Newsletter

Mining Heritage Trust of Ireland

No.71 Winter 2015/16

SPECIAL FEATURE

The Tynagh Mine:
A 50th Anniversary Celebration
Nick Coy

Girl Power: The new force in the mining industry
From a report by Jenny Lee

UPDATE

Remediation Works at the Avoca Mines

FORTHCOMING EVENTS

Field Trip to the area around the City of Derry/Londonderry
NAMHO 2016, Dublin
11th IMHC, Linares, Spain, 2016

ACTIVITY REPORTS

Report of Field Trip to the mines of South West Scotland

ISSN 1649-0894

Iontaobhas Oidhreacht Mianadóireachta na hEireann

Dates for your Diary

2016

March 10-12, Raw materials exploitation in prehistory: sourcing, processing and distribution. Faro, Portugal. http://www.rawmaterials2016.com/

March 12-13, Field trip to the area around Derry/Londonderry. For more information, see p. 7.

April 9, Clean-up of a minesite as part of An Taisce's National Spring Clean, Ireland's premier anti-litter programme, which takes place during the whole month of April every year. http://www.nationalspringclean.org/
Details will be forwarded to members via email beforehand.

May 6-11, A celebration of the tinworking landscape of Dartmoor in the European context – prehistory to the 20th century. Tavistock, Devon. http://dtrg.org.uk/

May 12-16, 9th International Flintknapping Symposium, Asparm an der Zaya, Austria. http://exarc.net/events/9th-international-flintknapping-symposium

May 13-15, 11th International Symposium on Archaeological Mining History, Nals, Italy. www.europa-subterranea.eu

9-12 June, Mining History Association Annual Conference, Telluride, Colorado, USA. http://www.mininghistoryassociation.org/

17th-19th June, NAMHO 2016, 'Mining and Social Change', Dublin City University. Our AGM will be held during the NAMHO weekend. See p. 8 for more details

20 June, Post-conference visits to working mines.

21-24 June, Field trip to the region around Sligo.

20-28 August, National Heritage Week. **Please let us know of any planned mining heritage activities in your area and we will advertise these in our spring newsletter (NL72).**

6-11 September, 11th International Mining History Congress, 'Mines: History and Influence in Industrial and Social Development of Mining Communities', Linares, Andalusia, Spain. See p. 9 for more details.

10-11 Sept, European Heritage Open Days (Northern Ireland). http://www.discovernorthernireland.com/niea/ehod.aspx

26-28 Oct, ERIH Annual Conference "European industrial heritage - how to tell the international story". http://www.erih.net/

12 Nov, MHTI Members' Medley, venue tba

Check with organisers of meetings before making any travel bookings in case of change of dates or arrangements. MHTI lists events in good faith but is not responsible for errors or changes made. For MHTI field trips please register your interest, without commitment, so the organiser can keep you informed.

MHTI Members' Business

Mick Carragher is retiring as a Director at this year's AGM, and is not seeking re-election. Mick was first elected to the Board in May 2007.

He organised a very sucessful field trip to the Sligo area (Benbulben and Abbeytown) in May 2008 and was the MHTI's main point of contact with mining engineers and promoted MHTI membership to the mining industry. The Board would like to thank Mick for his work on the MHTI's behalf during his directorship.

We are seeking new directors, so if you would like to join the Board, please don't hesitate to contact one of the serving directors to get your name put forward at the AGM.

Letters to the Editor

I found the account of the attitude of the Department of Communications, Energy and Natural Resources (DCENR) over Avoca, a mixture of surprising and depressingly familiar (Newsletter 70).

It was surprising because, in my limited experience with the DCENR, they had seemed fairly pragmatic (for officialdom). They were quite reasonable about my inquiry to them in 2000 about their policy towards mineral collecting. Essentially it is OK if due consideration is given to landowners, and any sites covered by heritage, wildlife or agriculture legislation. And recently they posted on their website a tolerably sensible (I could quibble about some details) policy towards gold panning.

It was depressingly familiar as it was reminiscent of my battles with Dúchas – the Heritage Service (now the National Parks and Wildlife Service) in 1998 – 2001. A simple request to collect minerals for research purposes from the Glendalough and Glendasan lead mine waste heaps may have been OK with the DCENR but gave Dúchas apoplexy. A protracted exchange followed in which I was insulted with a succession of absurd excuses: it would impact on lichens and micro flora, it would disturb the goats, it would need a licence from the DCENR, real barrel-scraping stuff. I would knock down one pathetic pretext only for them to fob me off with another.

The final straw came when they allowed a film set ("Reign of Fire") to be built on the main mine site in Glendasan, and this was after they told me "the National Park has a policy against commercial exploitation of Park resources" (never my intention)! And it was a rubbish film.

So I photographed the mess and damage, and wrote to the head of Dúchas, and to government minister Sile de Valera, berating the hypocrisy of Dúchas. I was also starting to prepare to go to the press. Dúchas had just been given a drubbing for another instance of brazen hypocrisy –starting to build a heritage centre in the Burren without planning permission in a botanically sensitive area. Perhaps fearful of further bad publicity they abruptly caved in, and permission was granted. MHTI members will have seen my paper in the journal (no. 7), one of three that resulted from the many interesting finds made.

I guess the moral of the saga is not to give in, go above the head of whoever is being obstructive (even go right to the top), and that official bodies may be sensitive to bad publicity. Hopefully it will not come to that with the DCENR, and they may yet be prevailed upon to see sense.

If it helps, as a chemist and mineralogist, I can add my own observations about Avoca. Whilst the mines were notable in the past for a few minerals (particularly naturally formed native copper) these are not in evidence now, but there are still post-mining chalcanthite, native copper growing on scrap iron, and rare antlerite when the latter detaches from the iron and oxidises again. But what the site lacks mineralogically it makes up for geochemically.

Ireland has copper mining sites that vary dramatically in the nature of their secondary, and also post-mining, minerals. Thus limestone-hosted ones (e.g. Tynagh), unsurprisingly are dominated by carbonates, such as malachite. The quartz-sulphide veins of Allihies and Bunmahon are carbonate-poor, and the near pH neutral environments of their mine workings, not swamped by carbonate, are ideal for the formation of rare basic sulphate and chloride minerals, and also the copper-bearing silica-gel deposits so stunningly developed in Tankardstown mine. Avoca is different again. The abundance of rotting pyrite creates a very low pH environment, far too acidic for the minerals seen at other Irish sites. Indeed too acidic for anything but the aforementioned chalcanthite, native copper and antlerite.

The water issuing from the level exposed in the East Avoca open pit provides another lesson in mine geochemistry as the hydrolysis of ferric iron is spectacularly exhibited by the rich ochreous deposits seen there. I am not a microbiologist, but I can't help wondering what extremophiles may be dwelling in this stream of dilute sulphuric acid – another reason to preserve this remarkable site.

