

IRELAND: EXPLORATION & MINING NEWS

1st November 2011

MINING HIGHLIGHTS

Mine Operations

There are currently five operating mines in Ireland (Figure 1): Navan (zinc-lead), Lisheen (zinc-lead), Galmoy (zinc-lead), Knocknacran (gypsum) and Drummond (gypsum).

2011 Half Yearly (Jan-June) Mine Production

- Zinc metal in concentrates: 175kt (1.5% higher than H1, 2010)
- Lead metal in concentrates: 25kt (34% higher than H1 2010)

2011 Half Yearly (Jan-June) Mine Output (Metal Content)

(a) Zinc

- Ireland produced 30% of European zinc mine output in the first half of 2011 (1st in Europe)
- Ireland produced 3% of World zinc mine output in the first half of 2011 (10th in World)

(b) Lead

- Ireland produced 13% of European lead mine output (4th in Europe)
- Ireland produced 1% of World lead mine output (12th in World)

Source of Production Data: International Lead & Zinc Study Group

Development

Ireland's three base metal mines continue to make up a significant proportion of European zinc and lead mine output. In the first half of 2011, the Irish operations accounted for 30% of European zinc and 13% of European lead mine production. These figures equate to 3% of world mine production for zinc and 1.2% for lead. Based on the 2011 half yearly figures, Ireland ranks 10th in the world in terms of zinc mine output and 12th for lead.

Boliden Tara Mines' underground operation at **Navan**, Co. Meath, is the largest zinc mine in Europe and 9th largest in the world. In the first half of 2011, Tara milled 1.3Mt of ore grading 7.1% Zn and 1.4% Pb. Since mining operations commenced in 1977, total production at Navan has amounted to 77Mt grading 8.2% Zn and 1.9% Pb. At the end of 2010, the mine's JORC classified ore reserves (proven and probable) stood at 16Mt grading 7.1% Zn and 1.8% Pb, whilst mineral resources (measured, indicated and inferred) were 11.9Mt at 7.1% Zn and 1.9% Pb.

In February 2011, London Stock Exchange listed **Vedanta Resources Plc** completed its acquisition of the **Lisheen Mine** from Anglo American Plc, in a deal which valued Lisheen at US\$308 million. In the first six months of 2011, Lisheen mined 615kt of ore grading 12% Zn and 2% Pb, yielding 130kt of zinc concentrates (53.7% Zn) and 15kt of lead concentrates (61.3% Pb). Since mining was initiated in 1999, approximately 16.9Mt grading 11.9% Zn and 2.0% Pb has been mined at Lisheen. The last official Resource and Reserve Statement issued by Lisheen in January 2011 showed remaining reserves amounting to 5.97Mt at 10.92% Zn and 1.80% Pb, with additional resources of 1.32Mt grading 13.69% Zn and 2.39% Pb.

In the first half of 2011, **Galmoy Mines Ltd.**, a subsidiary of Lundin Mining Corporation, blasted over 0.14 Mt of ore grading 22.8% Zn and 7.6% Pb from its underground mine in Co. Kilkenny. Mining at Galmoy was originally scheduled to cease in May 2009, but due to positive market factors, mining of remnant high grade ore has continued to occur. All of the extracted ore is transported to a neighboring mine for processing, Galmoy's mill having been decommissioned in mid 2009. Since 1997, the mine has produced over 7 Mt of ore at a combined grade of approximately 12 % zinc and 3 % lead. It is currently planned for the mine to cease operations in the first half of 2012.

Irish Gypsum Ltd., a subsidiary of French multi-national Saint Gobain, produced approximately 300kt of gypsum in 2010. The vast majority of this tonnage was sourced from the opencast operation at **Knocknacran**, Co. Monaghan, with the remainder coming from the adjacent underground mine at **Drummond**. The gypsum is crushed and blended on site, before being transported by road to a production facility at the nearby town of Kingscourt for manufacturing plaster and plasterboard. In addition, small tonnages of gypsum are used in the manufacture of cement and as a soil conditioner.

