Department for Infrastructure
An Roinn Bonneagair
www.infrastructure-ni.gov.uk

Turley
Hamilton House
3 Joy Street
Belfast
BT2 8LE

Dfl Strategic Planning Division
71 Ebrington Square
Derry/Londonderry
BT47 6FA

Date: 8th January 2019
Your Ref: DALB3001
Our Ref: **LA10/2017/1249/F**
(Please quote at all times)
Please Contact: [redacted]
Contact Number: 028 7131 4146

Dear Sir/Madam,

REGULATION 23 OF THE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS (NORTHERN IRELAND) 2015 ('The Regulations')

RE: FURTHER INFORMATION AND EVIDENCE RELATING TO ENVIRONMENTAL STATEMENT.

Location: **Lands north west of Greencastle and east of Rouskey; north of the Crockanboy Road, mainly west of Mullydoo Road, north and south of Camcosy Road including lands approximately 165 metres west of no. 45 Camcosy Road to the junction of Camcosy Road and Crockanboy Road and lands 47m to the south east of 73 Crockanboy Road off the Lenagh Road (in the townlands of Crockanboy, Teebane West, Casorna, Rouskey, Attagh, Curraghinalt, Altcamcosy, Alwories Monanameal, Drumlea, Fallagh Lower and Glenmacoffer).**

Proposal: **Underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works, Greencastle, County Tyrone.**

see application form P1, sheet 1 for full project description.

In accordance with the above Regulation 23(1) the Department is of the opinion that the environmental statement submitted with planning application LA10/2017/1249/F should contain further information. The Department requires the applicant to submit such further information and this should be provided in the form of an addendum to the environmental statement. Four copies of the addendum should be submitted to the Department which will be subject to the publicity and consultation arrangements outlined in the Regulations.

The further information required is as set out in the following consultation responses:

1. Health and Safety Executive Northern Ireland
2. Department for Infrastructure – Roads
3. Department for Infrastructure – Rivers Planning and Advisory Unit
4. Department for Infrastructure – Economics Branch
5. Department of Agriculture, Environment and Rural Affairs – Northern Ireland Environment Agency
6. Department of Agriculture, Environment and Rural Affairs – Marine and Fisheries Division
7. Loughs Agency
8. Royal Society for the Protection of Birds
9. Department for Communities – Historic Environment Division
10. Northern Ireland Electricity Networks Ltd

Please refer to the consultation responses listed above which are available to view in full via http://epicpublic.planningni.gov.uk/publicaccess/. Without prejudice the Department has attached to this letter a copy of each of the above responses highlighting those matters that it considers constitutes further information for each consultation response (coloured green).

Notwithstanding the above exercise however, you should consider the full extent of the consultation responses and satisfy yourself that you have addressed all requests. In this respect you may wish to discuss responses with consultees to assist you in agreeing those parts that have been provided as comment, those parts seeking clarification of information and those parts constituting further information requests. Following the meetings or any clarification the Department is content to reconsider the extent of the FEI request as necessary.

Consideration should also be given to the comments made by Loughs Agency in

their letter dated 13th September 2018, and we have attached a copy, again with those areas highlighted that we consider constitute FEI.

As a part of the ES, the WMP should include sufficient information and identification to enable the Department to evaluate the operator's ability to meet the objectives of the WMP in accordance with Regulation 6(2)(c) of The Planning (Management of Waste from Extractive Industries) Regulations (Northern Ireland) 2015. For completeness, consideration should also be given to the comments of Valuation Office Agency dated 12 April 2018 where these have a bearing on the ES/WMP.

The further information is requested under Regulation 23 of the Environmental Impact Assessment Regulations (Northern Ireland) 2015. The information should be submitted to the Department within 3 months of the date of this letter (or such extended period as may be agreed in writing with the Department). If this information is not received by the Department within the specified time period the application shall be deemed to be refused and there is no right of appeal.

The consultation process is not yet complete and this request is without prejudice to requests for any further information that the Department may consider necessary.

If you require assistance regarding the above, please do not hesitate to contact the case officer at the above number.

Yours faithfully

[redacted]

for Strategic Planning Directorate

Response to the Planning Application to Develop an Underground Gold Mine, surface Processing Plant and associated ancillary works at Greencastle, County Tyrone

Ref. No LA10/2017/1249/F

HSENI has considered this development and would make the following comments: -

1.0 Method of transporting the ore out of the mine for processing using dump trucks.

Description based on supplied information:

The proposal is to extract 1,400 tonnes of gold bearing ore per day. The main access ramp (haul road) is to be constructed at a gradient of 12.5 % (1 in 8) and will be used by rubber tyred vehicles and personnel. The main access ramp will be connected to internal ramps at a gradient of 15 % (approx.1 in 6) to provide access to the sub-levels, spaced at 18m intervals. The vertical depth of the mine will be 504m.

Ventilation raisers 4m x 4m Alimak raise climbers will provide fresh and exhaust air ventilation.

Ore and waste passes 2m x 2m will be utilised for material handling.

A paste backfill of waste and cement is to be pumped back into the mine for storage and structural infill.

Description of Ramps -
The Main Ramp will connect the mine working to the surface processing plant. It will be 4.5m x 4.5m and driven at 12.5%. During development 're-mucks' will be created every 140 m that will be used later as passing bays, with each second one being designed as a 'safety run out'.

After each 'safety run out' an 'S 'bend with a 30m radius will be designed to slow trucks.

Safety bays 2m x 1.5m will be created every 25 m.

The Internal Ramp will be driven at 15% and have re-mucks at an average of every 125 m and turns with a 15 m radius, with straight lengths between turns between 150 and 200 m. The Internal Ramp design does not mention Safety bays.

1.1 Safe Use of Diesel Haulage Tucks

The haulage trucks to be used are 30 tonne Sandvik TH430's that the report advises can operate safely on gradients of 15-20%. (1:6.7 to 1:5)

Whilst this may be the case operating close to the maximum recommended working gradient results in the margin for error and safety factor approaching unacceptable limit. This approach results in increased reliance on all the other risk reduction measures working properly (e.g. traffic management, speed control, brake efficiency, training and supervision).

Vehicles working closer to their operating limits will be subject to brake fade as the disc & pads become overheated.

Have Sandvik been appraised of the full facts of how these vehicles will be run (loads, gradients, running time, road surface etc.) to confidently state they can be operated safely?

Brake/stopping efficiency is dependent on the adhesion between the vehicle tyres and roadway surface. The report states the ramp surface will be maintained by grading and placement of 1-2" diameter crushed rock with 2-3% cross grading to manage water.

What assessment has been done of the safety of TH430s running on this surface at 15% gradient?

Extensive vehicle movements are likely to result in significant rutting and issues with dealing with water. Both will reduce braking efficiency.

What consideration has been given to hard surfacing long-term haul roads?

At these gradients, the vehicle brake inspection, maintenance and testing regime will have to be rigorous to ensure safety. It cannot rely on basic 'vehicle stopping distance' checks which can be inherently unreliable and fail to detect reduction in brake performance in time.

Effective brake inspection and maintenance is critical. Brake testing gives a snap shot at a particular moment in time and may pick up brake deterioration but may not.

Competent advice should be obtained on brake testing. It should be a combination of both static and instrumented dynamic brake testing using appropriate equipment. Both the efficiency of the parking and service brakes should be checked. A static test could include a pull through tests using a load cell.

Most instrumented systems only pick up the overall brake efficiency. They may not pick up reducing performance on a specific brake set. Rolling roads (as used

in MOT centres) are able to pick up individual brake performance and detect early failures. The mine owners may wish to install a rolling road at the mine as part of their brake management program.

The risk assessment should properly understand the failure modes of each braking system and implement an effective inspection and maintenance regime to detect and remedy defects.

Have Dalradian properly considered the ongoing costs of maintaining these vehicles in a safe condition?

Before purchasing any machine, Dalradian should ensure that the supplier has carried out the appropriate conformity assessment and that the machine meets the essential health & safety requirements in accordance with UK legislation.

Key standards are:
BS EN 1889-1:2011 – Machines for underground mines – Mobile Machines working underground – safety. Part 1 – Rubber tyred vehicles.
Draft international standard (September 2015) – ISO/DIS 19296 – Mining and earthmoving machinery – Mobile machines working underground – Machine safety. Compliance with fire engineering standards are a priority.

1.2 Use of Diesel Vehicles and Air Quality / Ventilation Considerations

Within the proposal no mention has been given to the Control of Substances Hazardous to Health Regulation (COSHH) , specifically with regard to diesel exhaust emissions, (either anticipated exposure levels or how this risk is to be controlled.)

The operator should note that The EU are actively proposing much tighter controls on exposures to diesel fume (refer to the table below).

	COSHH workplace exposure limit				proposed limit				Diesel S83 consents
	8 hours		15 mins		8 hours		15 mins		
	ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3	
NO_2	-	-	-	-	0.5	0.96	1.0	1.91	<2 ppm
NO	-	-	-	-	2.0	2.5	-	-	<5 ppm
CO	30	35	200	232	20	23	100	117	
DEEE*	-	-	-	-	-	$100\mu g/m^3$	-	-	8 hr - $150\mu g/m^3$ 15 mins - $200\mu g/m^3$

DEEE* - measured as elemental carbon

Within the regulations hierarchy of controls, elimination of exposure is the first step. All the vehicles listed in the proposals are diesel powered. Mines in the UK are currently reviewing their vehicle/machinery stock with a view to replacing them with electrical powered vehicles/machines where reasonably practicable.

Have Dalradian considered these options?

Effective ventilation is an important measure in reducing personal exposure. What ventilation assessment has been completed?

With a number of loaded Sandvik TH430 trucks (Minimum cross section 2.626 m x 2.629 m) potentially running at the same time on the main ramp (Section 4.5 m x 4.5 m), there appears a significant risk of a material effect on ventilation efficiency.

Similarly, the Alimak raise climbers which will provide fresh and exhaust ventilation. Will the Alimaks restrict ventilation and will they be suitable for a mine environment?

1.3 Safety of Vehicle Movements in the Mine

Preventing Pedestrian incidents:

The approach to vehicle / pedestrian segregation should be reviewed.

The safety bays appear to be 'manholes' where pedestrians in the Main Ramp can take refuge as a vehicle passes. It is unlikely that the safety bays will fully control the risk and this mixing of vehicles and pedestrians in the Main Ramp is a high-risk proposal

The system for vehicle / pedestrian segregation is passed on procedure rather than physical separation and calls for pedestrians to go in front of mobile vehicles travelling up inclines and follow them going down. Pedestrians are to advise of their presence by radio but no mention is made of vehicle movements stopping or the use of Safety bays?

Mixing pedestrians and vehicles on the same route is high risk and vehicle/ pedestrian routes should be physically segregated where at all possible

Preventing Vehicle Collisions

What systems will be in place to prevent collisions? In roadways with a high level of vehicle activity, then arrangements should be in place to minimize/prevent vehicles entering the same stretch of roadway e.g. red/green traffic management signals. Some more modern vehicles are fitted with collision avoidance systems.

Whilst Explosives vehicles will have right of way over loaded trucks, unloaded trucks and other heavy machinery and light vehicles, the potential for an Explosive vehicle collision on the decline therefore exists. How will this be prevented?

A number of UK mines have introduced speed indicators/cameras on some of their haul roads (drifts), specifying maximum speeds. Speed limiters not mentioned.

Minimum distance behind trucks to avoid being hit by spillage is mentioned however no information on this distance is provided. How will this be designed and monitored?

Will this incorporate the use of on-board detectors such as found in modern cars to warn drivers of separation distance?

The practice for leaving a vehicle unattended on an incline should be discouraged apart from in an emergency situation. How will this be monitored and controlled?

1.4 Transport Design Risk Elimination and Reduction Options

The company should address the fundamental issue of designing out risk where practicable.

A review has been made of incidents on ramps in a number of countries, demonstrated by an Australian incident pie chart. The pie chart shows that 59% of incidents associated with ramps were caused by vehicles and provides a strong argument against transporting mineral by vehicles, i.e. the lower the number of vehicles on the ramp, the lower the risk.

The Sandvik TH 430 has a width of 2.63 m, giving a clearance of only 0.94 m either side of the vehicle (for a 4.5 m wide roadway).

There are no calculations for the number of vehicle movements in the documents but for 1,400 tonnes of mineral per day, for a 30 tonne vehicle 47 journeys will be required out of the mine, as well as 47 empty traveling back in. The 47 journeys will take about 7 hours 30 minutes of time to achieve, each way.

No details of the number of vehicles or shift patterns have been provided. There are also no details of the time it would take to load and unload the vehicle. No time has been set aside to inspect, audit and affect repairs plus maintain roadway surface.

Based on the significant range of issues highlighted above (both in relation to safety and health risks) can the operator implement an alternative approach such as the use of conveyors for hauling material to surface as used in many other mining operation in the UK?

In summary, the method of mineral transportation should be re-considered and the safety, health and cost benefits of transporting mineral by conveyor should

be considered. Depending on the conveyor configuration, it may also be possible to create a segregated pedestrian route on the Main Ramp.

The primary consideration should be what is the most efficient, economic and safest means of controlling vehicle movements and transporting mineral out of the mine and this may not be by using vehicles.

(The current main access ramp (adit) has been designed with dog-legs every 280m. If the mine was to move to transport the material using conveyors this design would need to be revised.)

2.0 Alimak Lifts

The section of the old workings that were used for exploration work to prove this deposit incorporates an Alimak Lift. This lift was a short-term arrangement and it was agreed that this would not be part of the mining operation as it does not fully comply with the Mines Regulation. It must be removed before mining operations commence. The Alimak Lifts to be put in the ventilation shafts must comply with the Mines Regulations (Northern Ireland) 2016.

3.0 Ground Control

The mine operator shall ensure that such ground control measures are taken as are necessary to keep secure every place in the mine where persons work or pass. The mine operator shall ensure that inrush into any workings in the mine of gas or water from any source is prevented. This will require careful planning to prevent falls of ground or in-rushes from occurring and it is vitally important that appropriate measures are put in place from the outset of development activity.

4.0 Storage and Use of Explosives

The storage of explosives either above ground or underground is a matter to be licenced by the Department of Justice but will have an impact on the mine development.

The movement of explosives within the mine as mentioned in point 1.0 above there is potential for a vehicle carrying explosives to be involved in a collision.

The development of an underground storage facility to store explosives cannot be considered until a certain amount of the mine development has taken place and a second means of egress is in place.

The use of an Emulsion Truck specially designed for this mining operation will have to be subjected to a Hazard and Operability (HAZOP) study in order to identify and evaluate potential hazards and operability problems, so as to ensure the ability of equipment to perform in accordance with the design intent. The HAZOP analysis technique uses a systematic process to identify possible deviations from normal operations and ensure that appropriate safeguards are in

place to help prevent accidents. In addition to its utility in Quality Risk Management, HAZOP is also commonly used in risk assessments for industrial and environmental health and safety applications.

5.0 Waste Rock Tips

The proposed waste rock tip (dry stack facility), total waste to be stored has been calculated as 4.8 million m^3 and tailings from the rock processing that does not contain chemicals, will require a geotechnical assessment to be carried out by a Geotechnical Specialist and any remedial recommendations to be implemented.

6.0 Cyanide

Use of the international cyanide management code in the processing plant. This is a voluntary code and has no legal basis.

The use of Cyanide (and any other hazardous chemicals at the site) will need to comply with the Control of Substances Hazardous to Health Regulations (Northern Ireland) 2000 (COSHH). The company would be required to prepare an assessment of health risks created by work involving (storage, use, disposal and by-products off) substance hazardous to health and of the steps that need to be taken to meet the requirements of the COSHH Regulations.

7.0 Control of Major Accident Hazards Regulations (Northern Ireland) 2015

Based on the information provided, the proposed development will be subject to the requirements for lower tier COMAH sites, imposed by the Control of Major Accident Hazards Regulations (Northern Ireland) 2015. The link to the guidance booklet, http://www.hse.gov.uk/comah/guidance/understanding-comah-new-entrants.pdf, outlines the relevant duties, namely:

a. Formal notification to the Joint Competent Authority (HSENI and NIEA) as a COMAH operator.

b. Provision of Public Information to the Joint Competent Authority.

c. Possess a valid Hazardous Substance Consent (HSC) issued by the relevant Planning Authority for the site.

d. Preparation of a Major Accident Prevention Policy (MAPP).

The MAPP must be specifically about the management of major accident hazards at the particular establishment.

Specific detail on MAPP content is highlighted in COMAH regulation 5, Schedule 2 to the COMAH Regulations and in HSE Information Sheet *Major accident prevention policies for lower-tier COMAH establishments* (see www.hse.gov.uk/pubns/chis3.pdf).

The amount of detail should be proportionate to the level of the hazards present – the greater the hazards the more detail required. The MAPP can refer to other relevant documentation for the establishment. The MAPP must be prepared within three months of a site becoming subject to COMAH.

e. Take all measures necessary to prevent a major accident and limit their consequences to people and the environment.

The amount of hazardous substances on site will have to be carefully managed to ensure that the site remains within Lower Tier COMAH requirements, otherwise Upper Tier COMAH site requirements will have to be met.

8.0 The proposed operation of the site will involve the transport of hazardous substances by road, and hence be subject to the the Carriage of Dangerous Goods & Use of Transportable Pressure Equipment Regulations (Northern Ireland) 2010. The frequency and type of vehicle movements and suitability of vehicle routes, carrying hazardous substances need to be carefully considered by relevant authorities such as Transport NI.

Workplace transport on site must be managed in accordance with HSE Workplace Transport Safety Guide so as prevention or reduce accidents associated with vehicle movements.

9.0 Concluding remarks:

In considering this application, HSENI has made the assumption that the requirements of the Health and Safety at Work (NI) Order 1978, and all relevant statutory provisions, will be met at the establishment should planning permission be granted.

The concept of reducing risk 'as low as reasonably practicable' is enshrined in UK law and requires those who create the risk to mitigate it using up to date methods. The quantum of risk tolerability moves forward with advances in relative technology. The EU Extractive Directive also requires that employers apply the 'hierarchy of hazard control principles' i.e. that hazard and therefore risks are designed out at source.