Dr Stephen Moreton

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The Avoca Mines Remediation Works, County Wicklow: An Update

Ore bins and spoil heaps, Tigroney Mine
Image: Martin Critchley

The removal of the Avoca Mines spoil heaps from the Record of Protected Structures (RPS) in County Wicklow's Draft County Development Plan 2016-2022, has caused considerable disquiet, write Martin Critchley and Sharron Schwartz

The Mining Heritage Trust of Ireland (MHTI) has submitted observations on the Draft County Development Plan 2016-2022 in relation to the proposed amendments and additions to the County Wicklow RPS and the County Geological Sites (CGS).

The MHTI welcomes the continued inclusion of mining heritage related structures on the RPS and appreciates the efforts of the council officials to describe more comprehensively the mining structures at the Avoca mines. However there are several mining related structures which have not been included in the proposed RPS for 2016-2022 which were described in our submission in detail. Crucially, the MHTI is greatly concerned about the removal of the curtilage and adjacent lands from the draft RPS of the mining related structures at Avoca and we wish to see greater enforcement in relation to structures on the RPS. Finally, we commented on certain County Geological Sites.

Record of Protected Structures - Additions

There are a number of additions which MHTI have proposed should be included on the RPS for County Wicklow:

1. Masonry support structures (stanchions) for an endless wire ropeway which was installed to drive pumps in a shaft at Connary mine (power being supplied by a water turbine installed close to the Avonmore River). The stanchions would have carried metal sheave wheels for the wire rope. Four of the stanchions remain. The system is unique in Ireland.
2. Foot print of inferred mineral assay office at Cronebane. An assay office was a key part of many mines and at Avoca highly important due to the low and variable grades of copper ores. The curtilage of the building includes buried waste products of the assaying process, especially a large volume of clay crucibles. A boundary stone for the mining sett was also found here which is now displayed in the old court house, Avoca.
3. Ochre pits close to Baronets shaft and at Tigroney. These shallow pits would have been used to precipitate iron oxide from mine waters or water discharged from the copper precipitation works. The ochre pits are stone lined and interlinked with diversion channels so that one pit could be drained and the ochre extracted whilst the other(s) were in operation.
4. Engine pool at Connary mine used to store water to feed the boilers of a steam engine. This is an unusual design as it is concrete lined and probably dates from the late C19th. Extant engine pools are rare in Ireland.
5. Precipitation launders at Tigroney. These were used in the late C19th to precipitate copper metal from mine waters using scrap iron. A later installation was erected here in the second half of the C20th. Now mostly covered by mine spoil, parts were exposed during 'landscaping' works by Irish Rail.
6. Ballymoneen engine house which housed a 22.5" rotative steam engine. Overgrown by ivy and is missing the front wall.

Record of Protected Structures – Curtilage and Associated Lands

The MHTI notes that in the current development plan (2010-2016) the various mine sites in the county RPS included the surrounding spoil heaps and, in the case of the Avoca mines (Connary, Tigroney, Ballygahan and Ballymurtagh), the associated disturbed ground. The Planning Act of 2000 allows for the RPS to include a curtilage around structures and can include the protection of structures in associated (but not

contiguous) lands. The RPS for the current draft development plan (2016-2022) has redefined the structures to be protected at the Avoca mines and removed any reference to the spoil and associated disturbed lands. In relation to this, we make the following observations and recommendations.

1). Spoil and disturbed land is a consequence of mining and an integral part of the historic mining landscape. Removing the spoil and disturbed land by, for example, inappropriate remediation methods, would leave any mining structures divorced from their reason for existence and severely damage their visual integrity and cultural authenticity. This is a view not just of the MHTI but is shared by many Government agencies in other countries, especially in the UK, as exemplified by the following quotes:

> There is more to mining archaeology than standing structures. On every one of the sites listed consideration has to be given to surviving earthworks, access to underground features and the potential for subsurface archaeological evidence. Material that acts as the source of contamination, the tailing heaps, is also a part of the archaeological record. In recognising the importance of individual structures, the assessment of any site is based on its integrity as an industrial landscape, in which the parts contribute to the whole. T*he Metal Mine Strategy for Wales* (Howeth, 2002)

> Abandoned metal mines are not only a source of pollution, they are a part of our national heritage and an important reserve of biodiversity. Many sites are designated as Sites of Special Scientific Interest or Scheduled Ancient Monuments. The tin and copper mining areas of Cornwall and West Devon have been declared a UNESCO World Heritage Site. This means that certain treatment methods cannot be employed; however, a collaborative approach may help to deal with the pollution threat. *Abandoned mines and the water environment* (England and Wales Environment Agency 2008)

Another example of the importance of mining landscapes is given by the listing by the Ynys Môns (Anglesey) local authority of the whole of the Parys Mountain mine site in North Wales and as a Landscape Character Area. Parys Mountain is also included on the Register of Landscapes of Outstanding Historic Importance in Wales. Parys Mountain has the same geology and a similar mining legacy to the Avoca mines in County Wicklow, but there the mining spoil and open pits are seen as significant landscape features. Why does Wicklow County Council propose to remove the protection at Avoca whilst other countries clearly do not see mining spoil as a negative factor but as a positive landscape feature for the cultural enrichment of future generations?

The European Landscape convention, to which Ireland is a signatory, recognises the importance, not just of high quality landscapes, but also 'degraded' areas:

> Acknowledging that the landscape is an important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as well as in areas of high quality, in areas recognised as being of outstanding beauty as well as everyday areas; European Landscape Convention 2000.

Furthermore, 'degraded' landscapes are recognised in the National Landscape Strategy for Ireland 2015 – 2025 and are likely to be included in the National Landscape Character Assessment arising from this strategy. In light of the clear support for 'degraded' landscapes both in the European Landscapes Convention and Ireland's National Landscape Strategy, then it would be highly inappropriate for Wicklow County Council to threaten the prime important examples in the county, namely mine sites, by removing the protection given to the spoil and disturbed ground.

2). Wicklow County Council already accepts the importance of mining spoil in the draft County Development Plan (Chapter 10: Heritage, page 205):

> Much evidence remains at each of these sites of former mining activity in the form of engine houses, machinery, adits, spoil heaps and drainage channels

The removal of mining spoil from the RPS would contradict the value of the above statement.

3). Spoil and disturbed land associated with mining are also important natural habitats for both flora and fauna. In many cases the mine sites have not be surveyed in detail but we do know that rare bryophytes are found on several sites. Again, this association is another reason to protect historical mining waste.

4). The use of the county for film locations is important for the economy of County Wicklow. Historic mine sites have been used for a number of films and TV productions, including *St. Patrick*, *Reign of Fire*, *Ballykissangel*, *The Vikings* and *Penny Dreadful*, to name a few. The loss of visually important sites through the removal of the protection of mine waste could result in a loss of income from the film industry.

5). Many historic mine sites in County Wicklow are used by artists and none-more so than the Avoca mines with its vivid palette of red, yellow and orange hues. Examples of artists using this landscape include Dublin-born Stephen Lawlor, who criticises the "ignorance" of state bodies which he claims has put one of the country's most beautiful terrains in "threat of destruction" (*The Sunday Times*, 19 September 2010). The removal of the protection to mine spoil and degraded lands by delisting from the RPS would threaten their use by artists.

