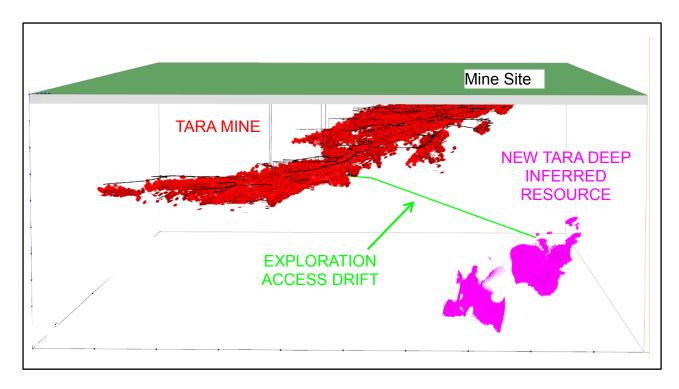


Figure 1. Perspective view, looking northwards of the Tara Mine showing the newly discovered Tara Deep Inferred Resources in the foreground.

### 2. Licensing

The mineralisation lies totally within Prospecting Licence PL4502 issued by the Department of Communications, Climate Action & Environment.

## 3. Geology

The mineralisation occurs in Lower Carboniferous limestones; specifically the 5 Lens interval of the Pale Beds, directly comparable to the host stratigraphic setting of the Main Orebody at Tara (Fig. 2). In general the stratigraphic setting is very similar to the existing mine. Structurally the mineralisation is located on a major fault-controlled 'terrace' that occurs between two major normal faults (Fig. 2). The P Fault, which locally defines the southern limit of the Tara Orebody, forms the northern limit to the terrace while the southern limit is defined by a larger structure, the Navan Fault, which has a displacement of several kilometres. The new mineralisation is located where this terrace is further dislocated by a NW trending, westerly dipping steep fault zone that is as yet not fully drilled.

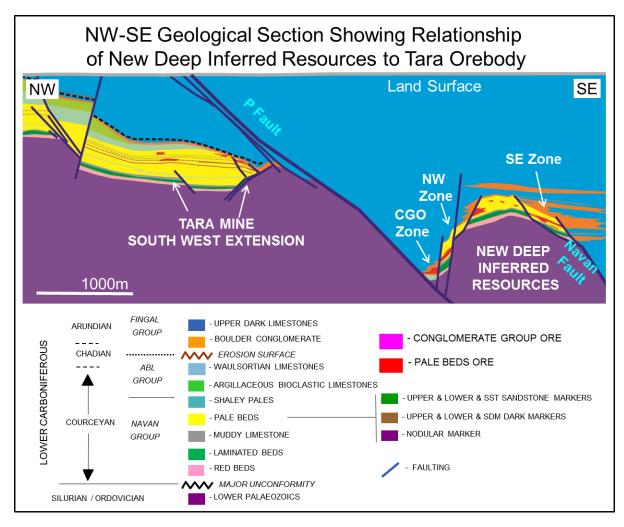


Figure 2. Simplified NW-SE geological section showing relationship of new deep Inferred Resources to the Tara Orebody.

#### 4. Mineralisation

Three areas of mineralisation have been identified so far (Fig. 2):

<u>SE Zone</u> – A 0.9x0.6 km size zone lying at depths of 1.2 to 1.5 km below surface and dipping at 35-45 degrees to the south west. Hosted by Lower Pale Beds.

<u>NW Zone</u> – A steeply dipping structurally controlled zone trending for 700m north west and dipping south west, lying 1.4 to 1.9 km below surface. Hosted by Lower Pale Beds.

<u>CGO</u> Zone – A smaller steeply dipping lens of sulphides hosted by Boulder Conglomerate and developed immediately west of the NW Zone.

Resource grade mineralisation can be several 10s of metres in thickness with variable low-grade waste partings. These zones are open or partly open in several directions and there are obvious structural target areas where further mineralisation

may be found. It is envisaged that the SE and NW Zones will merge into a single entity following further drilling, albeit split by faulting.

