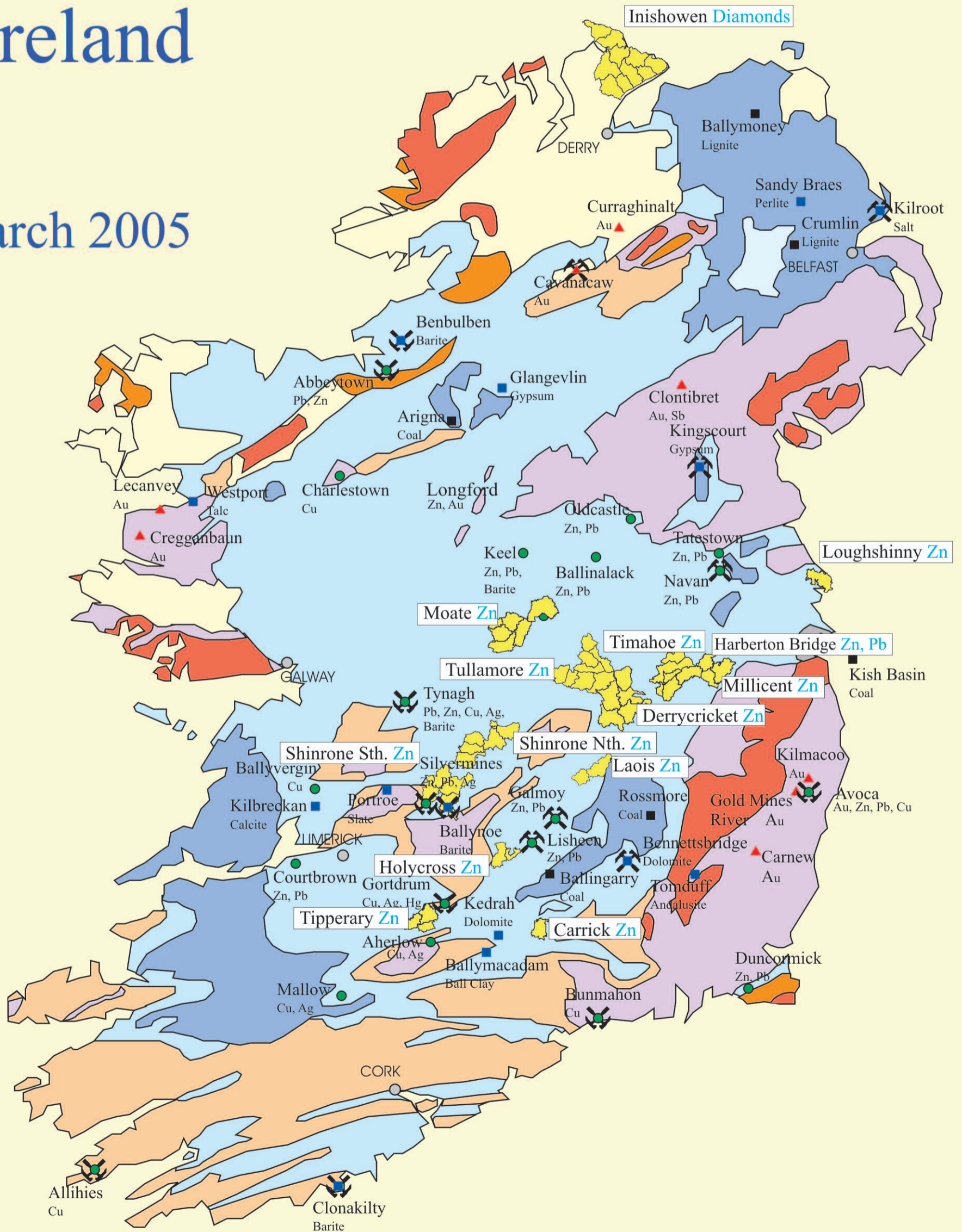


Joint Venture Opportunities in Ireland

March 2005

EXPLORATION AND MINING
DIVISION
IRELAND



MINERAL EXPLORATION IN IRELAND

Joint Venture Opportunities

March 2005

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MINERAL EXPLORATION IN IRELAND