6). Historic mine sites could have valuable tourism potential, as exemplified by the geologically similar mine site at Parys Mountain in North Wales. Here the local authority has worked with voluntary stakeholders to establish walking trails and self-guided Apps. The MHTI understands that Wicklow County Council is considering a tourism strategy for the Avoca Mines, but the removal of the protection afforded to the sites by delisting the spoil and disturbed land would

undermine the strategy before it is put in place.

7) There are inconsistencies with the proposed draft RPS, where mining spoil and disturbed land is excluded from the Avoca mines but retained for other mines, such as Glendalough. The MHTI is concerned that the removal of the protection of mine wastes at Avoca could lead to demands from the Department of Communications, Energy and Natural Resources (the owner of many abandoned mine sites in Ireland) for the delisting of mine waste at historic mines across the country with the consequent loss of their protection.

8) Whilst we recognise that in certain circumstances it might be necessary to treat historic mine waste to reduce environmental threats, it must be recognised that mine sites are important 'degraded' landscapes and remedial activities should be sympathetic with their protection where possible. This is best achieved by protecting such sites and allowing for any works on the lands to be assessed under the planning system rather than giving the landowner unrestricted control to do what they like with the sites.

9) Mine spoil tips are a valuable source for minerals, especially secondary minerals resulting from the weathering of sulphide ores. Often spoil tips are the only accessible source of minerals from the mined orebodies and thus are indispensable for many forms of scientific research (geology, mineralogy and physical processes to name a few).

10) We believe that the best way to protect mining heritage in the county is to list the specific mining structures, their curtilage and associated disturbed lands. The MHTI attached an appendix listing with maps of what we consider to be the important mining structures in the county, their curtilage and associated disturbed lands. The MHTI stressed its hope that this list and maps will form the basis of the listing of mining structures on the RPS in the 2016-2022 County Development Plan.

Enforcement of the Protection of structures on the RPS

During the lifetime of the existing County Development Plan (2000-2016) a number of mining structures on the RPS have experienced degradation that threaten their integrity. Examples include the partial collapse of the old crusher house at Baravore; the future loss of the visual integrity of the crusher houses at Baravore due to the planting of trees; the further collapse of stonework on the crusher house at Hero mine, Glendasan, and unauthorised disturbance of protected spoil at Tigroney mine, Avoca.

1) The MHTI notes that there is no policy in the heritage section (Chapter 10) of the draft development plan to enforce the law regarding structures on the RPS, either when damage occurs or structures deteriorate. We believe that there should be a specific policy on this and that the council should be more active in enforcement, especially where structures are in public ownership.

2) Although we recognise that it is probably not feasible to visit each structure on the RPS to assess its condition, some form of periodic inspection might be advisable.

County Geological Sites

The MHTI noted that some of the historic mine sites in County Wicklow have been included on the list of County Geological Sites in the Draft County Development Plan 2016-2022 (Chapter 10: Heritage, schedule 10.10). We welcome the inclusion of these in the list, but we are aware that there is no statutory protection for the CGS. The statement in Appendix 4b (RPS additions and deletions, page 7) in relation to Cronebane and East Avoca pits at the Avoca mines reads:

> The features of interest within the scope of this Protected Structure are those naturally occurring geological features – namely the mineralisation and rock sequences that have been exposed due to the mining operations in the area. These features are included as a County Geological Site in the CDP and afforded more appropriate protection.

1) In light of the non-statutory basis of the CGS we fail to see how the removal the Cronebane and East Avoca pits from the RPS would afford more protection. Because of the importance of these two pits to the mining structures on the RPS at Avoca, we believe that the best protection will be afforded by retaining them as associated lands on the RPS.

2) Some mining geological sites on the CGS have been recommended as candidate Geological Natural Heritage Areas (namely Hero Mine at Glendasan and the Glendalough mines). This information is contained in the geological audit report (*The Geological Heritage of Wicklow: An audit of County Geological Sites in Wicklow* by Meehan *et al*. 2014).

The recommendations of candidate Geological Natural Heritage Areas is not given in Chapter 10 of the draft development plan – we believe they should be. The Avoca mines collectively should be a candidate Geological Natural Heritage Area (presently only listed as a CGS) for the following reasons:

- The most extensive mine site in Ireland
- Unique exposures of volcanogenic sulphide mineralisation and excellent site for geological research
- Site of many rare minerals; including Kilmacoite ("silver-blende" or " bluestone"), a combination of silver, lead, and zinc ores
- Excellent cross section of supergene or gossan zone of oxidised orebody; the best example in Ireland
- High probability of rare acid loving extremophile lifeforms in the underground workings. These lifeforms are valuable species for research in connection with the development of life on Earth and on other planets.

3) Finally, we suggested two amendments: For Glenmalure, add Baravore mine, the best preserved mining crusher houses in the country and at Sroughmore, there are 4 concrete wire support stanchions (not 2 as stated).

Events and Notices

Field Trip to the area around the City of Derry/Londonderry
Saturday 12 – Sunday 13 March 2016

This field trip will examine mines, quarries and related features within a 32km radius of Derry. The development of the City from 1613 by The Honourable The Irish Society, and others, required building materials. During the field trip we will look at quarries and related infrastructure for supplying bricks, building stone, limestone and slate. During the industrial revolution the area was prospected for coal and metalliferous minerals, resulting in the discovery of lead mines at Strabane and Glentogher. Strabane Mine was worked to a small extent in 1767-1770. Glentogher was worked around 1790, in the 1850s, and in the period 1905-1908.

Coordinator
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In case of any changes to the programme, please let the coordinator know if you are interested in attending.

Programme
Saturday 12 March
Meet at 10:00 in the free car park by the former Foyle Valley Railway Museum on Foyle Road, Derry, just south of the Craigavon Bridge. Clongash Limekilns, Buncrana (C 375 319, Discovery sheet 3). Glentogher Mine, Carndonagh (478 377). Drung Quarry, Quigley's Point (515 377). Gortree Quarry, Drumahoe (C 482 163 Discoverer sheet 7). Prehen Quarry, Prehen Park (423 148). Please bring a packed lunch.

Sunday 13 March
10:00 meet as above. Quarries on Dooish Mountain, St Johnstown (C 312 126, Discovery sheet 7). Glentown Quarry (311 097) and related sites. Glenfad Quarry, limekilns and related sites, Porthall (344 025). Strabane Mine (H 351 967, Discovery sheet 12). Please bring a packed lunch.

Equipment
Members are requested to bring warm clothing, waterproofs and wellies. Waders would be handy. If going underground, wetsuits or drysuits, helmets, and electric lamps are recommended.

Bibliography
Anon, 2000. Prehen Quarry. *Earth Science Conservation Review*, Ulster Museum. http://www.habitas.org.uk/escr/site.asp?item=153 (Click on radio button for Full report).

Legg, I.C., Pyne J.F., Nolan, C., McArdle, P., Flegg, A.C., O'Connor, P.J., 1985. *Mineral localities in the Dalradian and associated igneous rocks of County Donegal, Republic of Ireland, and of Northern Ireland*. Geological Survey of Ireland, Report Series 85/3. 87pp, 4 maps. https://secure.dcenr.gov.ie/goldmine/index.html (Search for Legg).