All involved in the Mining Industry must be aware of the mine collapse at Pike River Mine in New Zealand where 29 miners died. The Royal Commission Report released on 30th November 2012 identified the absence of a readily available second means of egress as a primary failure in the Pike River mine design. The Report was highly critical of the New Zealand government regulators who compromised on mine design by accepting promises of changes as and when the mine design advanced (which never materialised) and failed to secure and enforce adequate mine design from the outset.

HSENI accepts that detailed design of the mine cannot be fully completed until the project moves into the development phase. However strategic design such as; the principal layout, road way dimensions and gradients, access and egress methodologies, extraction method, principal plant, support and stabilisation methodologies, ventilation, should be known at this stage of the project to ensure that risks have been identified and have been designed out or mitigated by good design. HSENI has raised concerns over the method of transporting the material out of the mine and it would not be unreasonable to request that this be reviewed at this stage so that any detailed design changes can be made prior to development activity.

Department for Infrastructure
An Roinn Bonneagair
www.infrastructure-ni.gov.uk

Dfl Roads

Consultation Response

Application Reference	LA10/2017/1249/F
Proposal	Underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works, Greencastle, County Tyrone. Please see application form P1, sheet 1 for full project description.
Location	Lands north west of Greencastle and east of Rouskey; north of the Crockanboy Road, mainly west of Mullydoo Road, north and south of Camcosy Road including lands approximately 165 metres west of no. 45 Camcosy Road to the junction of Camcosy Road and Crockanboy Road and lands 47m to the south east of 73 Crockanboy Road off the Lenagh Road (in the townlands of Crockanboy, Teebane West, Casorna, Rouskey, Attagh, Curraghinalt, Altcamcosy, Alwories Monanameal, Drumlea, Fallagh Lower and Glenmacoffer)
Date of Consultation	19 September 2018
Date of Response	19 September 2018

RE: Transport Assessment and drawings published on Planning Portal 13/12/2017

This development proposal does not clearly demonstrate its need to abandon a section of the Green road. Details of this should be clearly provided to show the extent of impact to the Green Road. It also refers to providing an 'alternative' route to be adopted by Dfl Roads. This route would not be considered as an alternative route rather a replacement road for any abandoned section. In addition, it is our opinion that the description wording of the proposal in the P1 Application form does clearly present these proposals.

Whilst the intentions of the application is not clear, in principle the Department has no objection to the proposal of an abandonment of the Green Road with a suitable replacement road. However this is subject to the applicant providing clear detail of the impact to the Green Road and that the proposed road is to replace any abandoned section and is being provided to the Department's standards. The abandonment process will also have to be successfully concluded in order for Dfl Roads to agree to adopt any replacement road.

The design of the new proposed road will be subject to a Scheme Design Overview in accordance with DfI Roads Policy. The replacement road should be similar to the Green Road and the Department would advise that a 3m road width with a suitable number of passing bays as being appropriate.

It is noted that a crossroads arrangement is proposed for the private accesses crossing the new road. This is not considered appropriate and should be redesigned as a staggered junction.

TRAFFIC ASSESSMENT REVIEW (on impact on the public road network)

DfI Roads Data Section has reviewed the submitted Traffic Assessment and prior to signing off the review as completed the following issues should be addressed

Trip Generation and Distribution

(1) *Proposed development*

The Consultant claims to have added all of the daily site trips to the back ground traffic, during the AM and PM peak periods, to give a more robust assessment of the junction workings. However the supplied Flow Diagrams and Junction 9 outputs would indicate that the background traffic (opening, 10th and 15th Years) have Not been taken into accounts.

DfI Roads would require evidence that the AM and PM peak background traffic has been included within the Junction 9 models. The provision of composite Flow Diagram would aid in the checking of this.

(2) Assessment years

The Consultant indicates within the TA that they would look at:

- The Opening Year of Construction 2018
- The Opening Year of Site Operation 2020
- 10th year of growth of the Site Operation 2030
- 15th year of growth of the Site Operation 2035

However the only Flow Diagrams supplied were for the surveys data and the Site trip methodology.

DfI Roads would require the AM & PM peak Flow Diagrams for:

- The base line flows for the junctions surveyed brought up to 2018

- The base line flows for the Opening year (Construction), Opening year (Operational) and 10th and 15th years of growths (Operational). The later for any new or improved junctions.

- With Development (base line plus the Development Traffic) for the Opening year (Construction), Opening year (Operational), 10th and 15th years of growths (Operational)

This is required so that Dfl Roads DaTA Section can verify that the correct flows have been applied to the Junction 9 models etc.

Highway Impact and Traffic Growth

The Consultant only illustrated the Daily flows of HGV and Staff, arrivals and departures. No composite Flow Diagrams for the AM and PM peaks were provided to this would allow Dfl Roads DaTA Section to check if the background traffic, for the relevant years, had been included etc.

DaTA Section would require evidence that the AM and PM peak background traffic has been included within the Junction 9 models. The composite Flow Diagrams should be provided by the Consultant. An E-mail was sent on the 24 August 2018 to request these and the Electronic junction model files.

Traffic Impact

(1) Threshold Assessment

Appendix 7 attempts to illustrate the impact of the development on the junctions on the B46 Crockanboy Road. However it should be the two-way impact on each approach link.

The Impact Table 1 Appendix 7 should be reworked to account for the two-way site trips on each arm. Also a legend is needed to identify the Arms. A more appropriate option would be to provide a Flow diagram with the percentages per arm on it.

(2) Junction Modelling

The Consultancy used TRL Junction 9 software to replicate the working of the main Access onto Crockanboy Road as well as the junctions of the Camcosy and Greencastle roads with the Crockanboy Road.

DaTA Section requires the composite Flow Diagrams to establish whether or not the correct flows have been used in the model.

Camcosy Road impact.

There will be an impact on the Camcosy Road by HGV use especially through the initial construction period. The existing passing bays are proposed to be upgraded and this should be a pre-commencement planning condition.

The Camcosy Road approach to the B46 Crockanboy Road is on a relatively steep gradient. The provision of anti-skid measures should be provided on the approach to the B46 Crockanboy Road from Camcosy Road.

LENAGH ROAD TUNING AREA

Additional detail of the proposed HGV turning movements is required to restrict reversing movements to an absolute minimum and that HGVs enter and exit the public road in forward gear.

OTHER REQUIREMENTS UNDER THE ROADS ORDER

Precautions shall be taken at all access points onto the public road to prevent the deposit of mud and other debris on the public road by vehicles travelling to and from the construction / operational site...

The applicant is advised that under Article 11 of the Roads Order (Northern Ireland) Order 1993, the Department for Infrastructure is empowered to take measures to recover any reasonably incurred expenses in consequence of any damage caused to the public road as a result of extraordinary traffic generated by the proposed development

Issued on behalf of DfI Roads – Western Division
Development Control Section,

Department for Infrastructure
An Roinn Bonneagair
www.infrastructure-ni.gov.uk

Dfl Rivers Planning & Advisory Unit

[redacted]
Dfl Strategic Planning Division
Clarence Court
10-18 Adelaide Street
Belfast
BT2 8GB

44 Seagoe Industrial Estate
CRAIGAVON
Co. Armagh
BT63 5QE
Tel: 028 3839 9118

Your Ref: LA10/2017/1249/F
Our Ref: IN1-18-3691

11th November 2018

Dear Sir

Re: Underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works, Greencastle, County Tyrone.

In response to your consultation dated 5th March 2018 with the accompanying 'ES-Volume 3 B10 Flood Risk and Drainage Assessment' (FRA), dated November 2017 and the 'Surface Water Impact Assessment – Technical Annex A Site Wide Water Balance' report, dated October 2017; Dfl Rivers requests clarification on the points listed below.

- The FRA refers to berms and drainage ditches on the north, west and east of the proposed site. Drg No. 2016021-P-CIV-004 Rev 0 shows northern and western ditches but no eastern ditch. There is an East Service Ditch marked along the base of the Dry Stack Facility which is west of the proposed access road and public road. It isn't clear how existing drainage and overland flow from the east of the roads will be collected, stored and safely disposed of. Can details be please be provided?

- Reference is made in the FRA to the capacity of the drainage ditches i.e. conveying the 1 in 1,000 year flood event. The typical sections for the ditches on Drg No. 2016021-P-CIV-004 Rev 0 appear too small. Can calculations please be provided to demonstrate that the ditches have the required capacity?

- There are references to the runoff from the access road in the FRA and how it will be dealt with but similar information could not be found for the proposed public road. Is there information on how the runoff from this road is being managed?

- The FRA states that discharge from the site will be limited to 55.6 l/sec. This rate is less than the current 2 year greenfield runoff rate (section 4.4.2. page 32). In Section 5.4 'Predictions of Flows in the Pollanroe Burn and Owenreagh River' of the 'Water Balance

Department for
Infrastructure
An Roinn
Bonneagair
www.infrastructure-ni.gov.uk

Report' it is stated that flows in the Pollanroe Burn and the Owenreagh River will increase post development (Table 18 & 19 pages 47 & 48). Can it please be demonstrated that these pieces of information are compatible?

- Page 41 of the FRA states the following:

  The catchments at Points 2 and 5 (Figure A1-1) were extracted from the Web Service with key catchment characteristics shown in Table A1-1.

  Figure A1-1 page 44 indicates crossing points 1 & 2. It has been assumed that point 5 is point 1. Will you please confirm or otherwise?

If you require any additional information or clarification please contact me at the above address quoting the reference number.

Yours faithfully

[redacted]
Planning Advisory & Modelling Unit

Department for
Infrastructure
www.infrastructure-ni.gov.uk

[redacted]
Dfl Economics Branch
Clarence Court
10-18 Adelaide St
BT2 8GB

26 April 2018

Consultation Response for Planning Application

Application Reference	LA10/2017/1249/F
Proposal	Dalradian Gold Ltd – Minerals Planning Application
Location	Co Tyrone

Economics Branch has been asked to provide a consultation response for the above planning application. The remit for the Branch is to consider the economic evidence presented in the environmental statement (ES) received in November 2017.

The headline figures in terms of economic impacts, taken from the ES, are shown below.

Construction	Total Impact Over c.2 year construction period
Total pre-production investment	£160m
Supply Chain spending (including contingency)	£121.6m
Staff Costs	£38.5m
Employment	
Direct jobs (1 year jobs)	500
Multiplier effects: additional 1 year jobs	900
TOTAL (1 year)	1,400
Employment multiplier	2.8
GVA	
Direct	£64m
Multiplier effects: additional GVA	£48m
TOTAL	£112m
Output Multiplier	1.74
Tax	£14.4m

Operation	Average Annual Impact every year over 20+ years
Sales price per ounce (oz)	£1,042
Total annual costs	£66m
Of which supply chain spending	*£49m*
Of which staff costs	*£16m*
Employment	
Direct Employment (average annual FTE)	350
Multiplier effects: additional jobs	620
TOTAL employment	1,010
Employment multiplier	2.6
GVA	
Direct	£133m
Multiplier effects: additional GVA	£23m
TOTAL GVA	£156m
Output Multiplier	1.17
Tax	£15.4m
Exports	£183m

Clearly these figures, should the methodology used to estimate them be deemed adequately robust, would represent a significant benefit to the local economy. With this in mind, it would be useful if Planning consider the points below and seek clarification as indicated.

Note that these points refer to the document 'C13 Statement of Economic Impacts' unless otherwise stated.

1) The total construction (pre-production) investment is estimated to be £160m, consisting of £121.6m Supply Chain spending and £38.5m Staff Costs[1]. This is then used to estimate the economic impacts (employment, GVA, Tax etc). Figure 3.2 highlights that £117m of the £160m is assumed to be invested within NI (approximately 73%). That being the case, it would have been useful if a breakdown of investment was provided at the NI level.

   Nevertheless, it isn't clear if the supply chain and induced employment impacts have been estimated using the total investment or the investment within NI. For instance, if a portion of the investment is spent in the ROI or rest of the UK then at least some of the benefits linked to this are likely to accrue outside of NI. Planning should seek clarification of how this has been accounted for and what the key benefits are for the NI economy (as opposed to total benefits, some of which could accrue elsewhere).

2) Linked to the point above, GVA has been estimated using the following assumption (p.28):

[1] Note figures may not add due to rounding.

'The Office for National Statistics (ONS) estimates that approximately 40% of total construction investment (including staff costs) is "value added." For the £160 million of spending on construction inputs and labour for Curraghinalt, the direct GVA would be approximately £64 million'.

Again, this appears to suggest that GVA for NI as a result of the construction phase has been estimated using the total investment and not the investment within NI, which has a knock-on effect when the indirect and induced GVA is estimated. Planning should clarify if the GVA figures presented are for NI and, if not, what this would be to show the impact for the NI economy.

3) The ES estimates that construction will create an estimated £14.4m in government receipts for National Insurance and Income Tax. However it should be noted that taxation is an 'excepted matter' and, whilst this is a benefit to the exchequer, NI will not necessarily benefit to the magnitude shown given the nature of how public expenditure is allocated. This also applies to corporation tax.

   By contrast, the increase in rates payments will directly benefit NI and the local area given this contributes to services funded by the regional and district rates.

4) In terms of the operational phase, indirect employment has been estimated using a breakdown of operational spending. Planning should seek clarification if this is based on expenditure within NI or total expenditure, as the increase in employment across the supply chain in NI is only likely to be connected to expenditure within NI. Note the induced employment is linked to this as well.

5) The ES does not provide an explanation as to how the GVA for the operational phase was estimated and it would be useful if this was clarified to ensure it accounted for NI-specific expenditure/employment.

6) Section 3.11 outlines the benefits related to exports and a reduction in the trade deficit. Planning should seek clarification that any materials/services sourced from outside of NI have been accounted for which will, of course, represent imports.

7) As outlined in Appendix 1, the employment and output multipliers differ from industry benchmarks - with the employment multipliers being higher but output multipliers lower. The multipliers reflect the scale of indirect and induced economic activity as a result of the direct benefits of the proposal. The table below compares the multipliers to the most recent figures available at the UK level[2].

Multiplier	Quod (ES) (Type II)	UK 2014 (ONS) (Type I)
Construction Employment	2.79	2.06
Construction Output	1.74	1.86
Operational Employment[3]	2.60	2.11
Operational Output	1.24	1.57

It is important to note that the UK figures reflect Type I multipliers i.e. only the indirect (or supply chain) impacts but not the induced impacts. ONS does not produce Type II multipliers. Therefore, one would expect

[2] https://www.ons.gov.uk/economy/nationalaccounts/supplyandusetables/datasets/ukinputoutputanalyticaltablesdetailed

[3] It has been assumed the proposal would fall under the Industry group of 'Extraction Of Crude Petroleum And Natural Gas & Mining Of Metal Ores'.

the Type II figures to be slightly higher than those shown. Accounting for this, the Quod employment figures are still likely to be higher than average; however, that is not to say these would be considered unrealistic.

Quod have already compared their multipliers to industry standards and provided a brief suggested reason for difference, but I thought it would also be useful to show how these compare to the most recent UK figures from ONS. It is also worth noting the ONS estimates are 2014 figures and economic conditions are likely to have an impact, with Quod estimating future multipliers which should relate to a period of improved economic conditions (the pre-recession 2005 ONS Construction Employment Type I multiplier was 2.53 for instance). Therefore, I believe these are at the higher end for the industries in question, based on the most recent data, but not unreasonable.

8) Displacement has been considered and dismissed, the reasoning for doing so appears to be sound. However, I am not familiar with the area/location in question and Planning should be satisfied that there is unlikely to be a notable impact on farming and agriculture; this will ensure no displacement of current economic activity linked to the sector.

In conclusion, the theme running through the comments above is leakage i.e. employment or GVA benefits occurring outside of the region (NI). Footnote 57 of the report states,

'Leakage has not been directly assessed either as DGL is not undertaking a Green Book appraisal which would be applicable in the case of public funds investment. Leakage is implicitly assessed when estimating local impacts'.

Whilst this is not an appraisal, it is important to disaggregate benefits to the NI economy and therefore leakage would be implicitly assessed at the NI-level if this has been done. Planning should seek clarification about the points above to ensure a fair reflection of regional benefits has been considered when making a decision about the planning application.

[redacted]

Departmental Economist

Department of Agriculture, Environment and Rural Affairs

Planning Response Team
Klondyke Building
Cromac Avenue
Gasworks Business Park
Lower Ormeau Road
Belfast
BT7 2JA
Tel: 028 9056 9604
Email: planningresponse.team@daera-ni.gov.uk

Date:05 October 2018

Dear Sir/Madam

Planning Application Ref.:	LA10/2017/1249/F
Location:	Lands north west of Greencastle and east of Rouskey; north of the Crockanboy Road mainly west of Mullydoo Road north and south of Camcosy Road including lands approximately 165 metres west of no. 45 Camcosy Road to the junction of Camcosy Road and Crockanboy Road and lands 47m to the south east of 73 Crockanboy Road off the Lenagh Road (in the townlands of Crockanboy Teebane West Casorna Rouskey Attagh Curraghinalt Altcamcosy Alwories Monanameal Drumlea Fallagh Lower and Glenmacoffer)
Proposal:	Underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works, Greencastle, County Tyrone. Please see application form P1, sheet 1 for full project description.

Thank you for your consultation on the above which was received by DAERA on 05/03/2018

Our statutory duty is to ensure that the natural and historic environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development.

We have reviewed the details of the application and would provide summary comments as follows:

Drainage and water
The Drinking Water Inspectorate require further information. Water Management Unit (WMU) has considered the impacts of the proposal and on the basis of the information provided are unable to determine if the development has the potential to adversely affect the surface water environment.

Land, Soil and Air
Industrial Pollution and Radiochemical Inspectorate (IPRI) advise this Proposed Development will require a PPC permit and a Hazardous Substances Consent prior to operating. Regulation Unit (Waste Licensing Team) has considered the impacts of the proposal and makes the following comment: NIEA is not the competent authority with regard to the Mining Waste Management for this proposed facility. This is regulated by the Planning Authority. Regulation Unit (Land and Groundwater Team) has considered the impacts of the proposal on the aquatic environment (especially groundwater) and on the basis of the information provided is unable to determine whether the proposal would have a significant adverse impact. Our substantive planning response is dependent on completion of a peer review by an Independent Expert. A meeting between DfI Planning and NIEA is necessary to discuss and agree the commissioning, management and securing funding for the peer review.

Natural Heritage and Conservation Areas
Natural Environment Division require further information.