Joint Venture Opportunities, March 2005

The following joint venture opportunities are currently available in Ireland. The descriptions of the properties have been provided by the companies that hold the Prospecting Licence(s) and have been subjected only to minimal editorial changes. Interested parties should firstly contact the company offering the opportunity. The Department of Communications, Marine and Natural Resources makes no judgement on the descriptions of the properties, and it is the absolute responsibility of any interested party to satisfy themselves as to the veracity of the description(s). Also it is the responsibility of any interested party to establish the status of the property in terms of the validity of the relevant licence(s) and as to whether the property is in good standing in respect of required exploration programmes and expenditure. Further information and assistance is available from the Exploration and Mining Division of the Department. In particular, interested parties should read the brochure "Exploration and Mining Facilities" which is available free of charge from the Division.

Arcon

Harberton Bridge (Zn,Pb)

ARCON Exploration holds two adjacent prospecting licences, PLs 1604 and 1607, in Co. Kildare. PL1607 covers the Harberton Bridge Prospect, which consists of extensive zinc-lead mineralization of MVT style, hosted in breccias developed mainly within the Waulsortian Mudbank Limestone Formation. Secondary oxide mineralization is known to occur above the breccia-hosted bodies, and minor zinc-lead mineralization has been intersected in the underlying 'Navan Beds Equivalent'.

At Harberton Bridge, at least four separate zones of mineralization have been identified. However only one, the Canal Zone, has been sufficiently drill-tested to assign a geological resource. In the Canal Zone, 1 Mt of residual oxide mineralization grading 0.74% Zn+Pb overlies 3.6 Mt of sulphide mineralization grading 9.6% Zn+Pb.

ARCON Exploration Plc seeks a joint venture partner to fund and carry out a drill campaign to find additional mineralization in the area.

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Asarco

Asarco Exploration Company Inc. is currently undertaking a comprehensive technical review of its ground holding in Ireland. Project work is contracted to the CSA Group in Ireland and also to French consultants Georem, who have extensive experience in Irish Carboniferous mineralization, and who will direct the next phase of exploration.

The ground holding covers an area of 555km² divided into five licence blocks, Timahoe, Tipperary, Derrycricket, Millicent and Carrick, where there are the same dolomitized Waulsortian Limestone Complex lithologies that host the Lisheen and Galmoy zinc-lead ore bodies.

Timahoe (Zn)

The 150km² Timahoe block (600, 1630, 3846 & 3866) is situated adjacent to the Harberton Bridge MVT style deposits that host an indicated resource of 3.6 Mt @ 9.6% combined Zn & Pb. Drilling by Asarco, 10km from Harberton Bridge, has intersected 5.5m of massive and semi-massive pyrite, and has significantly extended prospectivity within the block. The block also contains additional mineralized horizons which have been confirmed from drilling, including a 30m zone with an intersection of 3.1m @ 1.2% Zn.

Tipperary (Zn)

In the 75km² Tipperary block (468, 2654 & 3552), drilling has intersected pervasive disseminated and vein style sphalerite mineralization over 78m in part-dolomitized Waulsortian. The best intersection is 3m @ 1.47% Zn, 0.3% Pb with samples frequently greater than 1% Zn and occasionally up to 0.8% Cu. The geology is similar to the Pallas Green prospect located approximately 10km to the northwest.

Derrycricket (Zn)

Drilling in the 234km² Derrycricket block (1624, 1640, 3853, 3854 & 3920) has intersected encouraging disseminated sulphide mineralization in two drill-holes (including a section of 1.2m @ 2.3% combined Zn & Pb) drilled within a 5km wide corridor, with dolomitization of the shelf and reef limestones, and indications of brecciation.