Stanley, G., Gallagher, V., Ni Mhairtin, F., Brogan, J., Lally, P., Doyle, E. And Farrell, L., 2009. *Historic mine sites- inventory and risk classification.* Vol 1: Geochemical characterisation and environmental matters. Environmental Protection Agency & Geological Survey of Ireland. 160pp, 6 appendices. Appendix 5 site reports - Donegal Mines, Glentogher Report: http://gis.epa.ie/GetData/Download

St Johnston and Carrigans Family Resource Centre. Glentown Quarry History: http://www.stjohnstonandcarrigans.com/quarryhistory.html

National Inventory of Architectural Heritage. Clonglash, Co. Donegal: http://buildingsofireland.ie/niah/search.jsp?type=record&county=DG&regno=40902933

Nawaz, R. and Moles, N.R., 2001. Milltown lead mine, Strabane. *Earth Science Conservation Review*, Ulster Museum. http://www.habitas.org.uk/escr/site.asp?item=544 (Click on button for Full report).

Old, R.A., 1974. The Strabane lead mine, Co. Tyrone. Irish *Naturalists' Journal*, Vol.18, No.2, p41-43.

Accommodation
A wide range of accommodation is available in Derry, for example:

The Saddlers House, 36 Great James Street, +44 (0) 28 7126 9691, http://www.thesaddlershouse.com/index.html
Derry Travelodge, 22-24 Strand Road, +44 (0) 28 7127 1271, https://www.travelodge.co.uk/hotels/225/Derry-hotel
Other accommodation is listed on:
http://www.booking.com/index.en-gb.html
http://www.discovernorthernireland.com/


Lime Kiln at Glenfad Quarry, Porthall
Image: Alastair Lings

The 2016 NAMHO Conference is being hosted by the MHTI to coincide with our 20th anniversary and the 1916 centenary celebrations. The meeting will be based at Dublin City University, which is handy for the airport in the north of the city. As this coincides with our 20th anniversary, we hope that MHTI members will wholeheartedly support this conference which will be an opportunity to showcase the good work undertaken by the MHTI over the last two decades.

Registration will open late Friday afternoon. In the evening the conference will be formally opened and there will be two lectures by keynote speakers on mining in Ireland and 20 years of the MHTI, followed by a buffet dinner.

On Saturday (18th) there will be a day of lectures followed by our AGM. The conference dinner will be held in the evening followed by musical entertainment.

On Sunday (19th) we have organised field trips to the copper mines of Avoca, Wicklow, which have been much in the news lately due to condolidation works, and the silver-lead mines of the Wicklow Uplands, where recent research and survey work has made major new discoveries.

Post conference (Monday 20th) we hope to be able to offer visits organised to working mines, but there will be a very limited number of spaces available. Information will be made available for those wishing to travel to and explore, other mining areas in Ireland. Abstracts for papers (300 words) are sought on the theme of *Mining and Social Change* which include the following topics:

- Regional identities
- Migration
- Urbanisation
- Industrial housing
- Education
- Gender and the mining industry
- Self improvement societies/social philantrophy
- Sport and leisure
- Industrial action
- Mines and quarries during the Troubles
- Changing attitudes in favour or against mining

The deadline for abstracts is Friday 26 February 2016.
Please send these to Sharron Schwartz: sschwartz@era.ie.

Details of how to register for the conference will be made available online in due course. You are responsible for booking your own accommodation. We recommend Dublin City University: http://dcusummeraccommodation.ie/

A full programme will be included in our next newsletter.

11th International Mining History Congress, Linares, Andalusia, Spain, 6-11 September 2016

Pozo Ancho
Image: Sharron Schwartz

The International Mining History Congress (IMHC) is an event to encourage and coordinate the functioning of periodic international meetings where persons and organisations wishing to promote mining history can gather to discuss matters of common interest.

Previous congresses have been held in historic mining areas of Germany, Japan, USA, Australia, Greece, Cornwall, Mexico, India and South Africa and have facilitated wide networking among mining history enthusiasts on all continents.

The Colectivo Proyecto Arrayanes, a nonprofit voluntary organisation devoted to the conservation and valorisation of mining heritage, prepared a formal application to develop the next congress in the Linares – La Carolina lead mining district, and has been entrusted by the International Committee to organise the event with the support of the Linares Town Council from 6th-11th September 2016.

Mining, as one of the most ancient industries, has shaped cultural landscapes and influenced the evolution of civilisations in many parts of the world. Human settlements, traditions, cultures, beliefs, economic and social systems have been characterised by the impact of mining throughout history.

The theme of the 11th Congress is ***Mines: History and Influence in Industrial and Social Development of Mining Communities***. Papers are welcome on all aspects of mining history and will be included in following themed groups:

- Growth and decline of mining activity. Impacts of mining history on past, recent and future generations
- Relationship between the development of mining, and mining related, industry and technology
- Gender topics in mining activity through the centuries
- Mining heritage as a resource for cultural, social and economic development (including tourism)
- Mining history in the light of human, landscape and industrial aspects
- The evolution of Health and Safety legislation with respect to mining
- Mining personalities
- Labour issues and its bearing on the success of mining operations
- The relevance of foreign investment and the introduction of new technology for mining development
- Mining – a linkage between the cultures

Described as Spain's best kept secret, the breadth of industrial monuments and heritage features in the Linares-La Carolina lead mining region is astounding and trips will be run to various sites during the congress. A visit to the Alhambra Palace UNESCO World Heritage Site in Granada is also being offered. Please note that the organising committee have extended the early registration deadline (with reduced rate) until 29th February 2016. The deadline for the submission of paper abstracts is Monday 28th March 2016 with a final deadline for submission of full papers on Friday 29th July 2016. The deadline for standard registration is Friday 15th July 2016. Accommodation in particular is filling up very fast and we would encourage you to book this at your earliest convenience.

Report on the Field Trip to South-West Scotland 5-6 September 2015

Spoil heap in the Mennock Valley
Image: John Hopkinson

Blessed with excellent weather, MHTI members toured the Wanlockhead/ Leadhills area where lead mining dates back to Roman times and also visited the coal mines of the Sanquhar Coalfield and limestone mines in the wider area, writes Alastair Lings

This field trip was originally intended to focus on the Wanlockhead/Leadhills mining district, but was expanded to include nearby coal and limestone mines. The field trip was based at Sanquhar and we were blessed with good weather.

On the Saturday we toured around the Wanlockhead/ Leadhills area looking at mine workings, processing sites and water supplies. Our first stop was on the way up the Mennock Pass to look at alluvial gold workings in the gravels by the Mennock Water. The earliest recorded mining in the area was in 1511 with the period 1500-1650 probably being the main period of gold production. The alluvial gold in the area typically contains 10-12% silver with little or no copper or mercury, and has inclusions of sulphides and sulpharsenides.

Further up the valley we visited the site where gold-bearing ore was probably crushed and processed, at the junction of the Whitestone Cleuch and the Mennock Water. A sluice gate found at the site is in the Museum of Lead Mining in Wanlockhead.

