

T93/13
L118.00

WATER (NORTHERN IRELAND) ORDER 1999

MAIN APPLICATION FORM (WO1)

Application for new consent/~~variation to an existing consent~~* to discharge
(*delete as appropriate)

31 MAY 2013

NB: If application is in respect of a single domestic dwelling a separate form
(WO2) should be completed.

<p>RETURN TO:</p> <p>Northern Ireland Environment Agency Water Management Unit 17 Antrim Road LISBURN Co Antrim BT28 3AL Tel: 028 9262 3034</p>	<p>Official Use Only</p> <p>File Ref: T93/13</p> <p>Date Received:</p> <p>Applic Fee Received: <input checked="" type="checkbox"/> Yes £ 118 <input type="checkbox"/> No</p>
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Each applicant must complete this main form and separate Annexes as required. Please look through the form and read the notes carefully before you complete it. Processing of your application will be aided by full and accurate completion of all the relevant sections and provision of the necessary plans. If you have any queries about the form please telephone the above number.

NOTE:

All information contained within this application will be made available on the public register unless there is a request to withhold any of it. Any such request should provide a full justification stating why the information should be withheld.

- 1 SITE ADDRESS
- 1.1 Address or other sufficient description of land or premises to which this application applies.

Address: Curraghinalt, Gortin, Co. Tyrone.

Description: Mineral Exploration involving the extension of the existing underground exploration tunnel at Curraghinalt.

Post Code BT 79 7SF

WO1

4 DETAILS OF RECEIVING ENVIRONMENT

4.1 Is there a foul sewer available to which the discharge(s) could be made? Yes No

(see note viii)

If yes, please state why it is not practical to connect to it (eg, distance, flow etc)

[Empty box for response to 4.1]

5 DETAILS OF APPLICANT AND OTHER INFORMATION

(See general notes and note xi)

5.1 (a) Full name and postal address of applicant. This should be the person who will become the consent holder should consent be granted.

Mr. [REDACTED]
Managing Director,
Dalradian Gold Ltd.
3 Killybrack Road, Omagh
Post Code: BT 79 7DG
E-mail Address: [REDACTED]@n.com
Daytime Telephone Number: [REDACTED] Fax: 028 82257562

Company Registration Number (if appropriate): NI 008465

(b) Agent (if any) - Full name and postal address:

[REDACTED]
SLR Consulting Ltd.
24 Ballynahinch St
Hillborough, Co. Down
Post Code: BT26 6AW
E-mail Address: [REDACTED]@lting.com
Daytime Telephone Number: [REDACTED] Fax: 028 926 81 037

5.2 Please give full name and address to which invoices for any annual charges should be sent if different to that given above:

See Section 5.1 (a) above

Post Code: BT
E-mail Address:
Daytime Telephone Number: 028 Fax: 028

30th May 2013

██████████
Discharge Consents,
Water Management Unit,
Northern Ireland Environment Agency,
17 Antrim Road,
Lisburn, BT28 3AL

Our Ref: 130502.501.0241.002.02.L.Rev02.Exploration Tunnel Extension Discharge
Consent Cover Letter

Dear Mr. ██████████

**RE: WATER (NORTHERN IRELAND) ORDER 1999: DISCHARGE CONSENT
APPLICATION – EXTENSION OF THE EXISTING UNDERGROUND TUNNEL FOR
MINERAL EXPLORATION, AT CURRAGHINALT, GORTIN, CO. TYRONE.**

Please find enclosed a completed application form and supporting documentation for a Water Order consent relating to the discharge of treated site drainage from the extension of the existing exploration tunnel, and surface facilities, including waste rock storage, at Curraghinalt, Gortin, Co. Tyrone.

The necessary works required for the extension of the existing exploration tunnel are for mineral exploration purposes only, and will be undertaken by Dalradian Gold Ltd. (DGL).

1.0 BACKGROUND

DGL is a wholly-owned subsidiary of Dalradian Resources Inc, a Toronto Stock Exchange-listed Canadian mineral exploration company with headquarters in Toronto, Canada, and with offices in Belfast, Omagh, and Gortin, Northern Ireland. The company also has several exploration projects in Norway.

DGL's flagship project is the gold deposit at Curraghinalt, Co. Tyrone. Mineral exploration work at Curraghinalt has been undertaken since 1983. The work done to date had resulted in the identification of up to 10 primary gold-bearing veins, which are up to 3.0 meters in width. Historical and ongoing regional exploration drilling, geochemical testing, geological mapping and sampling work suggests that additional gold-bearing veins may exist within DGL's prospecting areas. Although exploration work at Curraghinalt has been ongoing since the early 1980's, DGL's exploration programmed only commenced in 2012, shortly after DGL purchased the project in late 2009.