If you wish to discuss anything raised in our response, please do not hesitate to contact Planning Response Team (details above).

Kind Regards

Planning Response Team

On behalf of DAERA

Drainage & Water

Planning Reference No.: LA10/2017/1249/F [Dalradian]

Section Reference: GQ311

Considerations:

The Drinking Water Inspectorate has considered the application in relation to **private water supplies** used in the supply of drinking water. On the basis of the information currently available we are unable to determine whether the development would have a significant adverse impact on private water supplies.

In relation to the **public drinking water supply**, the applicant is required to consult with Northern Ireland Water (NI Water), who are the statutory water undertaker, to allow an assessment of any potential risks to drinking water supplies. NI Water has a regulatory obligation, under regulation 30 of The Water Supply (Water Quality) Regulations (Northern Ireland) 2017, to undertake risk assessments of all aspects of its drinking water supply systems from catchment through to consumers' taps. The applicant should provide all necessary data and models to allow NI Water to assess these within its risk assessments in relation to any po-tential impact on the management of its drinking water abstractions. The proposed develop-ment should not adversely impact on Drinking Water Protected Areas established under Arti-cle 7 of the Water Framework Directive, DWI could not find any specific reference to an as-sessment of these designations within the report.

The Explanatory Note details where information requires clarification along with further information requests.

Explanatory Note:

Environmental Statement – Volume 3 – C3 Surface Water Baseline Report

Section 3.3 Water Quality – at the time of the report the drinking water quality regulations quoted were from 2007 (as amended). Since the publication of the report new regulations are now in place from October 2017, which can be viewed at:

The Water Supply (Water Quality) Regulations (Northern Ireland) 2017
http://www.legislation.gov.uk/nisr/2017/212/contents/made

The Private Water Supplies Regulations (Northern Ireland) 2017
http://www.legislation.gov.uk/nisr/2017/211/contents/made

These new regulations do not change the drinking water quality standards but should be quoted in future reports for consistency.

Table 3-29 details project guideline values. These guidelines are considered against the regulatory drinking water standards, where there is no regulatory standard for a parameter under assessment then consideration should be given to the use of the World Health Organisation Guideline values for Drinking Water e.g. for barium a value of 1.3 mg/l should be considered www.who.int/water_sanitation_health/water-quality/guidelines/chemicals/barium-background-jan17.pdf?ua=1

Drainage & Water

When assessment is made of potential limits on outputs from the site suitable warning or trigger values should be used in the management of monitoring programmes and to ensure actions are implemented in advance of any potential threat to drinking water quality. A threat to drinking water quality is considered as being where the outputs from the site would breach Article 7 of the Water Framework Directive. Consideration should be given to any potential increase of chemical loadings over time against the current background levels. The Company should engage with NI Water and NIEA on the established Drinking Water Protected Areas (DWPAs) to gather information on baseline levels for these parameters and to ensure the processes and any discharges from the site will not impact negatively on the water quality within these catchments. In developing monitoring plans cognisance should be given, in the first instance, to the regulatory drinking water standards (see above) and secondly to the drinking water standards set within the World Health Organisation Guideline values for Drinking Water: http://www.who.int/water_sanitation_health/publications/drinking-water-quality-guidelines-4-including-1st-addendum/en/ or any subsequent amendments or revisions.

Note table 3-29 (Page 70) has a project guideline level of 730 mg/l for molybdenum, this would seem to be a typo and should read 0.073 mg/l as detailed in CCME, this equates to WHO guideline level of 0.07 mg/l.

The applicant should future proof against potential changes to drinking water standards and note the current European Commissions consultation on the Recasting of the Drinking Water Directive which is currently ongoing. The consultation document can be accessed at: https://ec.europa.eu/info/law/better-regulation/initiatives/com-2017-753_en Of particular relevance in the consultation is the consideration to reducing the lead standard from 10 µg/l to 5 µg/l.

Groundwater Impact assessment (SRK Consulting) – U6193 Hydrogeology Impact Assessment

4.1.2 Private Abstractions – Notes 61 private abstractions in the potential piezometric drawdown radius with 16 of these within layer 5 of the groundwater model.

DWI was unable to fully determine from the report that the proposals would not have a negative impact on either quality or sufficiency of private water supplies used as drinking water supplies (as defined under the Drinking Water Directive 1998) i.e where it used for domestic purposes; in food production, where the quality of the water would impact on the final product; or where the water is made available as drinking water to the public.

A summary table should be provided to DWI to indicate the private abstractions used as drinking water supplies which have been risk assessed by the developer, to include details on; location (Grid Reference, address, and a shapefile of these supplies); the type of supply (including use); the risk assessment undertaken; where risks have been established details of these and the proposed mitigations; where no risk has been established a statement confirming this; and where further information has to be established a plan to obtain this information. Details of monitoring programmes (location, frequency, and scope) to monitor and confirm drinking water quality (to include baseline monitoring of relevant drinking water standards), and in confirming the sufficiency of supplies. Trigger levels for action should also be included within the monitoring plan to ensure any remedial measures are undertaken in a timely manner to prevent a deterioration in drinking water quality or sufficiency of supplies.

If not already in the risk assessment programme the following private water supplies which are registered with DWI under the Private Water Supplies Regulations (Northern Ireland) 2017, in Table 1, should as a minimum be included in this.

Drainage & Water

Table 1

DWI Site ID	Grid Reference
FO012Y	258694E 384453N
FO013Y	260071E 385327N
FO017	259842E 382896N

Table 5-3: the table (row 4) determines there are no specific measures for the protection of water levels or water quality at private abstractions and refers to the risk assessment approach. The Private Water Supplies Regulations (Northern Ireland) 2017 afford protection to the water quality of regulated supplies through a monitoring programme and also the adoption of risk assessments. There is no legal requirement for local authorities to monitor or risk assess under these regulations as this is the responsibility of the Drinking Water Inspectorate in Northern Ireland. There is however an agreement in place whereby local councils assist DWI in this role. Water quality at private water supplies is required to meet the same standards as in the public water supply and these are defined and monitored under the private water supplies regulations.

Table 6-10 (page 80) Prediction concentrations for separated paste and waste risk with 5% binder – Note the column NI Drinking Water Guideline Values are not all based on the standards within the 2017 drinking water quality regulations (e.g. As is given as 0.05mg/l whereas the drinking water standard is 0.01mg/l). The company should review, where appropriate, its use of drinking water guideline values to ensure they are comparable to those contained in the current legislation.

Public Water Supplies

Further details are required in the form of assessments and models, to demonstrate the activities undertaken during all stages of this development will not negatively impact on drink-ing water catchments (Drinking Water Protected Areas) and abstractions through a reduction in the established water quality. If there are potential risks identified then suitable mitigation measures should be proposed, along with monitoring (including baseline monitoring) where this is appropriate. The Drinking Water Inspectorate was unable to find such assessments within the current Environmental Statements. The applicant should provide all necessary data and models to allow NI Water to assess these within its risk assessments in relation to any potential impact on the management of its drinking water abstractions. The proposed development should not adversely impact on Drinking Water Protected Areas established under Article 7 of the Water Framework Directive, DWI could not find any specific reference to an assessment of these designations within the report.

Drainage & Water

Section Reference:

WMU/PC/ 28851-1

Considerations:

Water Management Unit (WMU) has considered the impacts of the proposal and on the basis of the information provided are unable to determine if the development has the potential to adversely affect the surface water environment.

Explanatory Note:

On the basis of the information provided WMU are unable to determine if the development has the potential to adversely affect the surface water environment

The Environmental Statement presented is based on environmental baseline information and data that was collected up to approximately 2016. That means that the baseline information is now approaching an age of approximately two years. Should the determination of the planning application for this development be protracted an updated Baseline Data Report will be requested. The applicant should therefore make provision for the ongoing collection of baseline data.

New data should be jointly interpreted with the existing baseline data to verify that baseline conditions have not changed considerably. For parameters where verification fails, models and impact assessments will need to be reviewed and updated.

Baseline information includes (but is not limited to):

- Surface Water Chemistry Water Quality
- Surface Water Biological Water Quality*
- Surface Water flows

*While WMU is content with the methodology of how invertebrate sampling was carried out it has some reservations regarding how the information was interpreted / presented. WMU therefore recommends the applicant contact WMU to discuss this.

NIEA is not the competent authority for Mining Waste and has not specifically commented upon the Mining Waste Management Plan. However, NIEA would highlight to DfI Planning, as the Competent Authority for The Planning (Management of Waste from Extractive Industries) Regulations (NI) 2015, that regulation 10 of the aforementioned Regulations requires the prevention of water status deterioration, air and soil pollution to be demonstrated within a Mining Waste Management plan.

The surface water and groundwater aspects of the Mining Waste Management Plan, as with the Environmental Statement, are underpinned by a number of groundwater and surface water models which have been used to assess the potential environmental impacts of the

proposed developments on groundwater flows, geochemistry and water balance. These models include (list not exhaustive):

- Modflow including FlowSource extension
- PHREEC + Excel
- GoldSim + associated stochastic equations

The applicant should provide the relevant model runs in digital form to allow for peer review of the models and the key assumptions. There are currently remaining uncertainties regarding the conclusions based on the model outcomes pending the Peer review and hence NIEA is not in a position to provide a substantive planning response at this point in time.

To support NIEA's substantive advice to Planning, it is necessary that an Independent Peer review of the surface water Modelling and key assumptions is undertaken. A meeting between DfI Planning and NIEA is necessary to discuss and agree the commissioning, management and funding aspects of the Peer review.

Whilst noting the applicant intends submitting an Environmental Emergency Response Plan, as part of the final CEMP, this only covers the construction phase. The applicant should consider appropriate worst-case scenarios for the processes and activities taking place at the site during the all the different phases of the project. An assessment of potential environmental impacts should be conducted and appropriate mitigation measures identified including clear details of the water management practices to be adopted. Whilst noting the ES does contain some information regarding this WMU requires this be clearly set out and all potential scenarios identified.

Possible worst case scenarios include (but are not limited too):

- Failure of Waste Water Treatment plant (WTP) for all scenarios up to and including a storm event in excess of 1 in 1000 year.
- Failure of Sewage Treatment plant (STP)
- Failure of Detox Circuit.
- Failure of the paste plant for all scenarios up to and including a storm event in excess of 1 in 1000 year.
- Spillage of chemicals outside the processing plant (including cyanide)
- How waters will be managed in event of a fire.

WMU had asked for clarification of a number of points from Dalradian on 7th July. At the date of this response that clarification had not been received. Some of the clarification is repeated below.

Whilst noting that the application contains a number of drawings relating to the water management features on site, due to the overall complexities of those drawings, the limitations of viewing them on computer and the number of references to those features throughout the environmental statement WMU require the clarification of the following points.

The East Diversion Ditch discharges to the Pollanroe Burn ultimately (ES V2 CH4 4.7.1). Can you confirm that the East Diversion Ditch passes through the East ponds and then the WTP (as suggested in ES V2 CH4 4.7.1 Fig 4-17 and ES V3 C4 Annex A Table A2-24) before the ultimate discharge to the Pollanroe?

The West Diversion Ditch can occasionally divert direct to Pollanroe Burn (ES V3 App B10 4.4.6). WMU were unable to clearly identify from the supplied drawings any water management structures for doing so. How is this diversion directly to the Pollanroe achieved and where does this discharge to the Pollanroe occur?

The Clean Water Pond provides a compensation flow to the Pollanroe Burn (ES V2 CH4 4.7.1). ES V3 B2 Table 3-1 states" Excavate clean water pond, installation of liner, discharge culverts to WTP" which suggests a discharge from the clean water pond to the WTP. Can the applicant confirm that clean water pond compensation flow is via the clean water pond overspill / spillway (culvert or weir) and does not pass through the Water Treatment Plant or if this is not the case the mechanism for transferring / infrastructure utilised for transferring the compensation flow to the Pollanroe?

WMU notes that the drawings associated with the PPC application show a proposed discharge of storm water (roof fall) from the process plant area to the Clean Water Pond. If the Clean Water Pond discharges directly to the Pollanroe without passing through the WTP what procedures are in place in the event of an incident (fire etc.) to prevent contaminated fire water etc. entering this system therefore being discharged to the Pollanroe? What procedures are in place to deal with fire water on other areas of the site?

The Clean Water Pond can receive water from the Water Treatment Plant (ES V2 CH4 4.7.1) While noting that there would be a dilution factor of the treatment plant effluent in the ponds what are the predicted maximum concentrations of parameters of interest including total and free cyanide expected in this pond? In the event of the emergency spillways of the East and West ponds what are the predicted maximum concentrations of parameters of interest that would enter the aquatic environment?

With regard to the spillways from the ponds (ES V2 CH4 4.7.6), while the spillway from the Clean Water Pond is clearly shown, WMU were unable to clearly identify the spillways from the East and West ponds nor where these discharge. Please clarify. Has the design of these spillways and their relationship to the pond structures been finalised?

For clarification can the applicant advise how these spillway control structures are designed into the pond structure as WMU were unable to find any drawings displaying this.

Can you confirm that the Clean Water Pond is designed for 1 in 100 year flood flow conditions (24 hr event) ES V3 App B10 4.2 and that it only has a single lining (HDPE)?

ES V2 CH4 4.7.6 Can the applicant confirm that the calculated storage volumes referred to (East ponds; 26,800 m^3 and West pond; 18,200 m^3 (total 45,000 m^3) are the available storage volumes in the ponds required to cope with a 1:1000 year 24 hr storm event? Can the applicant clarify how ES V3 C4 Table 9-19 appears to indicate that during a 1:1000 24hr

storm event the storage appears to be 46,200 m^3, for 1 in 1,000 year 48 hr storm 51,000 m^3 and 2 x 1 in 100 year 24hr storms consecutive again 51,000 m^3.

Can the applicant confirm that all sediments from the ponds will be disposed of to the DSF (ES V3 B3)? Is there a maintenance schedule for this?

Are there procedures in place for the removal of sediment to prevent suspended solids generated during the removal entering the aquatic environment particularly in regard to the clean water pond that has a direct connection to the Pollanroe?

Please provide details of any proposed monitoring schedule for both water quality and quantity in the ponds (Clean, East and West)? With regard to quality is this done by way of spot sampling or continuous monitoring and what parameters are to be assessed by each method? With regard to quantity is this continuously monitored or by spot measurements? If continuous monitoring for both quality and quantity will there be an alarm system and what measures are in place should the alarm be triggered?

In the process plant, with regard to the spray water for taking sludge and cyanide off the carbon, is this totally recycled within the process plant or sent for detoxification or if not where does it go to?

The ES states, "During drought conditions, production at the mine will be able to be supported by groundwater pumped from the underground mine and water stored in the Clean Water Pond. In the event that more water is required it would be possible to truck water to the site, but given the rate of groundwater inflow to the underground workings there is expected to be a source of water on site to allow production to continue during drought conditions". Can the applicant clarify what the source of this water would be and the maximum quantity that would be required?

With regard to WTP can you confirm that it can either send treated water to the process plant, Clean Water Pond or can discharge directly through the proposed discharge point on the Pollanroe?

Is any monitoring (continuous or spot) carried out on the effluent leaving the WTP (to any of the three destinations above) and if so what parameters are measured? Is this to be alarmed and what measures are in place should the alarm be triggered?

With regard to the STP, does it receive the waste water from the underground welfare stations? If not where does that waste water go to?

WMU were unable to clearly identify from any of the supplied drawings the discharge from the STP. Where exactly does the discharge from the STP interact with the rest of the drainage on site to form part of the proposed discharge point?

With regard to the Dry Stack Facility (DSF), is there the intention to continuously monitor the underflow in order to confirm your conclusions regarding any seepage associated with the DSF basal liner with regard to both water quality and quantity?

Was the use of a Geosynthetic Clay Liner in addition to the HDPE liner considered in the DSF design and if so why was it considered to be not required?

WMU notes from the drawings associated with the PPC application that the surface water drainage from the process and infrastructure sites intends the use of several oil interceptors. Has the applicant identified at this stage the proposed class, type and size of interceptors proposed?

Will all pipes containing material that has been in contact with cyanide leaving the process plant (to paste plant and WTP) have secondary containment? What is this secondary containment? If it is a lined ditch please give details regarding lining. What other measures, if any, are to be put in place to detect leakage from these pipes other than visual inspection?

WMU notes that the drawings associated with the PPC application show a sump on the service ditch containing the detox pipe just before it enters the WTP (WMU were unable to find this in any of the drawings in the planning application). WMU assumes this sump is for secondary containment for the detox pipe. How is the sump constructed and will it include any level warning system? Are similar arrangements in place for the pipes returning filtrate water from the paste plant?

Whilst noting that there are a number of drawings dealing with water management arrangements on site due to the complexities of these diagrams and the limitations of viewing them on a computer screen, WMU would request the following.

A large scale (A0) hardcopy of drawing ES V2 CH4 4.7.1 Figure 4 – 17 Proposed Drainage Catchment Areas.

WMU would also require further detail / clarification on the drainage drawings associated with the proposal from Hoy Dornan. In order that the required detail is provided WMU would request the applicant facilitate Hoy Dornan liaising with WMU to discuss our requirements.

WMU notes that the proposal includes minor tributaries of the Pollanroe and part of the Pollanroe being beneath the infrastructure site. WMU would request clarification on:

- How is this to be achieved (culverting, diverting etc.)
- A clear indication (diagram) of all waterways that will be affected including lengths

The applicant should note the definition of a 'waterway' as defined under the NI Water Order:

"Waterway" includes any river, stream, watercourse, inland water (whether natural or artificial) or tidal waters and any channel or passage of whatever kind (whether natural or artificial) through which water flows

In this Order any reference to a waterway includes a reference to the channel or bed of a waterway which is for the time being dry.

At the point where the proposed discharge enters the Pollanroe Burn what measures are proposed in mitigation against erosion, and protection against channel morphology.

ES V3 C4 Annex A Has the drainage catchment reduction (16%) been assessed against what was the natural flow regime for the unnamed waterway?

ES V3 C4 Table 11.2 considers the impact of the "Headwaters of minor streams will be buried under mine infrastructure" and assesses the magnitude and significance of Impact with mitigation as being major and minor respectively however the same table also states no mitigation is proposed. Please clarify.