Chemical analysis of a peat core suggests that lead may have been worked in the late bronze age and early iron age, but probably not in Roman times. The main phases of working were in the period 5-7th centuries AD, 9-11th centuries and in the late 18th to early 20th Century. In 1885, it was recorded that the exploration for lead, gold, and other minerals at Leadhills and Wanlockhead has been carried on for a long period of time. There were once found in old surface workings in both places the tools used in excavating the lead ore, some of the picks being of stone and others of bronze, showing that these mines had been worked at a very early period of history, probably in pre-Roman days.

The earliest record of lead mining in the area is in 1239 when the monks of Newbattle Abbey obtained a charter to work a mine on Crawford Moor. Mining continued intermittently until 1934, with the final phase of mining being 1954-1958.

Water power was used from the early days of mining but unfortunately the resources were scarce due to the altitude of Wanlockhead and Leadhills, and the deeply weathered and broken bedrock. Systems of leats and reservoirs were constructed, and two tunnels. The Mennock Hass tunnel was driven a distance of 1266 yards (1158 m) from 1763-1774, to take water from the Mennock under the watershed to Wanlockhead.

The northern portal of the tunnel is close to the Mining Museum in Wanlockhead. We set out to find the southern end of the tunnel, to the east of the B797 road, but were unable to locate it. Our best estimate of the position of the entrance was 1101 m away from outlet, using GPS equipment, so we may have been very close to the portal.

On the west side of the road is another tunnel that carried water from the upper reaches of the Glenclach Burn for 350 m through the hillside to a leat above the Mennock, and thence to Wanlockhead. This may have been the level that was driven in 1823 from the Mennock Hass under the Black Hill to cut the south end of the Old Glencrieff vein.

After a quick cuppa at the Mining Museum we headed north to Leadhills. First we viewed the Curfew Bell which announced

Coal conveyor on the east side of Craigdullyeart Hill
Image: John Hopkinson

shift changes in the mines, and dates from 1770. Next we admired the monument to William Symington (1764-1831) who developed the world's first practical steamboat. The Leadhills Miners' Library was founded in 1741, and it moved to its present location in 1821. It holds over 3100 books, many from before 1850, as well as mineral specimens and items of local interest.

To complete the day we looked at mine entrances and ore processing sites north of Leadhills, including Gripps Level and New Horse Level. In a lovely evening we returned to Sanquhar and enjoyed a meal in the Nithsdale Hotel.

On the Sunday we explored the remains of coal mines in the Sanquhar Coalfield, and limestone mines in the wider area. Coal is first mentioned in documents during the reign of Malcolm IV (1153-1165), and monastic charters from about 1200 refer to systematic working. The last deep coal mine in Scotland shut in 2002. We headed west past the conical waste bing of Gateside Colliery (1891-1964), known as the Sanquhar Alps. Our first stop was at Tower Mine (1916-1964), where the baths are being restored, with care and respect, to become a house.

In Kirkconnel we visited a memorial to the men who died in Fauldhead Mine (1896-1968) and then visited the impressive remains of the baths, which were opened in 1933, and adjacent buildings. Continuing west we looked at the baths at Rig Mine (1948-1966).

Near the site of Knockshinnoch Castle Mine (1940-1968) we visited the memorial to the 13 men who died during an inrush of peat in 1950. The inrush trapped 116 men who were rescued through the gas filled workings of an adjacent abandoned mine. The rescue was dramatised in the film "The brave don't cry" (1952).

We took the opportunity to get a distant view of Greenburn surface coal mine, operated by Kier Mining, before heading eastwards. In 2007 ATH Resources completed a 13 km conveyor belt to take coal from Glenmuckloch Opencast, neat Kirkconnel, over the hills to the railway at New Cumnock. At the time it was probably the longest conveyor in Europe. Sadly it was vandalised and is now disused. We visited the conveyor on the east side of Craigdullyeart Hill, and admired a pair of limekilns nearby.

In this area limestone was first burned with coal in about 1750. On the south side of Craigdullyeart is another range of kilns and some underground limestone quarries. The quarries worked a seam about 4 m thick, at an angle of 10-15^0. The quarries were not working in 1947. There has been some dumping in the quarries, but they are still worth visiting. We returned to Sanquhar for a welcome cuppa and then headed 25 km south to our last stop of the day at the Barjarg dolomite mines, near Thornhill.

Miners' Library, Leadhills
Image: John Hopkinson

Quarrying probably started in 1788, but there was no mining before 1828. The mine is recorded in the reports of the Inspectors of Mines during the period 1877-1887. In 1895 the owner was reported as pleading guilty to a charge of failing "to send notice of an accident whereby a miner was injured by an explosion of gunpowder while illegally stemming shot with an iron stemmer". The mines are drained by a flooded adit and are quite extensive. In 1973 a waterwheel and associated pumps was removed from the mine and these are now held by the National Museum of Scotland.

Barjarg was our final stop of the weekend. After returning to daylight we said our farewells and went our separate ways.

The MHTI is very grateful to John Hopkinson for the use of his photographs, and to landowners for allowing access to their properties during the field trip.

SPECIAL FEATURE
The Tynagh Mine: A 50th Anniversary Celebration

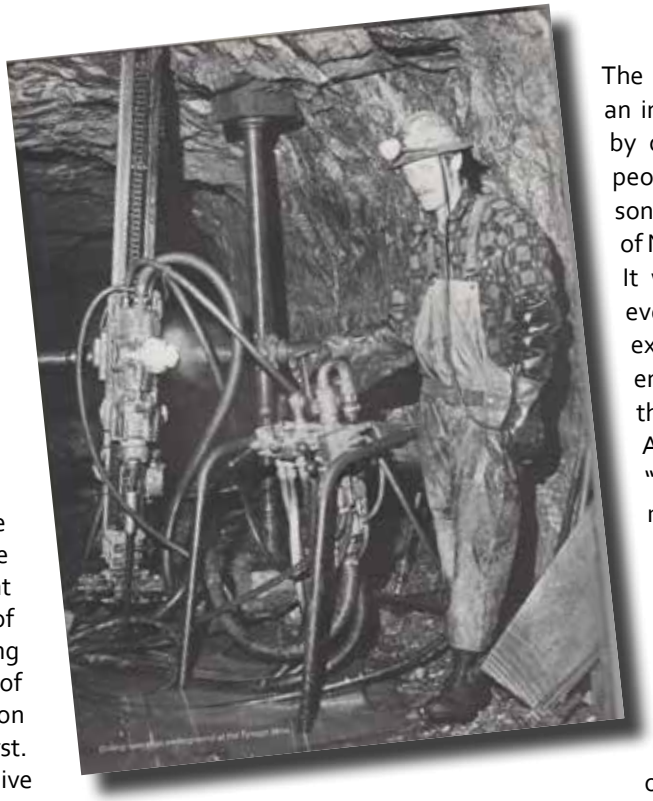
Taoiseach Sean Lemass and Pat Hughes set off the opening blast at Tynagh

Former employees from as far away as Australia gathered at the Loughrea Hotel to celebrate the 50th anniversary of the opening of Tynagh Mine, Co. Galway. Attendees enjoyed live demonstrations of Diamond Drilling, a series of talks and a gala dinner. However, a visit to the mine site wasn't possible, as post closure environmental remediation works means there is little left to see, a fate that could well befall some of our historic mine sites, writes Nick Coy

In 1961, the Tynagh orebody was discovered in the Townland of Carhoon in East Galway. The discovery by Irish base Metals Limited, a subsidiary of Northgate Exploration, was the first new major Irish mineral deposit to be discovered in the 20th century. On the 22nd of October 1965 the mine was formally opened by An Taoiseach, Sean Lemass T.D.