The Pale Beds hosted mineralisation is typically stratabound and follows the dolomite and micrite lithologies of the lower Pale Beds. It comprises sphalerite and galena with subsidiary pyrite, marcasite, barite, dolomite and calcite (Fig. 3). Ore textures vary from massive sulphides to sulphide-cemented breccias, disseminated material and chaotic sulphide veining.

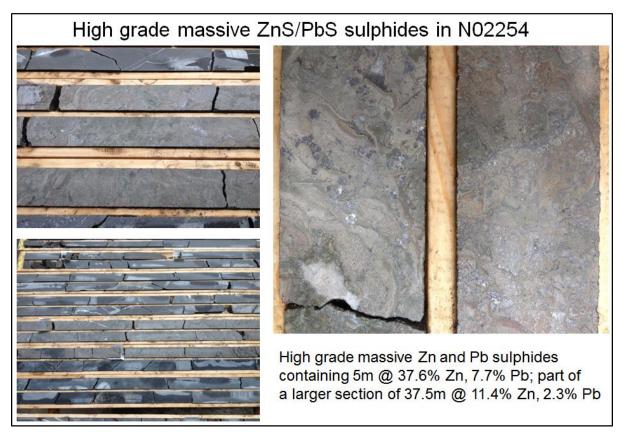


Figure 3. High grade Zn-Pb sulphides from drilling at new deep Inferred Resource at Tara.

### 5. Sampling and QA/QC

All core is NQ size and recovery is close to 100%. Core is split with a diamond saw and samples dispatched to Tara's in-house laboratory. Most samples were repeat-analysed at ALS Loughrea from coarse reject material. Half core is retained for permanent storage. All assays were checked against visual estimates of mineralisation in core and any discrepancies checked by comparison with retained core samples.

#### 6. Resource Estimation

Inferred Resources were estimated by Boliden Tara Mines in-house stratigraphic slicing system (Table 1). Approximately 4m thick slices, were used to define stratigraphically-controlled composites (generated by density x length weighted averaging). Density was determined by measurement of representative mineralised samples and applied using multiple regression equations relating density to Zn, Pb, Fe assays. Tonnages and grades were estimated in 40m square blocks for the mineralised slices and slices running at 5% Zn+Pb and greater were combined to define resources. Tonnages and grades were estimated via inverse distance weighting of slice composite data. A 15% tonnage cut-factor was applied to all estimates as a conservancy measure.

Area	Tonnes	Zn %	Pb %	Fe %	Comments
SE ZONE (Lift 2)	997,000	7.08	1.45	2.84	Local separate sub-lens overlying Lift 1
SE ZONE (Lift 1)	5,741,000	8.92	1.58	3.17	5 Lens, dips and grades increasing to SW
NW ZONE	2,466,000	8.65	2.52	1.93	Steep, locally sheared mineralization in H/W of S Fault
CGO	1,035,000	7.25	1.60	2.50	Steep mineralization hosted in Boulder Conglomerate
Total	10,239,000	8.51	1.80	2.77	

Table 1. Tabulation of sub-areas of new Inferred Resources.

A separate estimation was carried out by colleagues in Sweden using Datamine software and this yielded a closely similar figure. The work has been reviewed and approved by Gunnar Agmalm, Boliden's Mineral Reserves and Project Evaluation Manager, who is registered as a "Qualified Person" by SveMin and as a "Competent Person" in accordance with JORC.

#### 7. Caveats

The new ore zones are at significant depths and distances from the Tara Mine. Considerable technical efforts will be needed to access and establish a new mine at this location and will be challenging from access, ventilation and ground control perspectives.

#### 8. Plans

The ore zones are open in several directions and are part of a larger fault-controlled 'terrace', running south of the Navan Orebody that is considered to be highly prospective. Seismic surveys conducted in late 2015 are currently being tested by several step-out exploration holes to help determine this potential.

Surface drilling is continuing near and within the ore zones to extend the size of the deposit and increase the Inferred Resources.

An underground exploration access drift is planned that would extend for over 2 km to the new ore zones. Exploration drives from this access will allow detailed exploration and delineation of the area and allow Inferred Resources to be upgraded

to Indicated Resources and, after feasibility studies, enable Ore Reserves to be defined.

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