The ES contains a number of schematics of average annual water balance (for years 6, 12 and 20). The breakdown of drainage / effluent rates (at the annual 50%ile flows) is very helpful, but further schematics should be produced for 100%ile flows and for the 1 in 1000 year (24 hour period) extreme event.

Given the proximity to the proposed peat management areas to the unnamed watercourse and the potential for sediment run off to what standard have the drainage features been designed to in this area?

Can the applicant confirm that the proposed wheel wash (ES V3 App B2) has no discharge (re-circulation), any sediment will be disposed of to the DSF and if this is only for the construction phase?

ES V2 CH4.4.5.3 states "Fuelling and small service maintenance facilities will be located underground. The design of these facilities incorporates pollution and waste product controls including collection sumps/drains, designated waste product storage bins and oil/water separators/skimmers". This appears to suggest that any water encountering oil etc. will be passed through the interceptor before being discharged somewhere. However the figure 4-6 says drains to fuel oil containment sump (closed circuit) suggesting that there is no discharge of contaminated drainage. Please clarify how the drainage from these refuelling areas is to be dealt with.

WMU notes the applicant proposes a number of discharges to the aquatic environment.

WMU request the following information for all proposed discharges (including any proposed as temporary measures such a direct discharge of the West Diversion ditch to Pollanroe as outlined in ES V3 App B10 4.4.6) to the aquatic environment (including discharges 1a+1b, 1c, 2a+2b (identified in 2016021-P-CIV-301), the proposed discharge consent point, discharge from DSF to DSF underdrains).

The information required is outlined in the table below.

Discharge "Name"	Irish Grid Reference of Discharge Point to the Environment (1 letter and 10 digit format)	Nature of Discharge (Sewage/Site Drainage (inc. area(s) drained) /Treated Effluent/Other)	Expected Contaminants (Cyanide/Suspended Solids/Bio-degradable material/metals/other)	Expected Maximum Daily Discharge Volume (m^3/day). Where more than one component each volume should be identified as well as total.

WMU notes that both within the ES itself and when comparing the ES with the PPC application it appears to contain what appear to be a number of inconsistencies. The following list is not exhaustive and only includes those areas that both fall within WMU's remit and would inform part of WMU's decision making process. WMU would require the applicant to clarify the following points.

- ES V2 Ch4 Table 4.1: States with regard to Water demand "22.5 m^3/hr make-up water" however ES V2 Ch4 Table 4.4: Mine freshwater make-up water requirements 19.16 m^3/hour. Please clarify.

- ES V2 4.7.2 states "The values in Table 4-4 indicate that the fresh water make-up requirement for the mine is relatively low, at 19.16 m^3/hour of which approximately 10 m^3/hour will be sourced from the east and west ponds and 9 m^3/hour required from the clean water pond. An additional 10 m^3/hour will be required for spray water. This can also be sourced from untreated pond water". This appears to indicate that the 10 m^3/hr spray water is in addition to the 19.16 m^3/hour. However Table 4-4 appears to indicate that the 19.16 m^3/hour requirement includes the 10 m^3/hour spray water. In addition ES V3 C4 Annex A contains three Water Balance schematics (Year 6, 12 and 20) each of these also appear to show 9.16 m^3/hr treated water from the east ponds in addition to 10 m^3/hr spray water entering the process plant. Please clarify is this 10m^3/hr spray water in addition to the 19.16 m^3/hour or does the 19.16 m^3/hour include 10 m^3/hour spray water.

- Similarly the PPC application App 9 3.5 states "with a requirement for just 9.12m^3 per hour as fresh make-up water" whereas App 9 3.11 states Only 09.62m^3 of fresh water per hour is required as make up water. In addition the overall water balance schematic in the PPC application App 15 appears to show a fresh water input of 18.62 m^3/hr. Please clarify.

- ES V2 CH4 4.7.2 Table 4-4 lists the Process Water requirement as 22.16 m^3/hr however PPC App 15 overall water balance schematic appears to show 24.47 m^3/hr entering the process plant (15.35 m^3/hr treated water from the effluent plant and 9.16 m^3/hr freshwater). Please clarify.

WMU also notes that PPC application App 15 overall water balance schematic makes no mention of spray water and WMU where therefore unable to interpret where this was included in the schematic.

- ES V2 Ch4 4.7.9: The quantity of sewage requiring treatment has been estimated to approximate 83 m^3/week (average of 12 m^3/day). However App B10 4.4.4 and App C4 9.2.2, refers to the outfall from the sewage plant being 35m^3/day. Similarly the water balance schematic diagrams that appear in various parts of the statement refer to the sewage output to the Pollanroe being 1.5 m^3/hr (36m^3/day). Please clarify.

- ES V3 App B5 4.2.8: The dewatered sludge will be transported off-site to a local plant. The estimated quantity of sewage sludge is approximately 12 m^3/day. App C4 Annex C with regards to a proposed sewage treatment plant states "allowing for a minimum of 120 day sludge storage and 5% buffer volume, we offer a 22500l two stage primary settlement tank". Please clarify.

- ES V2 CH8 8.3.1 states "At the existing infrastructure site, no changes are proposed to storm water management concepts based on calculations undertaken by Environ (2013) and approved through the consent of the current operations. The settlement pond at the site has been designed to retain runoff from the site for a 1 in 100 year, 1-hour event followed by two consecutive 1 in 50 year, 15-minute storms." However ES V2 CH8 Table 8-7 Table 8-7 with regard to the existing site and the un-controlled release of contact water in extreme climatic conditions states this occurs when "Extreme rainfall event (more than 1 in 1000 year 24 storm)". Please clarify.

- With regard to proposed discharge consent conditions ES V3 App C4 4.4 refers to no visible oil and grease, however table Tables 9-13 and Table 10-9 proposed discharge consent limits* refers to a trace. Similarly Table 4 in ES V3 APP B10 also refers to a trace of visible oil and grease. Can you confirm that this is a typo in these tables and they should read no trace?

*With regard to the proposed discharge consent conditions, the applicant should make no assumptions based on these proposals (required treatment standards and treatment plant required etc.) or that these proposed conditions are acceptable to WMU. WMU will only be in a position to ascertain if a feasible method of "effluent" disposal is available and the associated discharge conditions that would be required, on receipt of an application for discharge that is deemed complete.

WMU would like to provide the following clarification:

WMU notes ES V2 CH6 6.8.1 states:

- "The stretch of the Owenkillew adjacent to the application site is currently of Good status although the 2021 and 2027 objectives reduce to Moderate. This reduction in

objective in unexplained. The upstream stretch of the Owenkillew River and the Coneyglen Burn are both currently of Moderate status".

- "Below the confluence of the Owenkillew and Owenreagh, the Owenkillew (Gortin stretch) is of Moderate status with both 2021 and 2027 objectives remaining as Moderate. The downstream Killymore stretch returns to Good status although again the 2021 and 2027 objectives are both Moderate. This reduction in objective in unexplained".

This statement has brought to light some errors in the information as presented on the NIEA webmapper. These are currently being investigated, but are understood to affect only a very small number of water bodies. Due to the construction of the NIEA webmapper, it may not be possible to amend the data, in which case WMU will seek to have an erratum note added to the welcome page.

WMU can therefore confirm and the applicant should note, that the information regarding the downgrading of objective for the Owenkillew is incorrect. All objectives for the Owenkillew are good for 2021. Please see the table below.

European Code	Name	2015 Status	2021 Objective
GBNI1NW010102023	Glensawisk Burn	Good	Good
GBNI1NW010102024	Cashel Burn	Good	Good
GBNI1NW010102025	Glenlark River	Good	Good
GBNI1NW010102027	Owenkillew River (Gortin)	Moderate	Good
GBNI1NW010102028	Owenkillew River (Killymore)	Good	Good
GBNI1NW010102043	Glenmacoffer Burn	Moderate	Good
GBNI1NW010102081	Davagh Water	Good	Good
GBNI1NW010102085	Coneyglen River	Moderate	Good
GBNI1NW010102086	Owenkillew River (Glenhull)	Moderate	Good
GBNI1NW010102091	Owenreagh (East) River (Greencastle)	Good	Good
GBNI1NW010102096	Glenknock Burn	Good	Good
GBNI1NW010104040	Glenelly River	Moderate	Good
GBNI1NW010104041	Owenreagh (East) River (Drumlea)	Good	Good
GBNI1NW010104043	Owenkillew River (Drumlea)	Good	Good

Should the applicant wish to meet to discuss any of the above points then WMU will be happy to do so.

Land, Soil & Air

LA10/2017/1249/F

Section Reference: P0572/18A

Considerations

The proposed development is for underground valuable minerals mining and extraction, surface level development including processing plant and other associated development and ancillary works near Greencastle, County Tyrone. The proposed development has a number of activities that will require permitting under the Pollution Prevention and Control (Industrial Emissions) Regulations (NI) 2013 (The PPC Regulations) prior to being operated.

The applicant has submitted an application to the Industrial Pollution and Radio Chemical Inspectorate (IPRI) for a Part A PPC permit for the following prescribed activities:

- Crushing and other size reduction activities, Schedule 1 - 3.5 Part B (a), (pre-treatment of ore containing gold and silver);
- Production of non – ferrous metals (gold and silver) from ore by metallurgical chemical or electrolytic activities, Schedule 1 - 2.2 Part A (a) (cyanide leaching and electro winning);
- Disposal or recovery of hazardous waste with a capacity >10 tonnes per day by physio –chemical treatment activities, Schedule 1 - 5.3 Part A (ii) (detoxification of cyanide tailings); and
- Melting non-ferrous metals in a furnace with a capacity of <10 tonnes per day and a holding capacity <0.5 tonnes, Schedule 1 - 2.2 Part C (a) (producing Gold and Silver).

IPRI is of the opinion that the water treatment plant should also be regulated as a Part A Activity as it processes the water from all mining activities and is a prescribed PPC activity in its own right, (i.e. the disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving physio – chemical treatment, Schedule 1 - 5.4 Part A (ii)).

The applicant is required to demonstrate that the proposal will have an acceptable environmental impact, including (a) releases to air, (b) discharges to surface/ground water, (c) disposals to land, and (d) noise. The PPC determination also assesses the energy efficiency techniques, waste management techniques, techniques to minimise the potential for accidents, techniques to mitigate any adverse environmental impact should an accident occur, and monitoring techniques, having regard to Best Available Techniques (BAT).

During the PPC determination IPRI will be requesting further information/clarification on the proposed development, which may result in design changes that may have an impact on the planning application.

IPRI is a joint Competent Authority with HSENI for the Control of Major Accident Hazards Regulations (NI) (COMAH) and the proposed development will also require a Hazardous Substances Consent.

Informative

- **The applicant will be required to apply for and obtain a Pollution Prevention and Control permit (PPC permit) prior to operating the installation. The applicant will be required to demonstrate that the operation of the proposed development will be BAT and have an acceptable environmental impact.**
- **The applicant will be required to apply for and obtain a hazardous substances consent prior to operating the installation.**

Land, Soil & Air

Section Reference: AE1/18/903175

Considerations

Regulation Unit (Waste Licensing Team) has considered the impacts of the proposal and makes the following comment: NIEA is not the competent authority with regard to the Mining Waste Management for this proposed facility. This is regulated by the Planning Authority.

Regulation Unit (Land and Groundwater Team) has considered the impacts of the proposal on the aquatic environment (especially groundwater) and on the basis of the information provided is unable to determine whether the proposal would have a significant adverse impact. Our substantive planning response is dependent on completion of a peer review by an Independent Expert. A meeting between DfI Planning and NIEA is necessary to discuss and agree the commissioning, management and securing funding for the peer review.

Explanatory note

The comments below are not exhaustive but serve to capture key points in support of the Regulation Unit (RU) position outlined above. These comments are made on consideration of:

A. SRK Consulting: Curraghinalt Project County Tyrone; Prepared for Dalradian Gold Limited, Environmental Statement – non-technical summary; dated November 2017
B. SRK Consulting: Curraghinalt Project County Tyrone; Prepared for Dalradian Gold Limited, Environmental Statement; chapter 8.4 Groundwater; dated November 2017
C. SRK Consulting: Curraghinalt Project County Tyrone; Prepared for Dalradian Gold Limited, Environmental Statement – Volume 3, Appendix C6 Groundwater Impact Assessment; dated November 2017
D. SRK Consulting: Curraghinalt Project County Tyrone; Prepared for Dalradian Gold Limited, Environmental Statement – Hydrogeology Baseline Report for the Curraghinalt Project, County Tyrone, Northern Ireland; dated October 2017

<u>Environmental Baseline</u>

The Environmental Statement presented is based on environmental baseline information that was collected up to 2016 (inclusive). That means that the baseline information is now approximately two years old. The applicant needs to make provision for the ongoing collection of site data (e.g. groundwater levels and groundwater quality). This new data should be integrated with the existing baseline data and interpreted to verify that baseline conditions have not significantly changed since 2016. For parameters where this baseline verification fails, models and impact assessments should be reviewed and updated.

Baseline information of interest includes (but not limited to):

- groundwater levels
- groundwater chemistry
- flows

Land, Soil & Air

Need for Independent peer review of Groundwater Modelling

NIEA is not the competent authority for Mining Waste and has not specifically commented upon the Mining Waste Management Plan. However, NIEA would highlight to DfI Planning, as the Competent Authority for The Planning (Management of Waste from Extractive Industries) Regulations (NI) 2015, that regulation 10 of the aforementioned Regulations requires the prevention of water status deterioration (surface water and groundwater), air and soil pollution to be demonstrated within a Mining Waste Management plan.

The groundwater aspects of the Mining Waste Management Plan, as with the Environmental Statement, are underpinned by a number of Groundwater models which have been used to assess the potential environmental impacts of the proposed developments on groundwater flows, geochemistry and water balance. These models include (list not exhaustive):

- Modflow including FlowSource extension: To model the dewatering of the mine, the extent of the cone of drawdown and impact on potential receptors (private wells, baseflow to streams, peat).
- PHREEC + Excel: To model seepage from DSF and associated ponds during operation and closure; as well as seepage from the backfilled underground mine following closure and groundwater rebound.

To support NIEA's substantive advice to Planning, it is necessary that an independent peer review of the Groundwater Modelling and key assumptions is undertaken. A meeting between DfI Planning and NIEA is necessary to discuss and agree the commissioning, management and securing funding for the peer review.

In support of this Peer review, the applicant should submit to Planning:

- all relevant model runs including input parameters and outputs
- Digital files of model to allow for peer review of the models.

There are uncertainties remaining to support the conclusions presented based on the model outcomes.

In the absence of this Independent peer review the Regulation Unit is not able to comment further on the proposed application including the backfilling of the mine utilizing tailings; and impacts on groundwater geochemistry and quantity.

Risks of major accidents and/ or disasters

The applicant should consider appropriate worst-case scenarios for the processes and activities taking place at the site during the different phases of the project (ongoing exploration/ collection of baseline data, operational phase of the mine, recovery phase and post-recovery phase). An assessment of potential environmental impacts should be conducted and appropriate mitigation measures identified. Possible worst case scenarios include (but are not limited too): recovery phase: failure of bulkhead – potential impact on flooding of mine and resulting contaminant concentrations in mine outflow.

Land, Soil & Air

Monitoring and action plan

The applicant needs to prepare a detailed monitoring plan and action plan for groundwater and surface water for agreement with NIEA.

The monitoring plan should address data collection during the different phases of the project: collection of baseline data, operational phase of the mine, recovery phase and post-recovery phase with provision made for:

- groundwater flow (for all burns that could be impact by changes in flow rate)
- groundwater levels and
- water quality (surface waters, shallow and deep groundwater)

.

The monitoring plan should also take into account that some of these phases can run parallel of each other, e.g. advancement of mine and collection of baseline quality samples while water is already being discharged (operational phase).

The monitoring plan should detail:

- samplelocations,
- sample frequency
- parameters to be monitored on site and parameters to be quantified via laboratory analysis
- data management & reporting to NIEA
- . Regular review intervals on the monitoring plan itself should be set and events that trigger a review of the monitoring plan identified.

An action plan including trigger levels should be developed addressing the following issues:

- the dewatered volume of water from the mine is significantly bigger or smaller than predicted

- the quality of dewatered and discharged water is of poorer quality than expected
- Emergency response plan to be actioned when significant exceedances occur.

Potential impact on sensitive receptors, especially private water supplies

The applicant has used the Modflow software and model to assess the potential impacts resulting from dewatering operations of the mine. For this purpose the underground has been split into five layers including superficial deposits, weathered bedrock and competent/ fresh bedrock. The majority of the dewatering of the mine takes place in the deepest layer of the model where the radius of the cone of drawdown is biggest. As a result deeper wells have the potential to be more affected than shallower wells by the dewatering. The applicant has used the biggest cone of drawdown for a conservative assessment of the potential impacts from dewatering.

Land, Soil & Air

While the assessment of the potential impacts resulting from dewatering seems reasonable, this depends on the independent peer review of the Modflow model.

No chemical baseline for sensitive receptors, especially private water supplies has been presented. RU would advise the applicant to obtain baseline chemical data and include the receptors in the chemical modelling (PHREEC + Excel) and assessment where appropriate.

Clarification requests

- Document C, page 46, table 5-6
  Please update the table and provide units for the concentrations presented.

Landscape

NIEA NED Protected Landscapes Team.

Section Reference: CB25686-1.

Planning Reference: LA10/2017/1249/F.

Considerations:

It is Natural Environment Division strategic opinion that the proposal is likely to have adverse effects on the landscape character, visual amenity and tranquillity of the Sperrin Area of Outstanding Natural Beauty (AONB) in that the siting and scale of the proposal is not sympathetic to the special character of the AONB in general and of the particular locality.

Explanatory Note:

The development proposal lies within the boundary of the Sperrin AONB which was originally designated in 1968 under the Amenity Lands Act 1965 and later re-designated in 2008 under the Nature Conservation and Amenity Lands Order (NI) 1985. The Strategic Planning Policy Statement (SPPS) 6.187 requires "development proposals in Areas of Outstanding Natural Beauty (AONB) to be sensitive to the distinctive special character of the area and the quality of their landscape, heritage and wildlife"; in addition 6.188 also states cumulative impact must be considered. It is noted that PPS 2 NH6 – Areas of Outstanding Natural Beauty states that planning permission for a new development within an AONB will only be granted where it is of appropriate design, size and scale. As the proposed development will be visible from a number of viewpoints and roads it is likely to result in significant visual effects. It will also contribute to cumulative landscape and visual impacts of development within this highly sensitive landscape due to the magnitude and location. It is not in keeping with the settlement pattern in the AONB and the locality; and, it is likely to impact the tranquillity of the AONB through the movement of vehicles along the roads and working around the site, the noise, the 24hr 7day a week working pattern and the lighting.