The discovery and development of Tynagh was the catalyst for the establishment of a major mineral exploration industry in the country, which in turn led to the discovery of a number of other new ore bodies at Gortdrum, Navan, Galmoy and Lisheen. By the end of the 20th century, Ireland was one of the major European producers of Zinc and Lead.

To commemorate the 50th anniversary of the opening of the Tynagh Mine, the Irish Association for Economic Geology (IAEG) The Irish Mining and Quarrying Society (IMQS), The Institute of Geologists of Ireland (IGI), The Geological Survey of Ireland (GSI) and The Department of Communications, Energy and Natural Resources, got together to organise a celebration. The event took place in The Loughrea Hotel on 29th-30th January 2016.



On Friday 29th, delegates visited the premises of Priority Drilling Limited at Ramore near Killimor, where recent exploration drill core from the mine was on display. This drilling had been carried out in 2014 by Tynagh Iron Mines Limited, to investigate the Tynagh Iron Formation. The work was "aimed at justifying the economic viability of re-opening the mine, using the previous underground mine infrastructure to access the Base Metal and Haematite mineralisation that lies adjacent to, below and to the north of the previous base metal mining activity". An interpretation of the drill core and mineralisation was given by Dr.John Colthurst. There was also an interesting live demonstration of Diamond Drilling set up nearby and all those attending the event were later wined and dined courtesy of Michael Mc Carthy and Priority Drilling Ltd.

On Saturday 30th, about 150 delegates attended the Conference in the Loughrea Hotel. The opening talk, on the geology of the Tynagh ore body, was given by John Colthurst. His presentation was followed by Robin Oram, who had been a Mining Engineer at Tynagh in its early development years. He gave a fascinating insight into the technical and engineering aspects of mining the initial open pit secondary ore with its complex mineralogy and later the underground development.

In the afternoon, an entertaining and informative presentation was given by John Teeling, well known in the minerals industry, having a number of active exploration companies both in Ireland and abroad. John explained the effects of the Tynagh discovery, in what was then a very rural and agricultural environment, the complexities of funding a new mine and its impact beyond the stone walls of Galway. His inimitable style of presentation, laced with humour, created an air of levity one does not normally associate with "technical" talks.

The next presentation was given by John Kearney, a former Director of Irish Base Metals, who outlined the background to the discovery and the people who made it happen. The final presentation of the day was given by Dan Shields. Dan had studied the social effects of the mine in the local area after the mine's closure in 1980. Some members of the audience were surprised by Dan's analysis of the varied opinions and experiences of former mine employees. However, anyone who is familiar with the views and opinions of people in post mining areas around the world, would not have been so surprised by his findings.

The evening was rounded off with an impressive gala dinner attended by over 100 guests. A number of people, including Michael Hughes, son of Pat Hughes, former President of Northgate, spoke after the meal. It was generally agreed that the event has surpassed everyone's expectations, with some former employees having come to the event from as far afield as Australia. As much as being a "technical" conference it was a reunion for former employees and family members, many of whom had not seen each other since the mine's closure. Among the many distinguished guests was Dr. Richard W. Schultz who was among the first to interpret the geology of Tynagh in the 1960's and Dave Fitzgerald, a former Mine Manager.

EPILOGUE (or lessons to be learned)

For mining historians the Tynagh event highlights one worrying aspect of "modern" mining history. While the conference was largely organised around technical and social history talks, photographs and memories, there was no planned visit to the old mine site. The simple reason being that there is nothing of any significance of the old Tynagh Mine left to see. A tailings pond, a flooded pit and some grassed spoil heaps are all that remain. A modern 400 megawatt gas powered electricity generating station occupies the spot where the mine mill and flotation plant formerly stood. This obliteration of the Tynagh mine site, will also be replicated at Galmoy and Lisheen mines, which will suffer the same fate.

In this context, the current and proposed "rehabilitation" of the Avoca Mine site could have a similar effect. Why mine sites have the distinction of being essentially "clear felled", when their working life is over, contrasts with old Mills, Tower Houses, Monastic ruins etc., all of which have also outlived their original usefulness, being considered heritage sites and untouchable. Members of the MHTI may have little influence on the demise of our modern mines, as much of the driving force for "environmental rehabilitation" comes from Brussels. We can still try to put a stop to what is happening in Avoca, which is probably the last significant mine site worth a visit in Ireland. What has happened at Tynagh should be a wake up call for all of us. Unfortunately the powers that be at government level do not share the view of a famous landscape historian who wrote – "Abandoned mine sites are in no way ugly but profess a profound melancholic beauty".

Girl Power:
The new force in the mining industry

Ruth Blackburn, Orla McKenna, Michelle Calderon, Nikki Commodore and Angela Coney are members of Europe's first all-female mine rescue team based at Dalradian Resources Inc's Curraghinalt Mine, County Tyrone. From a report by Jenny Lee

For hundreds of years there have been stories of the discovery of gold in the streams of the Sperrin Mountains of Northern Ireland. In his *Natural History of Ireland*, Gerard Boate wrote in 1657 of nuggets found in the Moyola River, north east of Curraghinalt. But it seems that far from being old wives stories, there really is 'gold in them thar hills' in significant quantities. And a group of intrepid women are at the forefront of Ireland's latest gold rush.

With millions of pounds of international investment, the prospect of a gold-mining industry in the north is very real, with two separate developments under way. In one, Canadian mining company Galantas has secured planning permission to develop Ireland's first underground gold mine at the location of it's previous open-pit mine, near Omagh.

Meanwhile the Curraghinalt mine, in the Sperrin Mountains, near Gortin, another Canadian firm is exploring what is expected to be the largest deposit of gold to be found in these islands. According to mining company Dalradian Resources Inc (DR), the gold here, at Curragninalt, ranks as one of the top undeveloped deposits worldwide.

The firm has already spent £50 million on the project, with a further £23m exploration and development programme under way to support submission of a planning application during 2016 to mine at Curraghinalt. Around 3.5 million ounces of gold had been identified by DR – enough, the firm says, to sustain the local industry for 18 years. They have vowed to turn the region into a mining centre of excellence. Work at the site by Dalradian has included drilling, logging and an underground exploration programme, involving almost a kilometer of tunnel extension, 3km of additional drilling and sampling and an environmental impact assessment.

"Just as you don't immediately think Northern Ireland when you hear the term gold mining, you don't think women when it comes to mine workers – and especially mine rescuers" notes journalist, Jenny Lee.

Mining is an industry which has always been male-dominated, regardless of geographical location. There have been positive steps which have helped to integrate women into the industry, but females continue to be under-represented and mining is still largely a man's domain. The study, *Mining for Talent*, published early in 2013 and conducted by Women in Mining (UK) and Price-Waterhouse Coopers, stated that the mining industry has the lowest number of women on company boards of any industry group worldwide.