Millicent (Zn)

The 66km² Millicent block (1608 & 3332) is located on the southeastern side of the Kildare Inlier that is adjacent to the Harberton Bridge deposits. Soil geochemical anomalies will be drilled in the next programme.

Carrick (Zn)

The 30km² Carrick licence (3689) has been recently acquired. The geology includes a dolomite front in the same stratigraphic position as at the Lisheen deposit and, together with soil geochemical anomalies, drill targets have been defined.

Due to a re-organization of Asarco's mining interests there are joint venture opportunities on these projects described. Interested parties should contact Thomas Simpson with Asarco in Tucson, Arizona (TSimpson@asarco.com).

Cambridge Mineral Resources

Inishowen (Diamonds, gem minerals)

Cambridge Mineral Resources PLC ('Cambridge') is exploring for diamond and gemstone deposits within a block of ten Prospecting Licences (PLs) covering 382km² on the Inishowen Peninsula in the northwest of Ireland. The ten PLs are 2964, 3007, 3008, 3056, 3062, 3063, 3094, 3496, 3820 and 3856. Stream sediment sampling has yielded a number of diamond indicator minerals and abundant rubies and sapphires. Based on deep seismic reflection studies, Archean lithospheric mantle is interpreted to lie over 40km beneath the Inishowen region.

Exploration by Cambridge has included high-resolution aeromagnetic surveying of the entire licence block, ground magnetic surveys, prospecting and mapping, 300m of NQ drilling in five separate holes, and 260m of trenching. Bulk stream sediment samples were processed in the on-site laboratory by Wilfley Table, and dispatched for analysis in Canada.

Based on diamond indicator evidence, the target diamond host rock for Inishowen is lamproite. Furthermore, a potential minette or lamprophyre (camptonite) pipe, two camptonite dykes and an altered minette dyke have been discovered by Cambridge at investigated sites. These lithologies include lithologies similar to ruby- and sapphire-bearing rocks in gemstone mining areas in New South Wales, Thailand and Cambodia.

Cambridge seeks a joint venture partner to fund further sample processing, target evaluation and drill testing. Targets awaiting follow-up work include areas from which DI chromite, G9 and G11 garnets, DI CP5 and DI CP6 clinopyroxene and lamproitic chromite have been recovered. All available data is well organized and readily available for review.

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Glencar Mining

Laois (Zn)

The 100% Glencar Mining plc owned Laois Project incorporates two contiguous Prospecting Licence areas – PL 3662 and PL 2512 in Co. Laois. Glencar's exploration focus is on a target area west of the town of Stradbally, with a strong geochemical and geophysical signature.

A shallow drilling programme of seventeen 50 metre deep boreholes, completed in 1999, delineated a zone of extensive dolomitization with pervasive zinc mineralization. The extent of the dolomitization was regarded as particularly significant, and two additional diamond drillholes were subsequently drilled on the target. Drillhole 00-2512-01 was an inclined hole drilled to 100m depth across the geochemically anomalous zone, to help define a geophysically-inferred fault that is believed to be an important control on the dolomitization in the zone. In 2002, Drillhole 00-2512-02 was drilled to a depth of 1,290 metres, and was targeted at evaluating the extent of the dolomitization at depth. This drillhole encountered significant extensive dolomitization and brecciation, similar to that exhibited at the other major mineral deposits within the Rathdowney Trend, particularly as intersected between 841m and 972m.

Fluid inclusion analysis carried out on core samples from this zone illustrates that fluids comparable in origin to the mineralizing fluids at the Lisheen and Galmoy orebodies were responsible for the formation of this dolomitization, and places the hole within the recognised and identified Rathdowney Trend mineralization regime. The upper lithologies encountered in the drillhole, down to a depth of 1,000 metres, were consistent with those in the Lisheen/Galmoy area. However, the main mineralized stratigraphic horizon in the Rathdowney Trend regime, the Waulsortian Reef limestone, expected to occur at approximately 1,000 metres depth, is absent in the borehole, and the hole was terminated in the sub-Reef Ballysteen Formation at 1,290m. The hole has been capped to allow future re-entry.