Natural Environment Division – Conservation Designations and Protection (NED CDP)

Section Reference: LA10/2017/1249/F CB 25686

Summary statement/Position
Due to the lack of information to date (08/08/2018), NIEA, as the statutory nature conservation body, objects to the proposal. NED advises that further information is requested by DfI Planning to enable a determination of the potential impacts on the designated site.

Considerations

The application site is hydrologically connected to the Owenkillew River SAC/ASSI, the Owenreagh ASSI, the River Foyle and Tributaries SAC/ASSI (hereafter referred to as designated site) which is of international and national importance and is protected by Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) and The Environment (Northern Ireland) Order 2002 (as amended).

There is also a hydrological connection to the River Finn SAC in the Republic of Ireland and therefore it is advised that consultation with the National Parks and Wildlife Service is initiated in this regard.

A new 33 kV distribution power line will be constructed to serve the site, however this aspect will be progressed by Northern Ireland Electricity (NIE) and information contained within the current application has not been relied upon due to an application for this structure having not yet been submitted. The content of the application(s) for the new power line represent materially linked works with the current application and therefore should be used to inform an over-arching assessment of the implications of the entire development.

Please note that this is a desk based response.

Explanatory note
From the information available to NED it is clear that the proposal is not connected with, or necessary for, the conservation management of the designated site.

NED has considered the proposal and highlights the following as potential impacts on the designated site:

Potential Impacts	**Designated site considerations**
Degradation of adjacent aquatic environment from contaminated runoff resulting during construction, operation and post closure.	The application is located in the direct catchment of both the Owenkillew River SAC/ASSI and the Owenreagh River ASSI. Downstream of the confluence of these rivers is the River Foyle and Tributaries SAC/ASSI. In the opinion of NED CDP, the information provided with the application thus far is not sufficient to determine that there would not be an adverse impact on the integrity of these designated sites. Further information and clarification is therefore required.

It is the view of NED that there is insufficient information for the planning authority to undertake a robust Habitats Regulations Assessment and for NIEA to undertake an assessment on any additional ASSI features. It should be noted that with the volume of material contained with

the application information provided is in places difficult to follow. The information seems to have been collated at differing times, further complicating the review process and makes reference at points to surveys, modelling or monitoring that is currently being carried out. It may therefore be the case that clarification and provision of appropriate references to the requested information may suffice.

On the basis of the current information the proposal is contrary to the Planning Policy Statement 2: Natural Heritage, Policy NH 1 and 3, in that development would, if permitted, be likely to have a significant effect on the designated site. NED therefore objects to the proposal as required by the precautionary approach set out in Commission Guidance: Managing Natura 2000 Sites and as required by the European Court of Justice in C 127/02 (Waddenzee).

NED considers the following information or clarification should be provided by the applicant;

1. Environment Statement (ES) Volume 2, Chapter 3, Section 3.4 outlines processing to be undertaken onsite. This indicates that DGL is developing a comprehensive Cyanide Management Plan to meet regulatory requirements. This is required prior to any authorisation being granted and should be submitted.

2. Section 3.6 outlines water management onsite. Freshwater for the project is indicated as being sourced from surface water run-off, contradicting the P1 form therefore clarification is required on this. It is also indicated that water entering the mine will be pumped to ponds at the proposed infrastructure site. Use of water during mining may have implications for groundwater quality – has this been included in the water quality/discharge assessment?

3. These ponds will be used to supply water for processing, spray water and 'other operational requirements'. What are the 'other requirements'? In addition, the use of the water ponds for spraying would potentially contain groundwater. Will any treatment be undertaken on groundwater prior to this and how will contamination and pollution of onsite watercourses be prevented?

4. Prior to commencement of underground works the existing treatment plant will be upgraded. It is unclear to what extent this will be undertaken and therefore how discharge standards would be achieved. Further information should therefore be provided to address this.

5. Section 3.8 outlines the construction phase of the development. It is proposed to transport rock produced in the creation of the mine portal to the surface by haul road and use as construction aggregate. CDP does not possess the necessary level of expertise to make comment on the suitability of excavated rock to be used in this manner. It is recommended that DFI Planning employ a suitably qualified contractor to make comment on acid generating potential of rock excavated from the site.

6. Section 3.9 outlines the construction phase. The DSF will be progressively reclaimed throughout the life of the mine, will be contoured and covered post-closure. Buildings and facilities will be demolished and other than the electricity sub-station and water management ponds, all surface infrastructure, utilities and machinery will be removed from the site. The site will then be re-vegetated. Rehabilitation will last approximately 1 year and will be followed by a period of post-closure monitoring to be agreed with the DFI. This is intended to demonstrate that the site is stable and has achieved closure objectives in accordance with relevant legislation. From the text it is unclear how the site discharge rates will differ from pre-development run-off rates. Will there be mitigation to ensure greenfield rates

prior to commencement? What is the proposed duration of monitoring proposed on closure of the site?

7. ES Volume 2, Chapter 4, Section 4.2 outlines water availability to rivers. At closure there will be no discharge and average flows will reduce but will remain 50% higher than natural pre-development flows. It is unclear whether discharge from the DSF has been considered in this assumption. It is also unclear how there will be no discharge yet flows in the Pollanroe Burn will remain at 50% above natural flows. Clarification on this should be provided.

8. Flows are not expected to result in over-topping of banks, bank erosion or deterioration of ecological habitats. It is unclear how this has been determined, e.g. has this been modelled or whether extreme events (e.g. storm events leading to floods during 2017) have been considered? It is considered likely that elevated flows will have a negligible effect on the Owenreagh River – downstream of the designation, area contains dense spawning records – indirect effects on FWPM. Again, evidence to support this should be provided.

9. At closure a passive water treatment system will be installed onsite to treat water discharges from the existing adit to the Curraghinalt Burn – forecast that water quality will not significantly affect water quality. Given the dependence on extremely high water quality for FWPM populations to be self-sustaining and that water quality is the main contributing reason for the population being unfavourable – i.e. no recruitment, then any discharge leading to impacted water quality should be considered as significant. When pumping of groundwater ceases beyond the operational phase of the development then water levels will rise, mixing with tailings, stored waste rock and mix with groundwater. Tailings will contain remnants of detoxified Arsenic. There will be contact with this and potentially mixing with groundwater. It would thus seem that contamination or migration of groundwater has the potential to allow contaminant migration and/or concentration. CDP does not possess the necessary level of expertise to comment on this. It is recommended that further information is sought from a suitably qualified specialist on this aspect.

10. With regard to groundwater draw down – if levels drop in peat (as has been forecast) is there potential for drying out of peat followed by sudden downpour and potentially increased risk of peat slide? A storm event during summer 2017 lead to significant regional floods which resulted in landslides. Clarification on whether this scenario has this been considered in as part of the peat slide risk assessment should be provided. All models onsite should aim to use the most recent available data, including this information.

11. Section 4.4 outlines the effects on air quality. The assessment concentrates on dust and concludes that there will be no exceedance of air quality objectives. There does not appear to have been consideration of NO_x as a result of road use and it is unclear whether the dust emissions include those from underground ventilation systems. This is important given the lifetime of the mine (and potential for expansion and further workings beyond the currently sought 25 years period) and also given there will be a fuel requirement of 4.3 million litres of diesel per annum. This should be focused on designated areas and habitats and cannot rely on monitoring of impacts after permission has been issued – i.e. information to complete an assessment of effects must be provided prior to any decision being made.

12. Section 4.11 outlines the risk from cyanide. Cyanide will be delivered and stored onsite in solid blocks as sodium cyanide. The section determines that the concentration of cyanide within the tailings will be below 10 ppm as outlined under the EU Mine Waste Directive and is sufficient to protect the environment and human health. It is unclear whether this assessment is on the basis of operations or whether the conclusion is based on long-term forecast beyond closure – i.e. will there be any concentration during inundation of groundwater, will there be any discharge. There is also no detail on the emergency response should an accident occur – this information is required. It is concluded that as cyanide will be encapsulated there is no viable mode of exposure, however there are no details on the longevity of tailings backfill, whether there would be any failure of surfaces and subsequent release of cyanide material to the environment. This should be provided.

13. Section 4.12 outlines that the power line will have no appreciable effect on any designation as the line will be installed underground using directional drilling. Only the final planning applications relating to this aspect of the development should be considered in the assessment.

14. Section 4.5.2 indicates that there will be potentially acid generating rock mixed with paste back-fill and placed below ground and below the final water rebound levels. It is unclear how effective this will be to ameliorate acidification of water and subsequent discharge if the mine overflows or contamination of groundwater. CDP does not possess the expertise to comment on this – either NIEA Groundwater Team or independent specialist input is required and should be sought.

15. Section 4.6 outlines mineral processing onsite. The general process of mineral processing will take the form of excavation, crushing, grinding, flotation concentration, filtration, concentrate regrinding, leaching and adsorption, carbon stripping, electro-winning, gold refining and cyanide recovery and detoxification. Cyanide will be used in the processing of the gold ore during the leaching process. Cyanide will be added at a rate of 2,000 – 3,000 ppm (0.2 – 0.3 %). Cyanide causes preferential dissolution (leaching) of gold and silver into solution after which carbon granules are added to provide a surface for the metals to adhere to (adsorption). The 'slurry' of material is then depleted of gold and is pumped for the cyanide recovery and detoxification step. This circuit is expected to process between 100 and 200 tonnes of waste material per day. It is unclear whether this capacity would be sufficient to completely treat all material each day. Will there be a requirement to store cyanide contaminated materials onsite? If so, where, how much, how long, what mitigation is in place, etc?

16. With reference to DSF and underlying HDPE membrane, is there potential for heavy rainfall, percolation and landslips to occur? Has this been modelled and does it provide evidence of long term stability, including impacts as a result of climate change? This information should be provided.

17. In terms of acid generating potential, the tailings are described as having a high acid generating potential. CDP does not possess the necessary level of expertise to comment on this aspect of the proposal. In the event that this expertise is not held by any consultee it is recommended that independent expertise is acquired to provide an assessment of testing methodology, results and conclusions reached.

18. Groundwater depth onsite is described as being lower than both the Owenkillew and Owenreagh rivers. Low permeability modelling indicates that there is no connectivity to the rivers and mine workings. This appears to be a contradictory position to that outlined further in the ES (see Section 6.11.3 and details below) which indicates that groundwater connectivity to designated sites is present. Clarification on this is required.

19. ES Volume 2, Chapter 6 details the soil geochemistry. Section 6.8 details surface water onsite. Flow data is presented from Rivers Agency (now DFI Rivers). The data appears to be from 2013 and thus it is unclear whether full consideration of flows over a longer duration has been made. This is of particular relevance given the floods of 2017 and the subsequent landslides in the area of the Glenelley Valley. Clarification is required including details surrounding whether the site is adequate to cope with floods of the scale of 2017.

20. Table 6-18 outlines a range of project guideline values against which surface water quality has been assessed. It is unclear what monitoring will be in place during the works. How will water quality be monitored during works? Will this include both upstream and downstream points? Will this be real time? In the event that there is an exceedance of standards, what happens? How will the efficacy of the measures be determined?

21. Section 6.11.3 outlines groundwater in the area. This section indicates (in contradiction to section 4.7 – see previous points) that "groundwater elevations and flow directions provide evidence for a groundwater system that drains into local burns or directly to the Owenkillew or Owenreagh Rivers. Within the river valleys some limited discharge from bedrock to glaciofluvial and alluvium aquifers is likely to occur with eventual discharge from the latter deposits to the rivers as baseflow contribution...From the available information, it is concluded that most groundwater flow is likely to be shallow and discharging locally to surface waters". Given that there is connectivity further detail should be provided in relation to this aspect and the potential for contamination to migrate and ultimately discharge into designated rivers.

22. Section 6.12.2 outlines NORM and Radon gas presence. CDP does not possess the necessary expertise required to make comment on this aspect of the development. It is advised that independent technical input is sought with respect to the potential exposure, mobilisation and/or discharge of such materials and the potential impact on designations (e.g. through mobilisation and subsequent deposition and/or discharges, etc.).

23. ES Volume 2, Chapter 7 outlines the biological, human and aesthetic environment. Section 7.2.4 describes peat habitats onsite. With regard to the proposed infrastructure site, it is classified as mainly blanket bog habitat with a variation in depth from 0.2 m to a maximum depth of 1.6 m. Himalayan balsam was also found in a hedgerow at the south of the proposed infrastructure site. Is remediation proposed? Details relating to this (along with any ongoing monitoring and management) should be provided given the connectivity with designated sites.

24. Page 3 of this chapter outlines that SLR has been commissioned to undertake monitoring of features onsite including badgers, bats, otter and where there are areas of Devil's Bit Scabious, marsh fritillary. These studies commenced in September 2017 and are required for the purposes of assessment.

25. Section 7.7 outlines the impacts of noise from the works. The assessment primarily focuses on residential impacts and does not take consideration of the potential impacts on river habitats. Further information is required regarding the potential impacts of blasting onsite as a result of vibration and transmission to adjacent watercourses. High levels of vibration can lead to impacts on Atlantic salmon and trout (main host species in the Owenkillew) through damage to swim bladders. How will such effects be mitigated?

26. Section 7.8.2 outlines the air quality findings. This is aimed mainly at residential locations and does not make mention of deposition within designated sites. Further information is required in relation to aerial deposition within designated sites and also an in-combination consideration in terms of aerial deposition and discharge consent quality with respect to metal content and other contaminants.

27. ES Volume 2, Chapter 8, Section 8.3 outlines surface water around the site along with emergencies and failures as a result of extreme conditions. The proposed reverse osmosis treatment works will treat water discharges to better than drinking water standards. How will this compare to background levels? Will this be suitable for the protection of freshwater pearl mussels? Given the conservation objectives for the Owenkillew River SAC/ASSI the Owenreagh River ASSI include provision for the improvement of water quality, will this be an improvement in current water quality in the designated areas?

28. Table 8-8 consolidates the surface water impacts assessment. This appears only to consider the direct effects as a result of the proposal. It also designates the Pollanroe Burn as a low risk as it is a minor watercourse with limited ecological value. While this is true, given the connectivity with the Owenreagh ASSI and Owenkillew River downstream degraded water quality in this watercourse would potentially be significant.

29. Section 8.3.2 details the approach to surface water impact definition. Given water quality is the single biggest factor that determines FWPM status (favourable or unfavourable), site discharges should not contribute to this (i.e. no elevated levels should be discharged to the catchment above background) and should aim to better the background water quality and offer an improvement. For the purpose of the assessment provided it has been assumed that the maximum permitted standards under the consent to discharge will be met. It is stated on page 51 of chapter 8 that the 'proposed reverse osmosis water treatment plant will be able to achieve concentrations below the criteria in the water discharge consent'. Evidence should be provided to this effect and also to show that there will be no exceedance of background levels.

30. Section 8.3.3 outlines the potential impact as a result of construction, operation and closure of the proposed mine. During construction works and prior to the construction of the west pond and waste water treatment works, water management measures will be installed at each construction area. The measures undertaken will be site specific and temporary and will include SuDS systems pumping to grassland via the use of temporary settlement lagoons/tanks, geotextile bags or filter presses and/or a hydrocarbon interceptor as appropriate. A flocculant may also be used. It is 'anticipated' that infiltration to grassland will be sufficient for 'normal rainfall conditions' but that temporary storage will also be required to accommodate short term storm events. This approach appears to leave detailed design until after

authorisation and is not in line with the requirements of the Habitats Regulations. Therefore require full details on temporary measures, including confirmation of all treatment locations, equipment and also evidence that the proposed grassland areas will be able to accommodate any infiltration, particularly given that much grassland across the site is described as marshy and therefore likely to be waterlogged or close to this. It is acknowledged that the CEMP indicates an infiltration rate, however this appears to relate to generally accepted figures rather than site specific test data. There is therefore the potential for deleterious matter to enter the designated sites (or watercourses connected to these sites) through run-off. This section also outlines that there will be monitoring of watercourses downstream of the site with comparisons of results with the discharge consent standards. It is unclear how this monitoring will be undertaken and what action would be initiated in the event that any exceedance was discovered. Full details should be sought in order to undertake the HRA.

31. During stage 2 of construction the western pond and treatment works will have been constructed. Surface water will be routed to the west pond where it will be stored prior to discharge. The ES does not confirm that the WWTW will undertake treatment of construction drainage prior to discharge. Further information is required in the form of clarification as to the treatment that will be in place during stage 2 of the construction phase (pages 55 and 56 of Chapter 8). The text indicates that surface water is to be routed around the proposed infrastructure area and directed to the west pond. What will be the treatment and fate of construction based discharge?

32. It is indicated that there will be increased flow in the Pollanroe Burn as a result of flows in the Owenreagh River downstream of the confluence with the burn. Given the increase in flow there is therefore the potential for increased levels of erosion. With this in mind, and given the connectivity to downstream designated sites, there is the potential for elevated levels of erosion in these areas. It is therefore necessary that further information is provided to address the potential for erosion downstream of the proposed site as a result of increased flows and also future effects as a result of climate change. This must also address the impact of run-off from the proposed DSF at closure which are expected to be higher than pre-development rates.

33. In terms of emergencies and failures and with regard to the water storage ponds onsite, it is indicated that as *most* of the water would be stored below the surrounding land level there is no risk of release of water due to failure of impoundment. This is not the case where some of the water would be above the level of surrounding land and therefore this potential risk cannot be dismissed. Further consideration is therefore required in relation to this aspect of the development and a full plan of mitigation, containment and remediation with respect to downstream designated areas must be provided.

34. In terms of ensuring compensatory flows in the Pollanroe Burn during drought conditions, it is proposed to use the clean water pond. In the event that there is no water in the clean water pond it is proposed to pump groundwater for this purpose. However, it is unclear whether groundwater would be subject to any treatment and what standards would be attained under these circumstances. Therefore further information relating to this aspect of the development is required, including how adverse impacts on the downstream designated sites would be avoided.