2.0 PERMITS AND LICENSES

DGL has carried out the above-noted exploration subject to Mineral Prospecting Licences DG1/08 DG2/08, DG3/11 and DG4/11, which were issued to DGL by the Department of Enterprise, Trade and Investment (DETI). Moreover, DGL performs mineral exploration

work subject to Part 16 of the Planning (General Development) Order NI 1993, which relates to permitted development rights for mineral exploration works.

DGL also has a Discharge Consent (Ref 68/12) for site drainage associated with underground exploration drilling in the existing exploration tunnel. The Northern Environmental Agency (NIEA) issued Discharge Consent (Ref 68/12) to DGL in July, 2012. However, due to changes in the exploration/work programme, DGL has not yet undertaken any underground exploration drilling in the above-noted exploration tunnel.

The application included herein relates to proposed exploration work within licence area DG1/08 at Curraghinalt. Specifically, it related to DGL's proposed programme of underground exploration through the extension of the existing exploration tunnel, as described in the following chapters. Given the nature and duration of these proposed works, Part 16 Permitted Development rights for mineral exploration works do not apply and DGL will need to obtain authorization to proceed with the project from the Department of the Environment's (DoE) Strategic Planning Services. As such, DGL submitted a planning application for the exploration tunnel extension to the DoE Strategic Planning Division on the 18th February, 2013. The planning application is currently under consideration by DoE Strategic Planning Division (Planning Ref. No. K/2013/0072/F), and a complete detailed project description is available in the application, a copy of which the NIEA have.

This Water Order discharge consent application is being submitted to DoE NIEA in parallel with the above-noted planning application, which was submitted to the DoE Strategic Planning Division.

3.0 EXPLORATION TUNNEL EXTENSION - DESCRIPTION OF ACTIVITY

The proposed project will allow DGL to extend the existing exploration tunnel by 2,000 linear metres to obtain and remove bulk samples of mineralised rock. The proposed activities will enable DGL to:

- Confirm the grade and tonnage and continuity of the mineralised (gold bearing) veins.
- Evaluate underground geotechnical and hydrogeological conditions.
- Carry out offsite metallurgical testing.
- Evaluate the technical and economic feasibility of, and trial various mining methods for, extracting the mineral.

The majority of the proposed works will be performed underground, and will be undertaken using industry standard rock excavation methods. Temporary works will be undertaken above-ground on fields adjacent to the existing tunnel entrance, and on a limited number of surface locations above the underground workings. The proposed surface works required for the exploration tunnel extension will be undertaken on lands, which DGL controls.

The proposed works will comprise three phases:

- *Phase 1: Site Set-Up:* The initial transportation of equipment and set up of the site compound area, installation and commissioning of the water management system at the site, upgrading of existing access, erection of portacabins, construction of waste rock storage area etc.
- *Phase 2: Exploration Tunneling:* The activities involved include underground exploration drilling, extending the existing exploration tunnels, including the blasting and subsequent removal of waste rock and mineralised rock (bulk samples) and

removal of the bulk samples off-site as well as detailed mapping and exploration tunnel side wall channel sampling.

- *Phase 3: Demobilisation and Closure / Restoration Phase:* The movement of mining equipment off site and related decommissioning works together with associated restoration of the surface works area. The water management and treatment system will be the final piece of infrastructure removed from the site, once all other demobilization and restoration works are complete.

The bulk, mineral samples obtained from the exploration activities described herein will be stored temporarily onsite, in a covered dry facility before being transported off-site analysis. Once off-site, the bulk samples will be stored in a suitable area awaiting onward shipment either by truck or ship, to a processing facility outside of Northern Ireland.

In addition to the activities described in this cover letter, DGL will continue to carrying out surface exploration drilling activities at Curraghinalt and other licensed areas. This Water Order discharge consent application applies to the treatment and discharge of effluent associated with these surface drilling and related activities, as well as discharges from the exploration tunnel extension and underground exploration drilling and related activities, as described below. DGL have developed a Method Statement for Drill Site Water Management and a copy of this statement is included with this consent application.