The drilling on the property to date suggests that a considerable exploration programme is warranted, one that would incorporate a significant amount of deep drilling. Glencar is therefore now seeking a joint-venture partner to advance the project. An information pack on the property is available from the company in electronic format.

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Hereward Ventures

Tullamore (Zn)

Hereward Ventures plc is exploring for zinc within eight prospecting licences that form a contiguous block, the Tullamore Licence Block, 80km west of Dublin. The block lies close to the Kinnitty and Crinkill prospects and, in the northwest, contains a major regional structure, the Knockshigowna Fault. The presence of Chadian (Lower Carboniferous) volcanic rocks demonstrates that structures present penetrated to deep crustal levels and were active in the Chadian. The Knockshigowna Fault and associated faults are interpreted to have been controls for mineralizing processes. Waulsortian

lithologies, one of the main hosts for Zn-Pb mineralization in Ireland, are interpreted to be present within all of the licences, either in outcrop or at depth.

Work undertaken by Hereward Ventures includes high-resolution airborne magnetic surveying, data compilation and geological interpretation. Hereward's aeromagnetic data was reprocessed by independent geophysicists. Upward continuation processing was undertaken, using a technique modified from CSIRO-developed wavelet processing. This state-of-the-art procedure has delineated a number of discrete target structures for drill testing.

Hereward Ventures seeks a joint venture partner to fund the drill testing of target areas. Existing data is well organized and readily available for review. This review can quickly prioritize structural targets and result in a short lead-in time to drilling.

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Minco

Minco is seeking joint venture partners for its Shinrone, Moate and Holycross licence blocks.

Shinrone (Zn)

The Shinrone property covers two separate blocks of contiguous prospecting licenses. The northern block consists of seven PLs, 626, 627, 2016, 649A, 2670, 3115 and 3727, and covers a total area of 167km². The southern block consists of four PLs, 3156, 3425, 3668 and 3678 and covers an area of 166km². The northern block is located within northern County Tipperary and southern County Offaly, to the south, east and southwest of the town of Birr. The southern block lies within northern County Tipperary, east, north and west of the town of Nenagh.

Based on exploration results to date, and the location of the Property in relation to regional trends within the Midland Orefield, the Shinrone property has considerable potential for the discovery of large Waulsortian Reef-hosted, zinc-lead deposits, analogous to Lisheen or Silvermines. Both licence blocks are located along a NE-SW orientated, regional structural lineament, the Navan-Silvermines Trend, defined using regional scale geophysics, magnetics and gravity. The northeast trending Knockshigowna Fault zone bisects the

property, and is the surface reflection of this deep-seated basement feature. Elements of this structural zone appear to have been active during sedimentation, as evidenced by facies changes and stratiform breccia development. Most of the movement along the fault zone, however, is clearly Variscan, dating from the end of the Carboniferous. This fault zone, consisting of northeast and northwest striking components, is typical of those with which Irish zinc-lead orebodies are associated, and is intimately associated with regional fold development within the Upper Palaeozoic cover rocks. The Lower Carboniferous stratigraphy on the property is typical of that of the southwestern part of the Midland Orefield, as seen at the Tynagh, Silvermines, Lisheen, Galmoy and Gortdrum orebodies.

Historical exploration on the Shinrone Property has focused on the target limestones southeast of the Knockshigowna Fault zone, flanking the inlier. Historical exploration prior to 1998 consisted of geological mapping, soil and base of till sampling, short-hole stratigraphic drilling, diamond drilling, and various ground geophysical surveys. Work completed since 1998 has involved geological re-mapping, airborne EM and magnetics, AEM interpretation using EM-Flow software, soil geochemistry, gradient array IP surveying, diamond drilling, litho-geochemistry on drill core and roadside gravity surveying.