35. Section 8.3.5 outlines impacts on surface water quality on the Pollanroe Burn. The specified discharge consent limit for suspended solids indicated in the ES is 50 mg/l. It is acknowledged in this section that 50 mg/l would result in exceeding the baseline of the receiving watercourse (Pollanroe Burn) which has levels below the limit of detection other than the occasional elevation during rainfall events. The most recent update of the common standards monitoring document for freshwater habitats containing Atlantic salmon indicate that there should be no unnaturally high levels of suspended solids. The release of discharge with suspended solids above the background level (as per the text provided) would lead to discharge of unnaturally elevated levels of suspended solids. Details on how this measure will be met should be provided (including how monitoring will be facilitated onsite).

36. With regard to discharge to the Curraghinalt Burn, it is predicted that iron will rise above the baseline conditions, as will manganese during closure by over 100% and the value for silver is unclear from the information (the proposal is to use a laboratory with a lower limit of detection therefore it seems that this information is currently unknown). The proposal is to use passive drainage to treat water upon closure of the mine. Full details relating to the proposed passive closure, including the standards that would be achieved as a result of the system, must be provided.

37. Section 8.4.4 outlines the potential impacts on groundwater. It is acknowledged that there will be a drop in water levels in groundwater abstraction wells. One well is located north of the Owenkillew River and is predicted to drop by a level in the region of 2 metres. Given that there would appear from data to be a connection with groundwater and the Owenkillew River (outlined in Section 6.11.3), further information is required in relation to the likely effects of water levels on the Owenkillew River SAC/ASSI given it is closer to the mine site. It is unclear whether the Owenreagh River ASSI has been subject to this assessment and therefore the information should be provided for this site also.

38. It is forecast that there will be a drawdown of water levels in peat onsite as a result of the mine. The drawdown would be less than 20 cm, however given the waterlogged nature of peat and the fact that the water level is required to be at or close to the surface this could potentially represent a significant drop in water levels. The potential exists therefore that this would be sufficient to result in drying out, oxidation and impacted hydrology. This should therefore be investigated with regard to the risk to peat slide in the event that heavy precipitation were to occur over the longer term and the information provided to enable assessment.

39. Section 8.4.7 outlines potential impacts on groundwater quality from construction activities. It is indicated that rock required for construction will be imported aggregate and re-used non-mineralised rock from outside the mineralised area, however samples have not been obtained from the decline portal. Further information is therefore required on the chemical composition and acid generating potential of rock to be used, volume/tonnage and the source locations (for both onsite source and imported). Conducting tests prior to use but after permission has been granted (as per the table detailing impact GW05) would be in contravention of the requirements of the Habitats Regulations insofar as the degree and extent of effects would be uncertain at the time permission was granted.

40. Section 8.4.8 outlines the effects on groundwater from backfill paste, waste rock or open walls of the mine post-closure. This section indicates that at year 100 the predicted concentrations of hazardous substances in the mine rebound water, and

in the groundwater immediately adjacent to the mine, would be below the discernibility criteria based on background concentrations. Given the evidence indicates connectivity with the designated watercourses in the area, it would seem that groundwater is to be used as a mechanism to enable dilution of mine concentrations of materials in infiltration water. This raises the potential for migration of contamination to designated sites in the area.

41. Further to the above, it is indicated that if exceedances occur the paste backfill mixture would be amended until suitable results are delivered in the waste leach tests and then in-situ samples in the mine. This methodology appears to outline a 'trial and error' approach that appears to highlight doubt as to the effectiveness of the paste backfill mixture to prevent deleterious effects on groundwater and potentially the Owenkillew and Owenreagh Rivers. This approach is in contravention of the requirements of the Habitats Regulations and Environment Order which would require certainty beyond reasonable scientific doubt. Further information and clarification on this aspect of the development is required, namely how will adverse impacts on the integrity of any designated sites be avoided.

42. Section 8.4.9 outlines the effects on groundwater from the DSF post closure. It is indicated that the level of solutes will decrease along a preferential pathway towards the toe drain and as such there will be migration of contaminants of concern to underlying groundwater. It is acknowledged that this will have an impact on the underlying groundwater quality in the vicinity of the DSF. Further information on mitigation/remediation of this is therefore considered necessary, particularly given the permanent status of the DSF and long term migration of such contaminants to designated watercourses in the area.

43. Section 8.11.8 outlines changes in water quality impacting on receptors during the project. This indicates that the project discharges treated water to two locations (Pollanroe Burn and Curraghinalt Burn). Further in the text it is indicated that when the water level reaches capacity in the existing adit groundwater will discharge through the adit into the Curraghinalt Burn. It is indicated that this outflow would be treated through a constructed wetland. Full details of this should be provided, including how additional input (storm events) would be managed and also the impact on discharge quality over the longer term and any ongoing maintenance that would be required to maintain long term efficacy until pre-development levels are maintained.

44. During operation modelling predicts an exceedance in water quality standards for the Owenreagh River for silver and free cyanide. The explanation for this is that different detection limits were used as an input to the water quality predictive model. The text indicates that the use of reverse osmosis during water treatment is expected to reduce the levels of free cyanide concentrations in the Owenreagh River. Given the discrepancy in values used during modelling and also the fact that treatment of cyanide levels is deemed necessary, further clarification on the accuracy of the model should be provided. This information should demonstrate that there will be no discharge of cyanide as a result of mining discharges given the statement in section 8.14.9 that " cyanide is processed in a closed and carefully ...
controlled system...". If this were the case (i.e. closed) then there should be no discharge of cyanide from the site, including to groundwater (i.e. paste backfill tailings including attempted encapsulation of cyanide containing materials).

45. Section 8.11.12 outlines the potential impacts from ground vibrations on ecological receptors. The magnitude of vibrations is expected to be generally less than 6 mm/s and is expected not to have an impact on ecological receptors. It is unclear to what extent the Owenkillew River SAC/ASSI has been considered (i.e. does the assessment of effects include Atlantic salmon, otters, etc.) and the assessment completely omits effects on the Owenreagh River ASSI. Evidence to support the assertion that effects would not be significant has not been provided and the rationale behind the conclusion reached is unclear. Information detailing these effects should be provided. The charge size/explosive capacity should be outlined and the assessment details should relate specifically to this size.

46. ES Volume 2, Chapter 10 contains the Environmental and Social Management Plan. Table 10-2 contains measures to reduce adverse effects on the Pollanroe Burn including limiting of run-off rates to greenfield values. It is unclear what the current greenfield run-off rate is and therefore unclear what this measure would actually mean in practice. It is also indicated that the water management ponds would be retained at closure as a means of attenuation. It is unclear what the capacity of these would be and it is unclear whether ongoing maintenance would be undertaken to maintain this attenuation capacity. Further details are required in relation to the current rate of greenfield run-off, how this is proposed to be met and how it would be managed long term.

47. In addition, further details are required regarding the management of the drainage ponds post-closure in order to prevent loss of effectiveness and significant increases in drainage. This could potentially lead to effects on erosion not only in the Pollanroe Burn, but also downstream in the Owenreagh River (undesignated but known to contain a population of spawning Atlantic salmon which are a requirement in the lifecycle of Freshwater Pearl Mussels) and also the Owenkillew River SAC/ASSI

48. Further to the above, proposals to minimise impacts on water quality of the Curraghinalt Burn (a tributary of the Owenkillew River SAC/ASSI) include the installation of a passive water treatment system. It is unclear what design this would take the form of, whether any maintenance would be required periodically (e.g. removal of metal precipitates, the long term effectiveness has not been demonstrated, what effects climate change would have (e.g. increased rainfall and increased treatment capacity required), how metal precipitates would be managed on an ongoing basis and where/how they would be disposed of, whether monitoring would be installed to verify discharge standards are being met and what measures would be put in place should the background change leaving the proposed system discharge above the receiving water quality (specifically where improvements are facilitated for the benefit of FWPM).

49. As part of the proposed list of measures, groundwater is to be monitored throughout construction and operation to confirm no unexpected effects are occurring as a result of seepage from the DSF. The language used in this indicates there is a degree of doubt as to the conclusions reached and there is also no information provided on what measures would be implemented in the event that any effects are recorded. Additional to this the DSF leaching is to be monitored post-closure. It is unclear what criteria will be applied and what actions will be implemented should effects be recorded. Further information is therefore required in relation to this (including any actions proposed and remediation in the event of effects).

50. There is information provided in relation to minimising the impact of emissions from the process stack on receptors. It is proposed that information relating to this would be submitted as part of the PPC application which would include equipment controlled shutdown or corresponding area process facility shutdown where any abatement measures fail. This approach is contrary to the requirements of the Habitats Regulations which require the entire project to be considered at the time of authorisation. Full details regarding these mitigation measures must therefore be supplied as part of the planning process.

51. In terms of minimising changes in water quality impacting on ecological receptors, it is proposed that during construction there would be buffer zones between earthworks and watercourses onsite. Where it is considered necessary for construction within a buffer zone it is proposed that there would be site specific mitigation on a case by case basis. Given the assumption that the proposal had been designed in its entirety, full details of all buffer zones and where precisely construction would be required inside such a buffer zone should be provided. This should fully detail all mitigation measures, their size, scale and duration of use (and demonstrate they are in accordance with the CEMP referenced – see additional points raised below).

52. Section 10.3.5 outlines vibration from blasting. Vibration is to be monitored in proximity to the nearest receptors to ensure appropriate thresholds are not exceeded. This will be on a daily basis during operation and recordings will be made. It is unclear where the receptors for monitoring will be located and it is unclear against what parameters the monitoring will take place nor how significance will be determined. Further information to clarify these details, with the inclusion of an assessment of levels in designated sites, must be provided.

53. With regard to section 10.5 (mitigation associated with the power line), the power line is a materially linked aspect of the entire project and therefore it should form part of any assessment made.

54. With regard to the CEMP, section 3.2 contains measures relating to pollution prevention. Page 10 contains text indicating that detailed procedures and methods covering planning, design, management, monitoring of water quality, explosives, management, concrete truck wash-out and spill mitigation/prevention/response measures will be agreed in advance with NIEA WMU. Given this is part of the planning application, and in order to achieve compliance with the Habitats Regulations, all measures relating to this must be provided prior to any authorisation being issued. Therefore all details relating to this should be provided or clarification provided as to where these can be found in the ES.

55. Table 3-2 of the CEMP provides an overview of the construction phasing. It is noted that a degree of works that would be likely to result in release of suspended solids (e.g. formation of peat storage areas and drainage of this material) would take place during the Atlantic salmon spawning season. This is the most sensitive season in terms of water quality and therefore is susceptible to adverse impacts from degraded water quality. There will also be works throughout the smolt migration season including tunnelling works (blasting with explosives). Given the lack of information regarding the determination of impacts this effect could potentially be significant. Information relating to this is directly related to potential effects on Atlantic salmon.

56. Table 5-2 provides details of construction phase mitigation. It is stated that 'Careful consideration to the timing and phasing of the construction of the water management system will take place to ensure that wherever practically possible works will be undertaken outside the winter months...". As detailed above, this does not appear to have occurred and is of relevance given works undertaken during the winter months (where levels of precipitation are generally higher). Clarification on phasing of the works with regard to the Atlantic salmon lifecycle should be provided.

57. Section 3.4.14 outlines construction of the water management ponds. It is indicated that the occurrence of any storm events beyond a 1 in 1000 year event would be managed through an agreed response plan involving non-routine measures. Given the potential for over-topping or failure of the ponds leading to large scale release of water, the emergency response plan is required prior to permission being issued. Similarly, it is indicated that an agreed lining system will be installed to ensure the ponds are fit for purpose. This is not compliant with the requirements of the Habitats Regulations as information directly relevant to the proposal (and its efficacy) has not been provided. Full details regarding this should therefore be provided.

58. Section 4 outlines an Environmental Management System (EMS). It is stated that 'DGL are developing an EMS' and that 'All contractors will be required to implement management system that align with the DGL EMS'. Given that it is unclear what measures will be implemented it is therefore not possible to determine the effectiveness of any measures proposed nor make an assessment of impacts on the surrounding designated sites. In order for the proposal to be compliant with the requirements of the Habitats Regulations, this is required prior to any authorisation. This information should be provided.

59. Section 4.5 relates to contractor responsibilities. This section indicates that contractors will be required to produce Construction Method Statements where works are to be conducted near or are liable to have an impact on a watercourse. This is not an approach that would be in-line with the requirements of the Habitats Regulations. While it is acknowledged that a CMS is works and location specific, details of all measures that will form part of such method statements must be provided prior to any assessment being made in relation to any authorisation for the project.

80. Section 6.1 outlines the scope and objectives of the Emergency Response Plan. It is indicated that an Environment Emergency Response Plan (EERP) will be required as part of the final CEMP. Given this use of language, this raises doubt as to the reliability of the current document and indicates that it is in draft format. The final CEMP must be provided and include all measures outlined along with any documents referenced as being currently drafted or where they will be drafted.

81. With regard to Volume 3, Appendix B7 – Peat Landslide Hazard and Risk Assessment, CDP is aware that GSNI has been consulted and has requested an extension (see response received 04/07/2018). It is likely that comment on the robustness, suitability and reliability of the assessment will be made by GSNI and therefore it is considered that this is required in order to adequately determine the likelihood of adverse impacts from the proposed development and therefore assessment of this aspect of the development should await this response.

82. The ES includes an evaluation of paste backfill reactivity relating to the proposed mine development. With regard to the content of this document, CDP does not

possess the necessary expertise to comment on the validity or findings of this work. It is therefore considered that it may be necessary for an external consultant, independent from the project and with the necessary expertise to be contracted to undertake consideration of this content.

63. Given that there is an indication that further exploration would be undertaken during the operation phase of the works (e.g. Planning Statement document, section 4), and also given the apparent limits placed on currently designed infrastructure (e.g. water management ponds) full details on the currently expected extent of this and how processing might be accommodated, should be provided. This aspect would be materially linked to the development of the proposed mine.

64. Volume 3 of the ES includes a Mine Waste Management Plan. This includes an assessment of acid rock drainage and metal leaching characteristics. In terms of the conclusion reached that the rock is inert and non-acid generating, CDP does not possess the necessary level of expertise to provide comment on this aspect of the development. As previously indicated, an independent consultation with necessary expertise should be consulted regarding this aspect of the development. It should further be highlighted with regard to the content of the management plan that although there is a requirement under the Mine Waste Directive to meet the requirements of the Water Framework Directive, this would not necessarily provide for the protection of sites designated as part of the Natura 2000 network. This measure therefore should not be relied upon as a way of demonstrating that the Owenkillew River SAC/ASSI (or for that matter the Owenreagh River ASSI) would be sufficiently protected. Standards should aim to achieve the highest level of protection possible. The EU guidance document 'Links between the Water Framework Directive and Nature Directives' states "According to WFD Article 4.1.(c) the WFD objective of good status may need to be complemented by additional objectives in order to ensure that conservation objectives for protected areas are achieved. Art. 4.2. WFD says that "where more than one of the objectives ... relates to a given body of water, the most stringent shall apply"".

65. The ES contains a document titled 'Proposed Infrastructure Site Peat Management Plan For The Curraghinalt Gold Project, County Tyrone, Northern Ireland'. Table 4, Section 6 of the document provides a table showing a summary of the peat balance volume. The table includes a discrepancy in the available storage figures and excavated volumes. The figures provided amount to 215,382 m3 whereas the specified total is 165,568 m3. This should be clarified.

66. Connected with this aspect of the development, there will be significant storage of peat onsite. Given landslip events in the area as a result of high rainfall during 2017, it is unclear whether this has been factored into the storage of materials onsite. The risk of catastrophic slope failure across the site as a result of this should also be clarified. Section 7.3 outlines some measures relating to this, including the provision of Factor of Safety (FoS) stability analysis where significant depths of peat will be stored. Full details relating to design of peat storage areas, including consideration of stability and risk of failure, are required prior to any authorisation. This information should therefore be provided.

If NED is to be re-consulted following the submission of this information, the assessment undertaken by the planning authority should be included.

Natural Heritage

Section Reference: CB25686-1

Planning Reference: LA10/2017/1249/F

Date of NED response: 30 August 2017

Considerations

NIEA Natural Environment Division (NED) has concerns with this proposal and considers that, in the absence of further information, the proposal would be contrary to the Planning Policy Statement 2: Natural Heritage and the Strategic Planning Policy Statement for Northern Ireland in that the development would have an unacceptable adverse impact on priority habitats and insufficient information has been submitted to establish otherwise.

Explanatory note

A site visit was carried out by NED staff on 16 August 2018.

The proposed development comprises a number of elements including:

1. Infrastructure Site
2. 33 kV distribution power line from the Strabane 110/33 kV substation, which will be subject to a future and separate planning application
3. Existing Passing Bays on the Camcosy Road and a proposed turning point for heavy goods vehicles off Lenagh Road
4. Underground Mineral Extraction Area
5. Mineral Exploration Area for future exploration of the Curraghinalt deposit by means of underground exploration tunnels

Infrastructure Site

The infrastructure site covers approximately 144.73ha on the south side of the ridge in the valley of the Owenreagh River and is predominantly fields of improved grassland interspersed with small blocks of coniferous plantation and linear belts of broadleaved and mixed plantation woodland. Degraded blanket bog occurs on the higher parts of the ridge where remnant pockets of peat support a mosaic of mire and wet heath habitats. The site also supports a badger sett, bats in Pollan Rua Cottage, smooth newts and common lizard. The openings to the ventilation raises will be in a mosaic of blanket bog, wet heath/acid grassland mosaic and marshy grassland that is heavily degraded and impacted by drainage and grazing.

Priority Habitats

The Phase 1 Habitat and Phase 2 Vegetation Surveys that were undertaken have identified a number of Northern Ireland priority habitats (NIPHs) within the development area and infrastructure site.

The NIPHs present within the infrastructure site include:

1. Blanket Bog NIPH: The construction of the infrastructure site will result in direct and indirect impacts to Blanket Bog, so compensatory measures are proposed, including the protection and restoration of retained peatland habitats within the infrastructure site, habitat creation through re-use of peat overburden and compensation through the restoration of existing peatland

habitats within the overall application site. Provided the proposed compensatory measures are implemented, no significant impacts are likely to the NIPH of Blanket Bog.