3.1 Key Features of the Proposed Works

The proposed works will include the following features:

- The extension of the existing exploration workings by approximately 2,000 linear meters, with new additional headings along the mineralised zones, using industry standard drill and blast operations. By its nature, mineral exploration is an iterative process, and evolves as the work progresses.
- The extraction of approximately 20,000 cubic meters (m³) of material (in-situ volume) from the extended exploration tunnel, comprising mineralised rock and waste rock. The mineralised rock (approximately 14,100 m³ in-situ volume) will constitute bulk samples to be used for additional metallurgical testing, and will be stored temporarily onsite. The remaining waste rock will be stored on site and will not be removed off site.
- The erection of temporary works around the existing portal including construction of workshop, storage sheds, office and welfare facilities.
- The creation of a surface on-site waste rock storage area.
- The construction of a temporary settlement/attenuation pond, hydrocarbon interceptor and treatment system for to treat drainage water prior to treated water being discharged off site. Such discharge would be subject to a separate Water Order (Discharge) consent from the Northern Ireland Environment Agency (NIEA).
- The placement of a temporary surface explosives store.
- Underground exploration drilling, which will take place from existing and proposed underground workings.

4.0 WATER MANAGEMENT AND TREATMENT SYSTEM

Baseline studies on surface water quality and stream/river flow have been carried out in the Curraghinalt Burn and the Owenkillew River. The Owenkillew River is a designated Special Area of Conservation (SAC) and Area of Special Scientific Interest (ASSI).

A project-specific water management and treatment system has been designed by Environ EC Canada Inc. (Environ), see enclosed Environ report. The water management plan has been developed, and a treatment system has been designed, to treat drainage from the site prior to its discharge to the Curraghinalt Burn, which then flows into the Owenkillew River. The water management plan is based on a site water balance which has been carried out for the proposed project tunnel extension project, including the underground and surface development.

The water management plan and treatment system has been design and developed with the objective of ensuring surface water quality objectives are met at the point of discharge to the Curraghinalt Burn.

The site water management concepts described in the Environ report incorporate considerations associated with:

- Collecting, storing, and treating surface water run-off from the 100 year / one-hour storm event plus two consecutive 50 year / 15-minute storm events;
- Developing a treatment system that will reliably achieve the anticipated effluent discharge criteria for collected storm event run-off and for other water from exploratory activities and
- Providing dynamic range in the treatment system (turn-up and turn-down) to enable efficient management of stored water to consistently provide appropriate available buffer storage capacity.

Candidate options for treatment of the individual water sources at the site were assessed based on individual water source characterization data obtained during 2011-2012.

The individual water sources at the site are expected to contain different compounds and, therefore, require different unit operations for treatment. The water management concept includes the merging of individual water sources according to treatment requirements:

- A general treatment would combine exploration tunnel water, surface and underground drill return water, and site compound area run-off in a single, co-mingled water for removal of suspended solids and hydrocarbons.
- Acid Rock Drainage (ARD) collected from waste rock and mineralized rock would be combined with run-off from the active portion of the waste rock storage area for treatment to remove suspended solids and metals, as appropriate.
- Both general treatment and ARD waters would then be co-mingled for removal of nitrates and subsequent pH adjustment, as appropriate, prior to discharge.

On-site settling ponds will be designed with sufficient capacity to contain run-off from the exploration tunnel, surface drilling water, and surface water run-off volumes from the 100 year / one-hour storm plus two consecutive 50 year / 15-minute storms (per the Flood Estimation Handbook, 1999) with an attenuation capacity of c. 877 m³.

The discharge of water from the site will be managed and will be at a rate of 9.75 l/s (842 m³/day) for the wettest month. The water will be pumped from the settlement pond to the water treatment plant at a rate of 9.75 l/s, this is the maximum rate. Run-off from storm flow events will be attenuated in the settlement pond prior to treatment off site.

The baseline monitoring results indicate that the exploration tunnel drainage water will not require heavy metals treatment given that heavy metals are not present in concentrations large enough to influence the surface water quality in the Curraghinalt Burn and Owenkillew River. Mass Balance calculations for the discharge and receiving waters indicate that metal removal is not required.

It is anticipated that hydrocarbons, solids and nitrates from blasting may be present in the tunnel drainage. The exploration tunnel water will be blended with other sources of runoff from the site, which have similar characteristics, for the purpose of treatment.

The proposed water management and treatment system includes provision for a hydrocarbon interceptor to remove hydrocarbons from the treated waters prior to discharge off-site.

An effluent monitoring station will enable continuous monitoring of discharge flow rate and the collection of samples for assessing performance of the treatment system in terms of discharge quality. DGL will also collect surface water samples, for subsequent chemical analyses at a duly-accredited laboratory, along the Curraghinalt Burn, the final discharge point, and upstream and downstream of the Owenkillew River (receiving water). The Environmental Monitoring Plan (SLR, February 2013) for the project specifies the surface water monitoring locations, monitoring frequency and key parameters to monitor.