Considerable alteration and sub-economic sulphide mineralization has been discovered over a strike length of 45km at four discrete locations on the property viz. Crinkill, CloghJordan, Clareen and Silvermines North, at one location immediately north of the property (Kinnitty) and at one location between the two licence blocks (Shinrone).

By analogy with Lisheen, Galmoy, Silvermines and Tynagh, the down-thrown, northwestern side of the Knockshigowna fault zone is considered extremely prospective, but remains essentially unexplored. The base-of-reef target horizon lies approximately 300 to 400m below surface. The widespread alteration and sub-economic mineralization discovered by exploration to the southeast of the Knockshigowna Fault Zone, around the flank of the inlier, demonstrates that a large-scale hydrothermal system has operated in this area.

It is recommended that future exploration focus to the northwest of the Knockshigowna Fault zone. At this time, two areas have been identified which, in our opinion, warrant drilling. Both areas are considered analogous, geologically, to Lisheen, Galmoy, Silvermines and Tynagh.

The extensive alteration and sub-economic mineralisation discovered to date to the southeast of the fault zone is considered encouraging, indicating that a large-scale hydrothermal system, similar to that producing the Rathdowney Trend, hosting the Lisheen and Galmoy orebodies, was active in the Shinrone area.

Moate (Zn)

The Moate property comprises six contiguous prospecting licences, PLs 505, 506, 1226, 1228, 1229 and 3722, to the east of Athlone. The Moate licences are located in Counties Westmeath and Offaly.

The Moate Block lies midway between the Tynagh orebody and the Ballinalack prospect, located along a northeast-southwest trending zone, the Tynagh-Ballinalack Trend. This lineament, which is apparent on regional gravity and magnetic plots, is considered indicative of a fundamental basement dislocation, with movements centred on this zone of dislocation occurring throughout the Carboniferous. It is postulated that this zone of dislocation was the principal control for the hydrothermal systems that produced alteration and sulphide mineralisation along the trend.

The principal area for a potential deposit of Tynagh-Ballinalack or Navan type lies between the River Shannon and Mount Temple, on PLs 505, 1228 and 1229, immediately north of the Moyvoughly Fault Zone (MVFZ). Specific Tynagh-type targets within this zone would be facies boundaries between massive reef and reef equivalent (Grey Calp). Target depth is less than 200m. The Pale Beds, host to the Navan orebody, are present throughout most of the Moate property. A comparison between the geology of the Moate property and that of other major Irish deposits indicates the area in the immediate hanging wall of the MVFZ between the River Shannon and Mount Temple should have excellent potential for mineralization within the Pale Beds, 400 to 600m below surface.

Further exploration is recommended, but limited to the target area in the hanging-wall of the MVFZ between the Shannon and Mount Temple. A series of widely spaced drill holes are recommended to further test the Pale beds at Cloonbonny, Carn Park and Mount Temple.

Holycross (Zn)

The Holycross Property consists of two contiguous prospecting licences, 3318 and 3569, in southern County Tipperary, south of the town of Thurles, and with a total area of 44km². The Property is located southwest of the Lisheen Mine, along the extension of the Lisheen Trend. The target on the licence block is for Lisheen-style mineralization associated with dolomite breccias at the base of the Waulsortian Reef Limestone. Previous drilling has intersected zinc-lead mineralization within Lisheen-type dolomite breccias at the base of reef.

The property is located along a regional structural lineament, trending NE-SW and known locally as the Rathdowney Trend. This structural discontinuity can be mapped using regional scale geophysics and is considered to be related to the basement faulting associated with the Caledonian Orogeny. The Rathdowney Trend appears to be the fundamental control on the Lisheen and Galmoy deposits that are located respectively 9km and 18km along strike to the northeast.