2. Lowland Heathland NIPH: The construction will result in direct and indirect impacts to areas of Lowland Heathland, so compensatory measures are proposed. The heath within the Area A management units will be enhanced and managed by control of grazing and drain blocking. Provided the proposed compensatory measures are implemented, no significant impacts are likely to the NIPH of Upland Heathland.

3. Marshy Grassland: Purple Moor-grass and Rush Pasture NIPH: The construction will result in the loss of an area of the NIPH of Purple Moor-grass and Rush Pasture. Compensatory measures are proposed for loss of this NIPH, including protection and restoration of marshy grassland habitats within the infrastructure site. Provided the proposed compensatory measures are implemented, no significant loss of this area of Purple Moor-grass and Rush Pasture NIPH is considered likely.

4. Valley Mire: Purple Moor-grass and Rush Pasture and Upland Flushes, Fens and Swamps NIPHs: Valley mires are mapped in four main locations within the infrastructure site, including along the narrow valley at the head of the Pollanroe Burn, adjacent to a tributary of the Pollanroe Burn north of Pollan Rua cottage, and in the south-east of the site. The ES states that they contain elements of both Purple Moor-grass and Rush Pasture and Upland Flushes, Fens and Swamps NIPHs. These areas will all be destroyed by the construction of the infrastructure site. The compensation that is proposed for the peatland and heathland habitats is also intended to compensate for loss of the Lowland Fen areas, although the ES acknowledges that it is not possible to re-create Valley Mire elsewhere to compensate for like-for-like loss. However, the loss of this habitat has been considered against the overall area of land that is offered for compensatory works to achieve biodiversity gain as a result of the proposed mine development.

   NED notes that no Northern Ireland Habitat Action Plan (HAP) has currently been written for Upland Flushes, Fens and Swamps, so the UK HAP for this habitat applies. This HAP defines this habitat as "restricted to upland areas (i.e. above the limit of agricultural enclosure, so complementing but not overlapping the fens priority habitat)". Based on the species recorded in Target Notes TN37, T54 T94 and T108, the Fen NIPH category of Poor-Fen appears to apply to these fen areas. NED notes that the quadrats do not include percentages or domin scores for species.

   NED requires clarification as to whether the areas mapped as Valley Mire are the NIPH of Fens or Upland Flushes, Fens and Swamps. NED notes that no compensation is considered possible for loss of Valley Mire, but recommends that consideration is given to creation of areas of Fen within, for example, the Habitat Enhancement Areas or Peatland Management Units.

5. Ponds NIPH: The construction will result in the direct loss of three ponds within the infrastructure area. Compensatory measures are proposed for loss of this NIPH through the creation of three new ponds. Provided the proposed compensatory measures are implemented, no significant impacts are likely to the NIPH of Ponds.

6. Rivers NIPH: The development of the mine infrastructure will result in direct loss of 975m of the headwaters of the Pollanroe Burn and its tributary. NED notes that ES Volume 3 C8 Ecological Impact Assessment and Baseline Reports states that it will not be possible to mitigate or

compensate for the loss of these headwater streams, but that, because the habitats along the Pollanroe Burn and its tributary provide limited opportunities for wildlife, these watercourses are therefore unlikely to meet the Headwater criteria to qualify as Rivers NIPH.

NED notes that no Northern Ireland Habitat Action Plan (HAP) has currently been written for Rivers, so the UK HAP for this habitat applies. This HAP defines this habitat as fulfilling one or more of the listed criteria. NED is of the opinion that these watercourses qualify as the Rivers UK priority habitat under the criterion of Headwaters because they are within 2.5km of its furthest source as marked with a blue line on Ordnance Survey (OS) maps at a scale of 1:50,000, and have not been significantly altered from their natural state.

NED require clarification regarding the statement in the ES that Pollanroe Burn and its tributary are unlikely to meet the Headwater criteria to qualify as the Rivers NIPH because they provide limited opportunities for wildlife.

NED notes that the ES states that no mitigation or compensation is considered possible for loss of these watercourses. The proposed development will include diversion ditches along the northern, western and eastern boundaries to manage the flow of water around the site. NED would request that consideration is given to engineering these ditches to create as naturalistic watercourses as possible, especially as the diversion ditches will be left in place after the mine has closed to manage surface water runoff around the Dry Stack Facility (DSF).

7. Hedgerows NIPH: NED notes that the hawthorn dominated hedgerow at Target Note (TN) 154 has an associated bank which supports a number of old woodland indicator species, including Wood Anemone, Opposite-leaved Gold Saxifrage, Foxglove, Wood Sorrel, Primrose and Common Dog-Violet. The species-rich ground flora qualifies this as Hedgerows NIPH, but because it is not within the infrastructure area, it will not be impacted by the proposed development
   NED notes that a total of 1714m of species-poor hedges lie within the infrastructure area, and will be lost by the proposed development. The majority of these hedges are dominated by hawthorn, but because they have less than four other native woody species, they would not qualify as NIPH. However, the hedge at TN42, which will be within the infrastructure site, includes Downy Birch, Hawthorn, Ash, Sessile Oak, Dog-rose and Goat Willow. NED will require clarification as to whether this hedge is NIPH, and if so, what compensation will be proposed.

8. Mixed Ashwood NIPH: This is present on the steep banks of the lower sections of the Pollanroe Burn. It is outside the footprint of the proposed development and will be retained. No impacts are therefore considered likely to Mixed Ashwood NIPH.

Bats

NED notes that a number of bat surveys were undertaken at the infrastructure site between April 2015 and July 2016, including:

- Assessment of Potential Roosting Features (PRFs) of all buildings, trees and any other suitable features within the proposed infrastructure site and its immediate surrounding area: of the nine buildings and other structures within the proposed infrastructure site, only Pollan Rua Holiday Cottage and the derelict farm building were considered to have PRFs.

Natural Heritage

- Dusk Emergence and Dawn Re-entry Surveys at Pollan Rua cottage and the derelict farmhouse: the surveys recorded small numbers of Common Pipistrelle (maximum of nine), Soprano Pipistrelle (maximum of one) and Leisler's bas (maximum of one) emerging from Pollan Rua cottage, and one Leisler's bat emerging from the derelict farm building

- Winter Hibernation Survey of Pollan Rua holiday cottage and its associated outbuildings and summer house: Droppings found within the roof void of the cottage were identified as Brown Long-eared Bat, indicating that this building is an undetermined main roost.

- Manual and automated activity surveys of foraging and commuting activity within the infrastructure site: six species of bat were recorded at the site including common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long-eared bat and a Myotis species

The bat surveys concluded relatively low levels of bat activity within the infrastructure site, with the main areas of activity centred on Pollan Rua cottage and the lanes and tracks to the north and east of this building which were used both for commuting and foraging. Key foraging areas were found to be the semi-mature trees and blocks of coniferous woodland on both sides of this route, which provided relatively sheltered foraging areas.

Pollan Rua cottage is a maternity & hibernation roost for Common Pipistrelle, a maternity roost for Soprano Pipistrelle, and a day roost for Brown Long-eared bat. The derelict farmhouse is a night roost for Leisler's bat.

Because the proposed gold mine development will result in the destruction of Pollan Rua cottage, the bat roosts within it will also be destroyed. The development will also result in the loss of foraging and commuting bat habitats. Mitigation and compensation measures are proposed to minimise impacts to bats, including the closure of the existing roosts under NIEA licence, the creation of a new purpose-built bat house prior to the removal of Pollan Rua cottage, and enhancement of commuting and foraging habitats. In addition, the new bat house and boxes will be monitored during the mine construction works and for two years afterwards.

The lighting plan shows that most of the site will remain dark during the operational phase. All the alternative bat roosting sites and the retained foraging and commuting habitat within the proposed infrastructure site will remain un-lit. A dark corridor will be maintained between each of the three parts of the site where lighting is proposed to maintain linkages to the wider landscape. Light overspill will occur in areas where bat foraging and commuting habitat will have been removed, except at the wastewater treatment plant, where there is the potential for a short section of woodland edge along the Pollanroe Burn to be illuminated. Based on the extent of proposed lighting, the design of lights that will be used and the bat species with the potential to be affected, the operational phase of the gold mine is unlikely to have a significant effect on any of the local bat populations.

Birds

NED notes that the 2015 & 2016 breeding bird surveys recorded 38 species of birds, including Golden Plover, Buzzard and Kestrel, and the 2015/16 wintering bird survey recorded 31 species of birds, including Golden Plover, Grey Heron, Sparrowhawk, Buzzard, Kestrel and Fieldfare.

The proposed development has the potential to cause disturbance to any birds breeding on the site. The Breeding Bird Survey Report details the mitigation measures that are proposed to minimise impacts to breeding birds.

Natural Heritage

Provided the mitigation measures detailed in Ecological Mitigation and Management Plan (EcMMP) Appendix C9 Section 7.0 Birds are implemented in full, NED have no concerns regarding impacts to bird species.

Badgers

NED notes that the badger surveys undertaken in 2015 and 2016 found five active setts within the proposed infrastructure site, comprising two main and three outlier setts. One active main sett will be destroyed, and the rest are at risk of disturbance. The Badger Survey and Evaluation Report details the mitigation and compensation measures that are proposed to minimise impacts to badgers and their setts.

Provided the mitigation and compensatory measures detailed in Ecological Mitigation and Management Plan (EcMMP) Appendix C9 Section 5.0 Badgers are implemented in full, NED have no concerns regarding impacts to this species. NED notes that NIEA Wildlife Order licences will be required in order to undertake some of the proposed compensatory works.

Common Lizards

NED notes that the 2016 survey detailed in the Common Lizard and Evaluation Report found a low population of lizards across the infrastructure site. A small number of lizards will be significantly impacted by loss and fragmentation of habitat, as well as being at direct risk of being killed. These impacts cannot be mitigated for, so compensation to provide suitable alternative habitat prior to capture and relocation of lizards is proposed.

Provided the compensatory measures detailed in Ecological Mitigation and Management Plan (EcMMP): Appendix C9 Section 8.0 Common Lizard are implemented in full, NED have no concerns regarding impacts to this species. NED notes that NIEA Wildlife Order licences will be required in order to undertake some of the proposed compensatory works.

Smooth Newts

NED notes that the Smooth Newt Survey and Evaluation Report found that newts were present and breeding in two ponds within the site, as well as using the surrounding terrestrial habitat. Newts will be significantly impacted by the loss of the two breeding ponds, a potential breeding pond and surrounding habitat. These impacts cannot be mitigated for, so compensation to provide suitable alternative habitat prior to capture and relocation of newts is proposed.

Provided the compensatory measures detailed in Ecological Mitigation and Management Plan (EcMMP): Appendix C9 Section 9.0 Smooth newt are implemented in full, NED have no concerns regarding impacts to this species. NED notes that NIEA Wildlife Order licences will be required in order to undertake some of the proposed compensatory works.

Other protected/priority species

Irish Hares are widely distributed across the infrastructure site. The loss and fragmentation of hare habitat is considered to be not significant because there is sufficient carrying capacity on adjacent areas of blanket bog and farmland for the small number of hares observed on site and the land to the north and south will continue to provide connectivity across the wider area. NED concurs with this conclusion.

Natural Heritage

NED notes that the otter surveys detailed in the Otter Survey, Surveillance and Evaluation Report did not record the presence of otters along the Pollanroe Burn and an un-named tributary of the Owenreagh River within the proposed infrastructure site. NED note that these small tributaries are not important or critical to the local otter population.

NED notes that no evidence of red squirrel was found within the proposed infrastructure site and therefore has no concerns regarding this species.

NED notes that, although two areas of *Succisa pratensis* were found during the Marsh Fritillary survey, as detailed in the Marsh Fritillary Butterfly Survey Report, no evidence of this species was found within the infrastructure site.

Powerline

The proposed powerline from the Strabane 110/33 kV substation at Ballymagorry to Holly Hill comprises five sections of underground cable and three sections of overhead powerline (OHPL) on wooden poles. NIE will submit a separate planning application for the powerline.

ES Vol 3 C23 Powerline Specialist Study Reports November 2017 details the PEA that was undertaken of a 500m wide corridor along the powerline route, in order to assess the likelihood of the future planning application for the powerline to demonstrate no significant ecological impact. The PEA involved a desktop study, habitat mapping based on aerial photographs, and a site visit on 26 February 2017 to assess key habitat and features identified along the proposed route from the aerial photos.

The predominant land use along the powerline route is rough grazing land with hedgerows and trees on the lower slopes and exposed ground with very few trees on the steeper slopes. Northern Ireland priority habitats include broadleaf woodlands (Oak Woodland, Mixed Ashwoods, Wet Woodland), Purple Moor-grass and Rush Pasture, heathland (Lowland Heathland, Upland Heathland), Blanket Bog, running water and Hedgerows. The final powerline route will be selected to avoid the most sensitive habitat areas. Section 5.0 Preliminary Assessment of Likely Effects and Mitigation states that site specific mitigation measures and working method statements will be developed to inform the consenting process.

Section 6.0 Recommendations recommends that an Extended Phase 1 Habitat Survey is carried out to inform the future planning application for the powerline. It also recommends that the mitigation measures in Section 5.0 Preliminary Assessment of Likely Effects and Mitigation are implemented, and that an ECoW is employed to oversee the powerline installation works.

Powerline Recommendations

1. Buffers between construction works and watercourses should be at least 10m
2. The bird breeding season is 1 March to 31 August
3. The active status of any blanket bog impacted by construction works or access routes needs to be assessed: no works should take place in active blanket bog
4. Areas of Annex 1 habitats should be avoided:
    - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)
    - Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

Natural Heritage

- Northern Atlantic wet heaths with *Erica tetralix*
- Blanket bogs

5. All species surveys must be carried out to NIEA specifications
6. Mitigation and/or compensation measures will be required to minimise impacts to any priority or protected species identified within the powerline construction route.

Passing Bays and Turning Circle

The 24 passing bays along the Camcosy Road which are to be used in the construction phase of the development will be upgraded by widening and/or extending their length. The works will occur within existing road-side verges or lane entrances, and no Northern Ireland priority habitats such as hedges will be affected.

The turning point off Lenagh Road is located on an existing area of hardstanding within a farmyard which does not support Northern Ireland priority habitats or protected species.

The passing bay upgrades and the creation of the turning bay will therefore have no impacts to natural heritage interests.

Underground Mineral Extraction Area

This is entirely underground, so no Northern Ireland priority habitats or protected species will be impacted by this element of the proposed development.

Restoration works

The restoration works which are proposed for the site will include the removal of buildings and structures, regrading of slopes, retention of wetlands, planting of strips of woodland around the infrastructure site, progressive restoration of the Dry Stack Facility (DSF) with heathland species and replacement of the existing conifer belts with native woodland species.

NED notes that ES Vol 3 Appendix C17: Landscape Plan states that planting and seeding will use species of local Northern Ireland provenance.

<u>Restoration Recommendations</u>

Any decision notice must include a condition to require a restoration plan to be agreed with the planning authority, which will need to include:

1. Species used for seeding and re-planting areas of the site should be Northern Ireland native species of local provenance
2. Details of the by the restoration plan
3. Timings of the phasing of the proposed restoration works
4. Proposed methodology for restoration works

Natural Heritage

Further Information

1. Clarification as to whether the areas mapped as Valley Mire are the NIPH of Fens or the NIPH of Upland Flushes, Fens and Swamps, and consideration of compensatory creation of areas of Fen

2. Clarification regarding the statement in the ES that Pollanroe Burn and its tributary are unlikely to meet the Headwater criteria to qualify as the Rivers NIPH because they provide limited opportunities for wildlife

3. Consideration of engineering the diversion ditches around the Dry Stack Facility (DSF).to create watercourses that are as naturalistic as possible.

4. Clarification as to whether the hedge at TN154 is the NIPH of Hedgerows, and if so, what compensation will be required

Environment, Marine & Fisheries Group
Marine & Fisheries Division

Department of
Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

www.planningni.gov.uk

Downshire Civic Centre
Ardglass Road
Downpatrick
Co Down
BT30 6GQ

Application Reference;
LA10/2017/1249/F

26th March 2018

PROPOSED GOLD MINING AND PROCESSING PLAND, GREENCASTLE CO TYRONE

To whom it may concern,

DAERA Sea Fisheries Inspectorate have issues and concerns with this project from an aquaculture aspect. We have a very successful aquaculture site downstream from the proposed development and if any leeching or loss were to occur from the impoundment ponds it could devastate the farm.

The high levels of contaminates in use on this project would pose a major threat to the fishfarm if any of them were to get into the water course's short term or long term. The area where the project is proposed is on a very elevated site and runs a high risk of both sediment and contaminated runoff.

As this project currently stands DAERA Sea Fisheries Inspectorate would not be content for the project to proceed. We would have major concerns with the impoundment ponds as overflow or rupture of these ponds could devastate the fishfarm downstream.

We would also like to make the applicant aware that;

It is an offence under Article 47 of the Fisheries Act (NI) 1966 to cause pollution which is subsequently shown to have a deleterious effect on fish stocks.

All works near watercourses to be carried out in line with guidance as described in the Pollution Prevention Guidelines 5 (Works In, Near or Liable to Affect Watercourses).

Yours Sincerely,
Marine & Fisheries Division –Sea Fisheries Inspectorate

Loughs Agency
Gníomhaireacht na Lochanna
Factrie fur Loughs

[redacted]

Department for Infrastructure
Strategic Planning Division
71 Ebrington Square
Derry~Londonderry
BT47 6FA

19 December 2018

Dear [redacted]

Planning Application: *LA10/2017/1249/F* - Underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works, Greencastle, County Tyrone (Dalradian Gold)

Thank you for your recent correspondence dated 5th March 2018 in relation to the above-mentioned proposed development. The Loughs Agency is the statutory body charged with the conservation, protection and development of inland fisheries within the Foyle and Carlingford systems, the promotion of development of Loughs Foyle and Carlingford, and catchments for commercial and recreational purposes in respect of marine, fisheries and aquaculture issues and the development of marine tourism.

The Loughs Agency has considered the information provided and would respond as follows. Firstly, the Agency reserves the right to make further comment on this development proposal, subject to the completion of the

22 Victoria Road, Prehen, Londonderry, BT47 2AB
Tel: 028 71 342100 Fax: 028 71 342720 Txt Phone: 028 71 318000
www.loughs-agency.org

Habitats Regulation Assessment (HRA) by Shared Environmental Services/DAERA.