Contingencies to respond to unlikely events that could lead to the temporary shutdowns of the wastewater treatment system (e.g., due to mechanical equipment failure) have been included in the treatment system and are described in the attached Environ Report.

The wastewater treatment system will ensure effluent from the proposed project receives the required level of treatment for achieving compliance with the water quality objectives before being discharged. Moreover, the treatment system will be equipped with instrumentation that will automatically monitor and control key aspects of the treatment system operation.

With the implementation of the proposed water management plan, and treatment system described above, and detailed in the attached Environ report, it is expected that impacts on surface water quality or flow associated with the project exploration activities will not be significant on the Owenkillew River SAC & ASSI.

5.0 WATER MANAGEMENT AND TREATMENT - PROJECT TIME FRAME

A planning application was submitted to the DOE Strategic Planning Division on the 18th February for the proposed exploration tunnel extension. Subject to obtaining the relevant licencing for the project the indicative timescales for Phases 1, 2 and 3 are set out here:

- Phase 1 - Site setup including water management system, duration is 3-4 months.
Indicative time frame is October 2013 to January 2014.
- Phase 2 - Exploration Tunneling, duration is 8-12 months.
Indicative time frame is January 2014 to December 2014.
- Phase 3- De mobilisation and site closure/restoration, duration is 3-6 months
Indicative time frame is January 2015 to July 2015.

The discharge consent will be temporary in nature, during the lifetime of the proposed project (Phases 1 to 3). DGL are seeking a consent to discharge treated water from DGL's activities to run from October 2013 through to May 2015. The water management and treatment system will be in place throughout the three phases of the proposed project, to ensure no adverse impact on the receiving environment from the discharge of water to the Curraghinalt Burn.

6.0 SCREENING REPORT FOR HABITAT REGULATIONS ASSESSMENT

SLR prepared a screening report assessment containing relevant supporting information relating to the ecology (flora and fauna). The screening report was submitted with the planning application to the DoE Strategic Planning Division, in support of the proposed exploration tunnel extension, in order to allow the NIEA to undertake a Habitats Regulations Assessment (HRA).

The screening report assessment has considered the potential effects associated with the discharge of effluent required as part of the proposed exploration works at Curraghinalt, Co. Tyrone on the Owenkillew River SAC.

The assessment concluded that the project is not likely to have an adverse effect on the integrity of the Owenkillew River SAC, or on any of the qualifying habitats or species for which this has been designated and in light of the conservation objectives for this site or features, either as a stand-alone project or in-combination with other plans or projects.

It is considered that the HRA document provides sufficient relevant information to allow Competent Authority, in this NIEA, to reach a determination as that the proposed development is not likely to have any significant impacts on the integrity of the Owenkillew River SAC, under Article 6 of the Habitats Directive (92/43/EEC).

A copy of the screening report assessment and supporting information is submitted here with this consent application, in order to allow the NIEA to undertake a Habitats Regulations Assessment, for the proposed discharge consent associated with the exploration tunnel extension.

7.0 APPLICATION DOCUMENTATION

Further to this covering letter, this application for consent to discharge is accompanied by:

- Cheque for application fee- £118 (Site Drainage).
- A completed application form (Main Application Form W01).
- A completed application form for trade effluent discharges (Application Form W01 - Annex 2).
- Site location plan (1:50,00) - Figure 1.
- Site layout plan (1:5,000) - Figure 2.
- Surface working area (1:1,000) - Figure 3.
- Detailed site layout plan for the adit entrance area (1:500) - Figure 4.
- Proposed Water Treatment System (Environ) - Figure 5.
- Proposed Water Management and Treatment System Report (Environ).
- Habitat Regulations Assessment Report and screening letter.

Further to the pre-application consultation meeting at DGL's offices in Belfast on the 17/04/2013, and presentations regarding the proposed exploration tunnel extension and water management and treatment system, we trust the enclosed information enables you and your colleagues to process this application and issue a discharge consent for the proposed surface and underground mineral exploration activities described herein in a timely manner.

Yours sincerely
SLR Consulting Limited

[Redacted signature]

[Redacted name]

Associate

cc. [Redacted] (Dalradian Gold Ltd).

Enc.