The exploration effort on this block has been focused on finding a Waulsortian Reef-hosted Zn/Pb deposit, analogous to Lisheen or Silvermines. A multi-disciplinary approach has been used to focus the exploration effort. Historical work had consisted of geological mapping, limited soil and base of till sampling, short hole stratigraphic drilling and diamond drilling, and a number

of ground geophysical surveys. The most recent work involved geological re-mapping, diamond drilling and lithogeochemical analysis of both historic core and recent drill core.

The exploration completed to date on this block has identified three main regions of interest. The most significant is the low-grade base metal sulphide mineralization intersected by Cominco in drillholes HC5 and HC13. This mineralization was located at the base of the Waulsortian Reef, hosted by Black Matrix Breccia (BMB), and associated with alteration comparable to that at Lisheen. A thin band of massive and jasperoidal haematite, located at the Reef/Argillaceous Bioclastic Limestone contact, was intersected by Cominco in drillhole HC10. This alteration is very similar to the iron formations seen around the Tynagh and Silvermines deposits, and the Crinkill prospect in county Offaly. Similar intensely reddened and recrystallized Reef was intersected by the Noranda drillhole MN-3569-1 located to the east of Thurles town, where the depth to target is considered to be >400m.

This is a region of undoubted potential, given its location on the Rathdowney Trend only a few kilometres along strike from the Lisheen and Galmoy deposits, and warrants additional exploration.

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Mineral Estates (Ireland) Ltd

Loughshinny (Zn)

Mineral Estates (Ireland) Limited has explored eleven contiguous licences in north County Dublin and east County Meath. The land holding has recently been reduced to one licence (PL 3220). The project covers the southeastern part of the (Lower) Palaeozoic Balbriggan Block and the northern margin of the (Carboniferous) Dublin Basin. The licence straddles a major growth fault, which forms the northern boundary of the Dublin Basin proper. North of the growth fault a dominantly shelf facies litho-stratigraphic sequence is developed. South of the fault a more basinal facies is present. Exploration completed has included: compilation of previous exploration data, rock chip geochemical sampling, base of overburden and stream geochemical sampling, VLF EM 16 surveys, a detailed airborne magnetic survey, gravity surveys, very extensive diamond drilling, and biostratigraphic dating and petrographic studies.

Diamond drilling of the main Loughshinny prospect has shown the presence of replacement-style base metal mineralization within the Courceyan

McGuinness Formation, in a geological sequence that is considered to be similar to the Navan deposit. The best intersections are 4.3 metres at 2.09% Zn + Pb at 170m depth (including 0.35 metres at 10.55% Zn + Pb) and, in a separate hole, 2.5m at 1.86% Zn + Pb at 28m depth.

It is considered that this prospect has the potential to host a very significant base metal deposit and a considerable area remains to be drill-tested. A recent litho-geochemical study, involving the analysis of 55 elements from 194 samples from 8 drill holes, concluded that the geochemical patterns are similar to those recognized peripherally to the Navan Deposit.

The litho-geochemical review, carried out by Dr G. Gonzalez, concluded that an economic, barite-rich, Zn-Pb deposit could occur in the McGuinness formation 500-1000m west or southwest of the last hole drilled by Mineral Estates in PL 3220 (99-3220-05).

This latter target, which would be at approximately 150m depth, has not yet been tested. Interestingly, in view of the barite association, the gravity survey shows a slightly anomalous gravity response in this area. Extensive stratigraphic drilling in conjunction with the detailed magnetic surveys, has demonstrated the presence of at least two other target zones, which appear to be of sufficient size potential to host a Navan-sized orebody. Preliminary diamond drilling of these, however, has shown that the Navan-equivalent sequence, if preserved, is likely to be at a depth of around 800 metres. Holes have been drilled and cased to a depth in excess of 600 metres in each prospect.

A drilling programme to further test the Loughshinny Prospect is planned to commence mid year. However Mineral Estates (Ireland) Limited would be willing to allow an incoming joint venture partner to take over management of the project.

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