A recent Australian survey found that only 9 per cent of full-time workers in the mining industry are women. This

is understandable as historically mining required physical strength but with technological advances, the skills needed in the mining sector today have changed dramatically.

South Africa is one of the countries leading the way regarding female employment in the mining sector. The country, through its policies, has been working to rectify the injustices of its past by helping those who have historically been at a disadvantage. Up until the 1990s, legislation meant that women were not permitted to work underground in South Africa. This all changed, and in 2002 the South African Mining Charter introduced quotas urging mining companies to employ a 10% female staff quota (where it was just 2% in the year 2000). At the *Women in Mining Conference* in Johannesburg, held in August 2015, Mineral Resources Minister Advocate, Ngoako Ramatlhodi, addressed occupational challenges faced by women in the mining industry, including safety and security, and encouraged the industry to advance women's rights and equal participation in the economy. "Women should fully participate in this important sector that has the potential to grow South Africa's economy and thus improve the lives of all," Minister Ramatlhodi said.

With an aging mining workforce, especially in powerhouse mining countries like Canada and Australia, inclusion of diverse groups into the mining industry is imperative for its success. And today's women have the skills and experience required. The Australian report found that most of those women working in mining would actively encourage more females to take up a career in the industry.

Two women who strongly agree with this are DR employees, Angela Coney and Orla McKenna. They are members of the first all-female mine rescue team in Europe based at the Curraghinalt Mine, alongside Ruth Blackburn, Michelle Calderon and Nikki Commodore.

Safety is paramount and DR has a total of 21 staff trained in mine rescue requirements. Each rescue team, consisting of five members, is trained to respond in the unlikely event of an emergency situation underground. The team receives training on average once every 12 weeks, practising emergency responses to simulation exercises and first-aid skills. They also have to keep themselves reasonably fit in order to be able to carry 16kg of oxygen equipment on their backs.

"I thought that I wouldn't be physically able to do this role but the training and live simulations have shattered my preconceptions"

For Angela Coney, a native of Carrickmore who works in the human resources team at DR, joining the mine rescue team was an unforeseen opportunity for her career. "I thought initially that mining would be male dominated but I've found out that this is not the case. For example, two of our senior managers are women. I am extremely proud to be part of the mine rescue team. I thought that I wouldn't be physically able to do this role but the training and live simulations have shattered all those preconceptions."

Fellow mine rescue team member Orla McKenna is a geologist with DR and is involved in regional exploration and geo-chemical sampling. "My time is split between the office and the field, where we remove and test the rock. It depends on weather conditions," says Orla, who didn't envisage working in mining when she began studying general science at university in Dublin. However, she went on to specialise in geology and was delighted to be able to secure employment in Ireland.

"The traditional image of the hard hat and cap lamp will always exist because of the environment we work in, but mining is now mechanised and women work in mines all over the world. My job suits people who like the outdoors and my advice to others is follow your interests and don't let stereotypes put you off," says Orla. It's great to see a mining company operating in Ireland at the forefront of gender equality.

Adapted from an article in the *Irish News*, 28 December, 2015

Trainee mine managers in South Africa
Image: Global Mining

Irish News and Publications

Proposals to secure stability of Kilroot salt mine (3/12/2015)

Plans aimed at securing the long-term stability of Kilroot salt mine are to be submitted to Mid and East Antrim Borough Council.

The Irish Salt Mining and Exploration Company (ISME) has revealed proposals for an underground Air Pollution Control residue (APCr) recovery facility. The project would see APCr – a by-product of incineration at Energy from Waste facilities– used to infill parts of the mine. The method has been used to support the void spaces of underground salt mines in Germany for over 20 years. And ISME believes using APCr to replace existing grouting materials such as cement would help secure the long-term safety and stabilty of the Kilroot mine, which extends north towards Ballycarry.

There are currently no APCr recovery facilities on the island of Ireland, and there is only one Energy from Waste facility, which is located in Co Meath. This generates about 10,000 tonnes of APCr each year, which is exported to mainland Europe for recovery in salt mines. ISME estimates the proposed facility at Kilroot could take up to 50,000 tonnes of APCr per year.

A pre-planning document, published on behalf of the company by consultants SLR, states: 'Prior to transporting to the ISME recovery facility, the APCr is to be pre-treated offsite by mixing with water and placing the material in bags. The bagged APCr will be transported to Kilroot by road, with one truck delivering material to the site every hour'. It is proposed the facility would operate from Monday to Saturday, 7am-5pm.

The company has also claimed there will be no nuisance through noise and odours beyond the site boundary, as the principal recovery operations are to be conducted underground.

ISME project manager, Jason Hopps stated: 'It is ISME's duty to maintain the long-term stability of the mine and hand it back to the Department of Enterprise, Trade and Investment in a safe and stable condition…. Salt mines are highly suitable environments for containing APCr, so adopting the German approach to APCr management will have a positive impact on the long-term stability of the Kilroot mine.'

ISME has claimed the facility would provide employment for 4- 10 people. Meanwhile, Ballycarry residents have said they want more answers regarding the proposals. 'There are a number of other fears surrounding this project, and what we really want at this stage is further information.'

http://www.larnetimes.co.uk/news/larne-news/proposals-to-secure-stability-of-kilroot-salt-mine-1-7096140

Vedanta marks final shipment from Lisheen Mine (25/1/2016)

Vedanta Resources' Lisheen Mine marked its final shipment of zinc on Thursday 21 January 2016. Mining activity at the Lisheen Mine was concluded in November 2015, whilst milling ceased in December 2015, after 17 years of operation.

"Lisheen has made a hugely valuable contribution to Vedanta and has also made a very positive impact to the local and national economy, bringing significant employment opportunities to the area," said Deshnee Naidoo, CEO, Vedanta Zinc International. "Over the life of the mine, Vedanta has remained committed to optimising its continuous development objective, aided by a strong and dedicated team of workers and stakeholders. I would like to thank our employees - past and present, the community, the Government and all our other stakeholders. They have supported our commitment to closing the mine in line with 'best in class' environmental standards in a safe, responsible and sustainable manner, with active community participation," she added.

"Our priority is not just the physical closure of the mine, but also the aftercare of the site to ensure that it is a long-term success. We made a commitment to our stakeholders to leave the site in a safe condition that will allow productive use of the land, and a detailed and fully-costed Closure, Restoration and Aftercare Management Plan is already underway," said Alan Buckley, General Manager at Lisheen. "Wherever possible, we will strive to build a sustaining economy in the surrounding region to ensure that a positive legacy remains now that the mine's operations have ceased," he added.

"I would like to commend the genuine commitment of Vedanta and the Lisheen Management to the workforce and the wider local community. Intensive efforts have been made to plan for post closure investment and employment at the site, by harnessing the support of local and national government," said Liz O'Donnell, former government minister and the Chairman of the Lisheen Mine Task Force, established in 2013 comprising internal and external advisors and members of the Irish Industrial Development Authority. Its aim is to facilitate and promote post closure opportunities and it is actively pursuing a number of initiatives, such as the establishment of a Green Energy Hub/Bio economy Campus at the site.