Exploration Activity

Ireland continues to attract high levels of exploration interest. As of 1st November 2011, 36 exploration companies held 517 Prospecting Licences (PLs), the highest number of 'current' licences since 1992. A further 116 Prospecting Licence applications are currently being processed. Since 1st May 2011, 36 licences have been issued, of which thirteen were granted to new entrants to the Irish exploration scene; IMC Exploration Limited (twelve licences; see below) and Irish Resource Exploration Ltd. (one licence for gold and silver in Co. Galway). Since the start of 2011, twelve new company entrants have initiated prospecting activities in Ireland. A further six new entrants are awaiting the issue of Prospecting Licences.

Lead and zinc remain the principal commodities of interest, but other minerals currently being sought include gold, silver, PGEs, copper, molybdenum, lithium, tungsten, caesium, REEs, diamond, gem minerals, barite, calcite, fluorite, coal and fireclay.

EXPLORATION HIGHLIGHTS

- *Number of exploration licences issued is at a nineteen year high*
- *Further significant high grade drilling intersections reported from Pallas Green, Stonepark and Kilbricken*
- *In excess of 150 line kilometres of seismic data acquired across the Irish Midlands*

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| Number of Prospecting Licences (PLs): | 517 |
| Number of Companies holding Prospecting Licences: | 36 |
| Percentage of Ireland Land Area under Licence: | Approximately 25% |
| Total Exploration Expenditure in 2010: | €1.8 Million |
| Exploration Expenditure on PLs in 2010 | €6.1 Million |
| Exploration Expenditure on State Mining Facilities in 2010: | €5.7 Million |
| 2010 Drilling on PLs (non-mine related): | 74,326 metres. |

Boliden Tara Mines Ltd. remains the largest Prospecting Licence holder in Ireland with 93 licences. In 2011, the company has continued their delineation and exploration drilling in the Navan area, completed a 20km seismic line southwest of Navan and carried out regional exploration drilling on their Tullamore, Limerick and Slievedart licence areas. Boliden has additionally entered into a joint venture (JV) agreement (subject to Government approval) with **Connemara Mining Company Plc** to explore the latter's Oldcastle block of licences in Counties Cavan and Meath. Exploration under the proposed JV will include extending the current soil sampling coverage, lithochemical sampling and shallow stratigraphic and lithochemical drilling.

In probably the largest drilling programme ever undertaken in Ireland, Xstrata Zinc has 21 rigs turning on their **Pallas Green** exploration project in Co. Limerick. Drilling since 1999 has confirmed the widespread existence of significant zinc-lead sulphide mineralization. Until recently, exploration was carried out under a joint venture between Xstrata and Irish junior explorer, Minco plc. However, in July 2011, Xstrata agreed to purchase all of Minco's interest in the Pallas Green JV for US\$19.4 million. Minco shareholders approved the disposal of its interest in the JV at an Extraordinary General Meeting held in Dublin on 24 October 2011.

In early 2011, Xstrata announced a €13 million project budget for Pallas Green comprising exploration and infill drilling (some 100,000m of drilling in 230 holes), a 2D ground seismic survey (23 line kilometres) and a pre-feasibility study (budgeted at €3 million). To the end of August 2011, 144 drillholes had been completed (approx 64,000m), of which the majority were infill holes. Some 42% of infill holes intersected mineralization exceeding three metres in width, with an average grade in excess of 4% combined lead and zinc. In February 2011, Xstrata announced a JORC compliant inferred resource estimate for Pallas Green of 25.9 Mt at an average grade of 7.51% Zn and 1.38% Pb (based on a 4% zinc equivalent cut-off). In a presentation issued in August 2010, with its Half Year Results, Xstrata indicated a potential start-up date of 2017 for a mine at Pallas Green, with an indicative capital cost of US\$300 million and with an indicated annual production of 160,000 tonnes of zinc.



Figure 1: County Map of Ireland showing locations mentioned in text.