The Fisheries and River Habitat Assessment, Biological Water Quality Assessment, and Surface Water Impact Assessment provides a sound environmental baseline that can be used for ongoing monitoring throughout the lifetime of any approved extractive processes, activities or operations as part of the development proposal. Given the sensitive environmental receptors within the catchments of the Owenreagh and Owenkillew rivers, such monitoring is extremely important to allay the genuine fears of our stakeholders. The Loughs Agency would seek to engage with colleagues in NIEA in developing an appropriate monitoring strategy for the lifetime of the project.

The Loughs Agency and our stakeholders have concerns about the use, storage and disposal of cyanide products given their potential toxicity to aquatic life, and would therefore seek an assurance from DAERA, the licensing authority that they are satisfied that any risks are mitigated and minimised. Furthermore, the Loughs Agency understands that process cyanide components are to be disposed of within the mine shaft and would seek assurances that groundwater emanating from the mine shaft, which has the potential to be contaminated, does not reach surface waters by groundwater recharge.

Given the designation of the downstream waterways, this evaluation and assurance should be included in the Appropriate Assessment.

Furthermore, any wastewater treatment discharge conditions from the site and associated infrastructure must strive to meet the highest quality standards possible.

The Loughs Agency also notes the proposed mine waste storage facility on site. Assurances must be given that spoil is engineered to ensure that no land slip is possible. In this regard, the Agency would request details of Environmental Emergency and Preparedness procedures. This should cover all potential scenarios, such as land slip and flood events. The roles and responsibilities of all statutory authorities must be highlighted and periodic scenarios tested. In addition, given the exceptional flood event of August 2017, and given the high cyanide content of the materials being processed, the Loughs Agency would seek assurances that the developer has taken this magnitude of a flood event into account.

The applicant should demonstrate best environmental practice when working close to watercourses. The potential for deleterious matter to enter a watercourse is of primary concern. Impacts on the aquatic environment such as a decrease in water quality can cause a significant impact upon various life history stages of fish species.

The applicant must also be aware that it is an offence under section 41 of the Foyle Fisheries Act (1952) to cause pollution which is detrimental to fisheries interests.

Yours sincerely

22 Victoria Road, Prehen, Londonderry, BT47 2AB
Tel 028 71 342100 Fax: 028 71 342720 Txt Phone 028 71 318000
www loughs-agency org

Loughs Agency

Gníomhaireacht na Lochanna
Factrie fur Loughs

[redacted]

Dr Declan Lawlor CEnv

Environmental Officer

On behalf of the Loughs Agency

cc Mrs Sharon McMahon, Designated Officer, Loughs Agency
Mr John McCartney, Director of Conservation & Protection

22 Victoria Road, Prehen, Londonderry, BT47 2AB
Tel: 028 71 342100 Fax: 028 71 342720 Txt Phone: 028 71 318000
www.loughs-agency.org

Your Ref:

Our Ref:LA10/2017/1249/F(R2)

Loughs Agency
Gníomhaireacht na Lochanna
Factrie fur Loughs

Date: 13th September 2018

DFI Planning
RECEIVED
27 SEP 2018
File N

[redacted]
Department for Infrastructure
Strategic Planning Division
71 Ebrington Square
Derry~Londonderry
BT47 6FA

Dear [redacted]

Planning Application: LA10/2017/1249/F – Underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works, Greencastle, Co. Tyrone (Dalradian Gold Ltd.).

I refer to the above-mentioned planning application.

The Agency responded to the planning consultation earlier this year and is disappointed that we haven't (as yet) received a response to our response, and the points raised therin.

In addition to the points already raised by Loughs Agency, I would like to add several points for consideration. Groundwater must not be succeptible to chemical contaimination, from all process operations at the site, particularly refilling gaps underground. Furthermore, groundwater removal must not be part of river discharge on salmonid watercourses.

Loughs Agency would have concerns about the volume and source of cleanwater needed for process operations, and the potential cumulative impacts on the Glenelly and Owenkillew catchments.

In relation to any applications made to DAERA under the Water Abstraction and Impoundment (Licencing) Regulations (Northern Ireland) 2006, I would seek assurances that all applications are sent to the Agency for comment.

Yours faithfully/sincerely,

John McCartney

Director of Conservation & Protection

02871342100

giving nature a home

Dfl Strategic Planning Division
71 Ebrington Square
Derry/Londonderry
BT47 6FA

01 November 2018

To whom it may concern,

RE: Application for underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works at Greencastle, County Tyrone (LA10/2017/1249/F)

The RSPB is Europe's largest voluntary nature conservation organisation and is supported by over 1 million members, 13 000 of which reside in Northern Ireland (NI). As such we thank you for sending the Environmental Statement (ES) for the above named consultation through to us for comment.

Our area of expertise is ornithology so our response focuses mainly on that aspect of this application. Unfortunately, RSPB NI does not have the knowledge or expertise to comment in any detail on many aspects of this application, for example hydrology and hydrogeology, due to the complex nature of the application, however, we have made some comments where appropriate.

Ornithology

According to the bird surveys submitted, the infrastructure site is host to up to 13 pairs of skylark and 13 pairs of meadow pipit[1] with more pairs found in the area surrounding the site[2] These birds are, respectively, amber and red listed species of conservation concern[3] and are likely to be lost as breeding birds on the infrastructure site, and potentially in the surrounding area, should this application be approved. However, the mitigation measures for impacts on ornithology are restricted to removing suitable nesting habitat outside the breeding season and the installation of bird boxes[4] While removal of the habitat outside the breeding bird season will reduce the likelihood of these species nesting on site, the provision of bird boxes will not mitigate for the loss of these ground nesting species. We expect appropriate mitigation to be provided for ground nesting species.

[1] Table 4 - Appendix C8 Annex H – Breeding Bird Survey Report
The 2016 survey covered the infrastructure site only and found a maximum of 13 singing males for both skylark and meadow pipit.
[2] Table 4 - Appendix C8 Annex H – Breeding Bird Survey Report
The 2015 survey which covered the infrastructure site and some of the surrounding area found a maximum of 46 singing skylark males and 44 singing meadow pipit males.
[3] Colhoun, K & Cummins, S. (2014): Birds of Conservation Concern in Ireland 2014-2019 *Irish Birds* 9 523 544 (2013)
[4] Table 16 & 23 - Appendix C8 – Ecological Impact Assessment

Northern Ireland HQ
Belvoir Park Forest
Belvoir Drive
Belfast
BT8 7QT

Tel 02890 491547
Fax 02890 491669

rspb.org.uk

giving nature a home

In terms of potential direct impacts on other protected bird species, RSPB NI does not have any specific concerns, subject to the implementation of the proposed mitigation measures[5].

However, there may be the potential for this application to have indirect impacts on birds and supporting habitats due to impacts on hydrology and hydrogeology for example. Unfortunately, as stated above, RSPB NI does not have the knowledge or expertise to comment in any detail on the specific potential impacts in terms of hydrology and hydrogeology, for example, and we expect the Department for Infrastructure (DfI) to ensure that the correct expertise is sought to ensure this application is effectively assessed.

Designated Sites

RSPB NI also notes with concern that the application site lies close to, and is hydrologically connected to, the Owenkillew River SAC/ASSI with much of the extraction and exploration areas, as well as the existing exploration adit, lying within 500m of this site. Given the proximity of this internationally and nationally designated site, we expect the Department to take full consideration of the information provided within the ES to determine whether the information provided is sufficient to carry out an appropriate assessment under the terms of the Conservation (Natural Habitats, etc.) Regulations (NI) 1995 (as amended) in order to ensure there will be no impact on the features of this designated site as well as other designated sites which are hydrologically connected to the application site. While we don't have the expertise to effectively review the information provided in the ES on potential impacts to these designated sites, RSPB NI supports the Northern Ireland Environment Agency's (NIEA) plan to commission an independent peer review of the surface water and groundwater modelling undertaken by the applicant[6].

Other Comments

While we do not have the specific expertise to comment in detail on any potential impacts on hydrological and hydrogeological regimes, we have however noted a number of issues which we expect to be fully considered by the Department and may require further expert consideration. In the circumstances, the Department should satisfy itself that the following matters are robustly and competently assessed by relevant experts.

- We note that groundwater levels are expected to take 100 years post-closure to return to natural conditions i.e. approximately 125 years from the date of construction[7]. This appears to be a very long-term impact on groundwater levels in the vicinity of the application site.

[5] Outlined in Section B 11

[6] As detailed in their response dated 5th October 2018

[7] Table 18 – Appendix C8 – Ecological Impact Assessment

Northern Ireland HQ
Belvoir Park Forest
Belvoir Drive
Belfast
BT8 7QT

Tel 02890 49154
Fax 02890 49166

rspb.org.uk

giving nature a home

- Considering the proposed reductions in groundwater levels across the extraction site[8], we would be concerned that the overlying peat habitat might be impacted by the lowering of water levels. The applicant appears to rely on rainfall alone to maintain the hydrology of the peatland. There appears to be no assessment of the impact on hydrology of the bog habitat during the operational phase of the proposed application[9].
- We note that this application will result in the permanent loss of 0.03ha of 'flush and spring', 7.94ha of 'fen (valley mire)' and 1.68km of 'running water (streams)' habitats with mitigation/compensation not possible for any of these habitats[10]. 'Flush and spring' and 'fen (valley mire)' both represent NI Priority Habitats. 'Running water (streams)' is described as a priority habitat in Table 8-60[11] but not in the Habitat Survey[12] but either way it is nevertheless an important habitat for wildlife and biodiversity.
- The impact assessment of the closure phase states that "*Dilution calculations predict that at year 100 the concentrations of hazardous substances in the mine water and localised groundwater will not be discernible based on background water concentrations*"[13]. This appears to indicate a very long-term impact on groundwater quality.

We also note that the time periods given for the development vary in different sections of the ES and this should be clarified. For example, the Project Description Chapter[14] gives a construction period of 2 years, operational period of 20-25 years and a closure period of 1 year followed by 5 years monitoring and maintenance. However, the Ecological Impact Assessment[15] gives a construction period of 2 years, an operation period of 17-20 years and a closure period of 3 years.

Please do not hesitate to contact the Conservation Officer with any related queries.

Yours sincerely

Conservation Officer
RSPB Northern Ireland

[8] Section 8.4.4
[9] Table 17 - Appendix C8 – Ecological Impact Assessment
[10] Table 23 – Appendix C8 – Ecological Impact Assessment
[11] Chapter 8: Environmental and Social Impact Assessment
[12] Table 6 – Appendix C8 Annex C – Phase 1 Habitat & Phase 2 Vegetation Survey Report
[13] Table 18 – Appendix C8 – Ecological Impact Assessment
[14] Table 4-1 – Chapter 4: Project Description
[15] Section 5.2.1-3 – Appendix C8 – Ecological Impact Assessment

Northern Ireland HQ
Belvoir Park Forest
Belvoir Drive
Belfast
BT8 7OT

Tel 02890 491547
Fax 02890 491669

rspb.org.uk

Department for
Communities
www.communities-ni.gov.uk

Historic Environment Division
Causeway Exchange
1-7 Bedford Street
Belfast
BT2 7EG

Tel: 028 9082 3100
Email:
HEDPlanning.General@communities-ni.gov.uk

Date 30 April 2018

Dear Sir/Madam

Planning Application Ref.:	LA10/2017/1249/F
Location:	Lands north west of Greencastle and east of Rouskey; north of the Crockanboy Road mainly west of Mullydoo Road north and south of Camcosy Road including lands approximately 165 metres west of no. 45 Camcosy Road to the junction of Camcosy Road and Crockanboy Road and lands 47m to the south east of 73 Crockanboy Road off the Lenagh Road (in the townlands of Crockanboy Teebane West Casorna Rouskey Attagh Curraghinalt Altcamcosy Alwories Monanameal Drumlea Fallagh Lower and Glenmacoffer)
Proposal:	Underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works, Greencastle, County Tyrone. Please see application form P1, sheet 1 for full project description.

The Planning (General Development Procedure) Order (NI) 2015

As amended by The Planning (General Development Procedure) (Amendment) Order (Northern Ireland) 2016

Thank you for your consultation on the above application, received by DfC on 05/03/2018

Historic Environment Division (HED) has reviewed the details of the application and provides summary comments as follows:

Archaeology and Built Heritage

Historic Environment Division: Historic Monuments (HED: HM) has considered the impacts of the proposal. HED: HM is content that the proposal satisfies PPS 6 policy requirements, subject to conditions for the agreement and implementation of a developer-funded programme of archaeological works. This is to identify and record any archaeological remains in advance of new construction, or to provide for their preservation in situ, as per Policy BH 4 of PPS 6.

Should you seek further clarification on any of the issues raised in this response, please do not hesitate to contact the HED Planning Team.

Kind Regards

Historic Environment Division

Issued on behalf of Department for Communities

Archaeology & Built Heritage

Section Reference SM12/1 TYR 19: 08, 28, 32, 35

Considerations

Historic Environment Division: Historic Monuments (HED: HM) has considered the impacts of the proposal. HED: HM is content that the proposal satisfies PPS 6 policy requirements, subject to conditions for the agreement and implementation of a developer-funded programme of archaeological works. This is to identify and record any archaeological remains in advance of new construction, or to provide for their preservation *in situ*, as per Policy BH 4 of PPS 6. The attached condition would be appropriate in this case (L15 & L05A).

Conditions

- No site works of any nature or development shall take place until a programme of archaeological work has been implemented, in accordance with a written scheme and programme prepared by a qualified archaeologist, submitted by the applicant and approved by the Department. The programme should provide for the identification and evaluation of archaeological remains within the site, for mitigation of the impacts of development, through excavation recording or by preservation of remains, and for preparation of an archaeological report.
  Reason: to ensure that archaeological remains within the application site are properly identified, and protected or appropriately recorded.

- Access shall be afforded to the site at all reasonable times to any archaeologist nominated by the Department for Communities – Historic Environment Division to observe the operations and to monitor the implementation of archaeological requirements.
  Reason: to monitor programmed works in order to ensure that identification, evaluation and appropriate recording of any archaeological remains, or any other specific work required by condition, or agreement is satisfactorily completed.

Explanatory Note

This application site is located close to the site of a large number of recorded archaeological sites and monuments. These range from the Neolithic and Bronze Age right up to modern times. While there will be no adverse impact upon the physical remains or settings of these sites and monuments they can be taken as an indicator of the potential for uncovering buried archaeological remains during site works and archaeological mitigation is required. There is also a vernacular group of farm buildings located within the site where the majority of the surface ground works will take place which should be recorded prior to redevelopment.

HED: HM has reviewed the cultural heritage section of the Environmental Impact Assessment (EIA) submitted with this application and agree with the findings. We advise that the mitigation measures proposed, while suitable for recording buried archaeological remains, should also include a Level 2 survey to record the buildings prior to demolition.

Informative

For guidance on the preparation of the Written Scheme and Programme of Archaeological Work, which should be submitted for approval at least 4 weeks before work is due to begin, contact:

Historic Environment Division – Historic Monuments
Causeway Exchange
1–7 Bedford Street
Belfast,
BT2 7EG

Tel: 02890 823100

Quote reference: SM12/1 TYR 19: 08, 28, 32, 35 and LA10/2017/1249/F

Application for the excavation licence, required under the *Historic Monuments and Archaeological Objects (NI) Order* 1995, should be submitted at least 4 weeks before work is due to begin, by a qualified archaeologist responsible for the project, to:

Historic Environment Division – Historic Monuments Unit
Causeway Exchange
1–7 Bedford Street
Belfast,
BT2 7EG

Northern Ireland Electricity Networks Ltd
Fortwilliam House
Edgewater Office Park
Edgewater Road
Belfast BT3 9JQ

Tel 028 9066 1100
Website: www.nienetworks.co.uk

Your ref LA10/2017/1249/F

Department for Infrastructure

13th March 2018

Dear Sir/Madam,

RE: NIE Networks' response to The Department for Infrastructure in respect of Planning Application LA10/2017/1249/F – Proposed underground valuable minerals mining and exploration, surface level development including processing plant and other associated development and ancillary works at Lands north west of Greencastle and east of Rouskey; north of the Crockanboy Road mainly west of Mullydoo Road north and south of Camcosy Road including lands approximately 165 metres west of no. 45 Camcosy Road to the junction of Camcosy Road and Crockanboy Road and lands 47m to the south east of 73 Crockanboy Road off the Lenagh Road (in the townlands of Crockanboy,Teebane West, Casorna, Rouskey, Attagh, Curraghinalt, Altcamcosy, Alwories Monanameal, Drumlea, Fallagh Lower and Glenmacoffer).

We refer to the above numbered planning application and would ask you to note the following:

At present, there are existing NIE Networks high voltage overhead lines in close proximity to the site of proposed underground mining. As these lines may service both the immediate and wider area, it is NIE Networks' view that these lines are presently required to remain.

The proposed development should take into account the position of any NIE Networks' equipment in the area to ensure safety. The developer should maintain statutory clearance from NIE Networks' equipment during the construction and operational phases of the project and also during future maintenance programmes in accordance with HSE Guidance Note GS6 (Avoidance of Danger from Overhead Electric Lines) and HSE Booklet HS(G)47 (Avoiding Danger from Underground Services). Further information is also available at http://www.nienetworks.co.uk/Safety-Environment.

The developer should consider, in their design, the risk of any buildings or equipment interfering with NIE Networks' equipment. Any infringement of the clearances to NIE Networks' equipment may require overhead line diversions or placing the circuits underground.

In addition, the development must also take into account the scope for interference with NIE Networks' radio telecommunication equipment.

Should information be required at this stage regarding the location of NIE Networks' equipment adjacent to the development, please contact NIE Networks with the location details of your proposed development at:

- Northern Ireland Electricity Networks Ltd, Distribution Service Centre, Request for Markup, Carn Industrial Estate, Craigavon, BT63 5QJ.
- markups@nienetworks.co.uk
- 03457 643643

NIE Networks' current policy for connection to the network is by means of overhead lines and underground cables and may require the construction of a substation. The specifications of the substation will be determined following application for connection.

We hope that this information will be of assistance to you.

If you require any further clarification or additional information then please do not hesitate to contact us.

Yours faithfully,

[redacted]
Network Development
NIE Networks