The Lisheen Mine consisted of an underground mine, concentrator and backfill plant, and typically produced 300,000 tonnes of zinc concentrate and 38,000 tonnes of lead concentrate every year. Over its life, 22.4 million tonnes of ore was mined at Lisheen, at an average grade of 11.63 % zinc and 1.96 % lead.

Vedenta News Release: http://phx.corporate-ir.net/phoenix.zhtml?c=175137&p=irol-newsArticle_Print&ID=2131782

Tyrone residents voice fears over cyanide plant (5/2/2016)

Further meetings are planned by residents in Co. Tyrone amid concerns over the prospect of cyanide being used at a gold mine. Dalradian Gold Ltd. confirmed it intends to use the highly toxic chemical at a planned processing plant to extract gold from ore mined in the Sperrin Mountains. News of the controversial plan has alarmed some local people and up to 200 attended a public meeting in Greencastle, near Omagh. Around 500 people have also signed a petition opposing the plan.

Dalradian first moved into the area in 2010 in search of gold in the hills between Greencastle and the village of Gortin, where it has an office. The area has been identified as one of the top undeveloped gold deposits by grade in the world and the company has spoken of the potential for local employment. Underground exploration began in 2014 and now the Canadian firm wants to locate a mine and processing plant within an Area of Outstanding Natural Beauty at Crockanboy Road, just outside Greencastle.

In recent years residents have voiced concern about the potential impact the mining project may have on the environment. Cormac McAleer from the Save Our Sperrins campaign group said many people are opposed to the plan. 'Local people are waiting with some dread about the actual detail of the Dalradian proposal to be finalised,' he said. 'In the meantime people want to see the interests of the local population and environment come ahead of the profits of the Canadians.' Mr McAleer described the proposed processing plant as a 'monstrosity'. He added that the concerns go beyond the potential use of cyanide and include the impact of dust and noise on people living in the district. Cyanide is typically used to separate gold from ore, but accidents have the potential to cause enormous damage to wildlife if the chemical enters waterways.

Dalradian has recently held several meetings with residents in Greencastle, Gortin and the hamlet of Rousky, which sits between the two, to outline their plans. Under planning laws it is required to carry out consultation prior to submitting an application, which the firm expects to be lodged in the autumn. Cyanide is used in many other industrial processes such as plastics, adhesives, fire retardants, cosmetics, pharmaceuticals, paints, computer electronics and food processing. 'Cyanide is one of the most highly regulated substances in the world. Every aspect of its use, transport, storage and destruction is tightly controlled by UK regulations,' noted a spokesperson for Dalradian, adding, 'the processing plant will be low lying in design and we will minimise potential impacts to the surrounding river and to priority habitats and protected species... Gold mining involves the use of cyanide which is the industry standard method for gold extraction worldwide, including in EU countries such as Finland'.

http://www.irishnews.com/news/2016/02/05/news/tyrone-residents-voice-fears-over-cyanide-gold-mine-plan-407011/

Hydro electric power station for Silvermines (11/1/2016)

A proposed €650 million hydro-electric plant, one of the largest infrastructural projects in the State's history has been announced in Nenagh, Co. Tipperary. The 360MW Silvermines Hydro Electric Power Station will create 400 construction jobs and 50 permanent jobs. The partnership aiming to build the zero-emission plant includes Irish developer, Siga Hydro, Irish construction company, Roadbridge and Austrian construction and technology companies, Strabag Group and Andritz Hydro.

Silvermines was chosen because of its mountainous location, the existence of an existing 70-metre deep reservoir dating to its mining days and its proximity to the existing electricity network. The 'great thing' about the project is that it will turn a 'negative' - the abandoned mining site - into a 'positive', according to Minister for the Environment, Alan Kelly. Project Director, Darren Quinn, of Siga Hydro, added, 'This is a once-off opportunity to help remediate and clean up this giant abandoned mining site by creating a new land use, something that will benefit the entire nation'. The project's value to the nation is in the region of €2.5 billion and enough power will be created to supply 200,000 homes. The project will involve the decontamination of water in the existing reservoir and includes the construction of a new, second reservoir on the site. Eventually, 2.5 billion litres of water will be used in a closed system. Because of the scale of the plan, it will go straight to An Bórd Pleanála. The planning process is expected to start later this year and take up to 2 years to complete, with construction earmarked for a further 4 years. Concerns raised to date mainly centre on the abandoned nature of the mining site which has not been used since 1993. Backers stress their committment to fully engage with the local communities and vital stakeholders.

http://www.irishtimes.com/business/energy-and-resources/hydro-electric-power-station-to-be-developed-in-co-tipperary-1.2492364

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Other News

Rio Doce not so sweet anymore? (9/1/2016)

Satellite imagery has prompted Samarco Mineração S.A. a joint venture between Anglo-Australian BHP Billiton and Brazilian multinational, Vale, which operates the Samarco opencast iron mine in Brazil's Minas Gerais state, to claim that the volume of waste material released into the Rio Doce (sweet river) system when two of its Fundão tailings dams at Mariana collapsed, is less than first thought.

The incident on 5 November all but wiped out the nearby town of Bento Rodrigues, killing 17 people; the turbid red stain then made its way to the Atlantic more than 600 km downstream. Initial reports noted that the mud, tested by water management authorities, was found to contain toxic substances like mercury, arsenic, chromium and manganese, at levels exceeding human consumption levels. Andres Ruchi, director of the Marine Biology School in Santa Cruz, Espirito Santo state, said the tailings slurry could have a devastating impact on marine life when it reached the mouth of the Rio Doce, a feeding ground and a breeding location for many species of marine life, including the threatened leatherback turtle, dolphins and whale. 'The flow of nutrients in the whole food chain in a third of the south-eastern region of Brazil and half of the Southern Atlantic will be compromised for a minimum of a 100 years.' Aloysio da Silva Ferrao Filho, a researcher at the Oswaldo Cruz Foundation, stated that the impact has been severe in the river itself: 'The biodiversity of the river is completely lost, several species including endemic ones must be extinct'.

Initial reports put the volume of tailings (a mix of water, silica, fine iron ore and manganese) at more than 50 million cubic metres, but this has now been downgraded to about 32 million cubic metres. This nevertheless represents one of the biggest ever tailings dam failures. Samarco estimates 85 per cent of the material either pulled up, or was contained, within an 85 km downstream stretch and claims that independent analyses of the river by the Brazilian Geological Service and the National Water Agency supported earlier assessments that the tailings material released was non-toxic.

The company has been working on stabilising the released tailings and preventing more material from entering the Rio Doce system through the construction of containment dykes, and revegetation along the Gualaxo and Doce rivers, to reduce the risk of erosion in heavy rainfall. It states that fish had been detected in areas affected by the turbidity plume, as well as in unaffected tributaries of the Rio Doce. The company has agreed to pay the Brazilian government 1bn (€217m) compensation. However, environmentalists remain deeply sceptical of the operator's recent claims.
http://www.theaustralian.com.au/business/mining-energy/brazil-mine-disaster-samarco-downgrades-rio-doce-waste-levels/news-story/38f329dbf837823f2673675121522992

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