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| BK | Ballinalack |
| C | Clontibret |
| CR | Cregganbaun |
| D | Derryginagh |
| GA | Galmoy |
| KB | Kilbricken |
| K | Kish Bank Basin |
| KD | Knocknacran/Drummond |
| LI | Lisheen |
| MA | Mallow |
| NA | Navan |
| PG | Pallas Green |
| SM | Silvermines |
| ST | Stonepark North |

During 2011, Limerick Zinc Ltd., representing a joint venture between **Teck Ireland Ltd** (75%) and **Connemara Mining Company Plc** (25%) has continued to receive encouraging drill results from their **Stonepark** zinc property. Located approximately five kilometres southwest of Xstrata's Tobermalug resource, Teck is completing a 25,000m drilling campaign with up to six rigs on site in 2011. Teck has now defined several zones of mineralization since the discovery hole at Stonepark (TC-2638-004, 4m at 11.6% Zn and 3.5% Pb) in 2007. A new zone, Stonepark West, 1.7km southwest of Stonepark North, has also been discovered this year with several high grade intersections. A highlight of the 2011 drilling programme, is hole TC-2638-074 which intersected 8.65m at 7.71% Zn and 2.19% Pb from 220 metres, including 2.85m at 17.4% Zn & 3.98% Pb from 224.45m at Stonepark North. Teck also completed an airborne Full Tensor Gradiometry (FTG) survey over Limerick early in 2011, and a 19km seismic reflection survey.

Teck Ireland Ltd. also holds a further 65 licences throughout Ireland. During 2011, Teck completed approximately 90km of seismic and flew an additional airborne FTG survey. Teck continues to drill test targets both within the Irish Midlands and on their other licences.

Rathdowney Resources Ltd., through its subsidiary Exploration and Discovery Ltd., holds 51 Prospecting Licences in eight separate project areas. Since 2007, the company has invested US\$3.5 million on exploration in Ireland, including a heliborne SkyTEM survey, an airborne gravity survey and the collection of over 20,000 soil samples. The company has commenced a 15,000 metre drilling programme to test 45 drill targets generated from the earlier geochemical / geophysical exploration work. As of 22nd September 2011, the company had drilled a total of 4,600 metres on its Mallow and Westmeath licence blocks.

Following the acquisition of joint venture partner Belmore Resources Ltd in mid 2011, **Lundin Mining Exploration Ltd** now holds a 100% interest in its 'Clare Project,' which includes the zinc-lead-silver prospect at **Kilbricken**. Up to the end of end Q3, 2011, Lundin had completed a high resolution 3D seismic survey around Kilbricken and drilled over 70 holes in its licences for a total meterage of approximately 50,000m. Much of the drilling has concentrated on Kilbricken, where a 2010 drillhole intersected 20.5m at 16.73% combined lead/zinc and 74.5 g/t silver. However, regional exploration drilling has also taken place, including several holes at the Ballyvergin-Crow Hill copper prospect, located seven kilometres north of Kilbricken.

Conroy Gold and Natural Resources plc (formerly Conroy Diamonds and Gold plc) holds 16 Prospecting Licences along a 50 km strike length of the Longford Down Massif in Counties Cavan and Monaghan.

Following positive results obtained from a scoping study undertaken by Wardrop Engineering Inc. in 2010, the company commenced a 3,500 metre infill drilling programme at its **Clontibret** gold prospect. A recent press release indicated that one hole intersected 9.1m at 2.87g/t Au (including 1.05m at 11.24g/t gold) at a depth of 118 metres. In July 2011, Conroy contracted Golder Associates to carry out detailed environmental monitoring and ecological studies at Clontibret that will form part of an Environmental Impact Assessment for the project area.

New Irish junior explorer, **IMC Exploration Ltd**, established by a team of geologists with over 140 years exploration experience in Ireland, has recently been issued with 13 Prospecting Licences. The company is exploring for base metals in Cos Clare, Limerick, Tipperary and Roscommon and for gold in Cos. Wicklow and Wexford. Following admission to the London-based PLUS Stock Exchange and a successful fund-raising effort, the company has commenced a continuous eighteen month drilling programme on its PL areas. A first hole has already been drilled on its **Tulla** licence (SE Co. Clare), intersecting significant calcite mineralization that capped an interval of semi-massive pyrite.

Sunrise Resources plc. has commenced a drilling programme at its **Derryginagh** Barite project in Co. Cork. Eight diamond drill holes have been provisionally planned to test the main barite vein system over a strike length of 500m and to a depth of 150m. In May 2011, Sunrise announced that a Concept Study suggested that a profitable operation could be developed at Derryginagh, for an output of at least 50,000 tonnes per year. The company is targeting the Derryginagh deposit for the production of high value, white, 'paint-grade' barite for use as mineral filler in paints and plastics.

Exploration and Mining Expenditures 2010

Based on figures provided by exploration and mining companies, expenditure during the calendar year 2010 totalled **€21.8 million**. This was up on the 2009 figure, when €1.7 million was spent. The €21.8 million figure is made up of expenditure of €16.1 million in Prospecting Licence Areas ("greenfield" exploration) and €5.7 million in areas covered by State Mining Facilities (SML) ("brownfield" exploration). The increase in expenditure over 2009 figures is largely accounted for by PL area drilling expenditure up €6.3 million (a significant proportion of which relates to the drilling of two *offshore* wells by V.P. Power on its Kish Bank Basin licence), SML drilling expenditure up €2.6 million and other expenditure in SMLs up €1.77 million.

Drilling statistics

Figures provided by Prospecting Licence holders indicate that a total of some 74,326 metres of drilling (non mine-related) was carried out during 2010, mainly for base metals (zinc, lead). In State Mining Facilities 60,801 metres of mine-related drilling and 17,357 metres of exploration drilling was carried out in 2010, for base metals at the Navan and Lisheen mines and for gypsum by Irish Gypsum.

A. Prospecting Licences

| Activity | Base Metals € | Gold € | Other Minerals € | Total € |
|---|-------------------|-----------------|---------------------|------------------------|
| Geology | €1,710,289 | €7,434 | €13,451 | €1,751,174 |
| Geochemistry | €303,403 | €107,603 | €0 | €411,006 |
| Geophysics | €37,416 | €0 | €1,300,907 | €1,338,323 |
| Airborne Surveys | €0 | €0 | €0 | €0 |
| Drilling | €3,398,744 | €155,840 | €5,703,580 | €11,258,164 |
| Trenching | €0 | €0 | €0 | €0 |
| Environmental Studies | €12,907 | €6,410 | €0 | €19,317 |
| Other Costs (Includes consultancies, data acquisition, report writing, but excludes office overheads. | €400,422 | €162,242 | €6,817 | €569,481 |
| Total Expenditure (PL Areas) | €8,663,181 | €459,529 | €7,024,755 | (a) €16,147,465 |
| Irish Office Overheads | | | | €1,434,923 |
| Total plus Office Overheads | | | | €17,607,388 |

B. State Mining Facilities (SMFs)

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| Exploration Expenditure: | |
| Drilling | €3,778,089 |
| All Other Expenditure | €1,884,699 |
| Total Exploration Expenditure, SMFs | (b) €5,662,788 |
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| Total Exploration Expenditure in PLs and SMFs, excluding office overheads, i.e. (a) + (b) | €21,810,253 |

PDAC Convention, Toronto, March 2011

The 79th Annual Convention and Trade show of the Prospectors and Developers Association of Canada (PDAC) was held in Toronto from 6th to 9th March 2011. As usual, the Exploration and Mining Division exhibited at the Trade Show, where we were joined with colleagues from the Geological Survey of Ireland and the Geological Survey of Northern Ireland, in a combined **Ireland** exhibit.

The PDAC meeting is the biggest of its kind in the world, and this year the attendance figures reached an all-time high of 27,700 (26% higher than in 2010). In all, 1,000 exhibitors attended PDAC 2011 including government delegations from over fifty countries. It is expected that Ireland's involvement in the Trade Show will result in an increased interest in exploration in Ireland.

Tellus Border Project

On 15th February 2011, a €5 million EU-funded geological project to assist in mapping the natural resources of the border counties of Donegal, Sligo, Leitrim, Cavan, Monaghan and Louth was launched. Over the next three years extensive survey work will provide important background information on geology, stream water quality, and potential pollution sources. The project is a joint initiative between the Geological Survey of Ireland (GSI), the Geological Survey of Northern Ireland (GSNI), the Dundalk Institute of Technology, and Queen's University, Belfast. The project builds on the award-winning Tellus Project in Northern Ireland, which produced new environmental maps and digital data of soils, rocks and stream waters of the whole of Northern Ireland.