- i. Cheque for fee £118 (Site Drainage)
- ii. Application form for new consent to discharge (Main Application Form W01);
- iii. W01-Annex 2 (Trade Effluent Discharges - Site Drainage);
- iv. Figures 1 to 5;
- v. Water Management and Treatment Report - Environ EC (Canada) Inc.;
- vi. Information to Inform a Habitat regulations Assessment; and
- vii. DGL Drill Site Water Management : Method Statement (April 2013)



WATER (NORTHERN IRELAND) ORDER 1999

MAIN APPLICATION FORM (WO1)

Application for new consent/~~variation to an existing consent~~* to discharge
(*delete as appropriate)

NB: If application is in respect of a single domestic dwelling a separate form (WO2) should be completed.

RETURN TO: Northern Ireland Environment Agency Water Management Unit 17 Antrim Road LISBURN Co Antrim BT28 3AL Tel: 028 9262 3034	<u>Official Use Only</u> File Ref: Date Received: Applic Fee Received: <input type="checkbox"/> Yes £ <input type="checkbox"/> No
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Each applicant must complete this main form and separate Annexes as required. Please look through the form and read the notes carefully before you complete it. Processing of your application will be aided by full and accurate completion of all the relevant sections and provision of the necessary plans. If you have any queries about the form please telephone the above number.

NOTE:

All information contained within this application will be made available on the public register unless there is a request to withhold any of it. Any such request should provide a full justification stating why the information should be withheld.

1 SITE ADDRESS

1.1 Address or other sufficient description of land or premises to which this application applies.

Address: Curraghinalt, Gortin, Co. Tyrone. Description: Mineral Exploration involving the extension of the existing underground exploration tunnel at Curraghinalt. Post Code BT 79 7SF
--

WO1

2 DETAILS OF DISCHARGE(S)

2.1 State the nature of the discharge(s) (see notes i and ii) - tick one or more boxes as appropriate:-

- Sewage discharged from a pumping station under emergency conditions (complete also Annex 1)
- Trade Effluent (including site drainage) (complete Annex 2)
- Landfill/Waste Disposal Site (complete Annex 3)
- Aquaculture Farm (complete Annex 4)
- Sewage Effluent (complete Annex 5)

NB: If application is in respect of a single domestic dwelling a separate form applies. (Form WO2)

2.2 Are there any existing consents to discharge from the premises (see note vi)? Yes No
If yes, please give the reference number(s).

Consent Number 68/12.

3. SITE DETAILS

3.1 Has planning permission been applied for or granted? Yes No
If yes, please give details below.

Dalradian Gold Ltd. have applied for planning permission for: ' Extension to existing underground exploration tunnel; including temporary buildings, vehicle parking, waste rock storage area, water treatment system and passing bays (Planning Ref. No. K/2013/0072/F).

3.2 Please give details of the premises - tick as appropriate:-

- 1. Domestic Dwellings - (please state number)
- 2. Vehicle Parking Area
- 3. Trade Premises (please specify)
- 4. Commercial Premises (please specify)
- 5. Aquaculture Farm (please specify)
- 6. Mineral Workings
- 7. Landfill Site
- 8. Other (please specify)

3.3 Please indicate source of the water supply - tick as appropriate:-

- 1. Well
- 2. Borehole
- 3. Precipitation (eg, rain or snow)
- 4. Mains
- 5. River (please give name below)
- 6. Estuary (please give name below)
- 7. Coastal Water (please give name below)

3.4 Please list amounts/volumes of chemicals and fuels stored on the premises?

An above-ground diesel fuel storage tank, with a capacity of approx. 10,000 litres, will be partially covered. The fuel tank will be bunded to 110% capacity. Oils and lubricants will be stored undercover and on 110% bunded areas or trays.

4 DETAILS OF RECEIVING ENVIRONMENT

- 4.1 Is there a foul sewer available to which the discharge(s) could be made? Yes No
(see note viii)
If yes, please state why it is not practical to connect to it (eg, distance, flow etc)

[Empty box for response to 4.1]

5 DETAILS OF APPLICANT AND OTHER INFORMATION

(See general notes and note xi)

- 5.1 (a) Full name and postal address of applicant. This should be the person who will become the consent holder should consent be granted.

Mr. [REDACTED]
Managing Director,
Dalradian Gold Ltd.
3 Killybrack Road, Omagh

Post Code: BT 79 7DG

E-mail Address: [REDACTED]an.com

Daytime Telephone Number: [REDACTED]

Fax: 028 82257562

Company Registration Number (if appropriate): NI 008465

- (b) Agent (if any) - Full name and postal address:

[REDACTED]
SLR Consulting Ltd.
24 Ballynahinch St
Hillborough, Co. Down

Post Code: BT 26 6AW

E-mail Address: [REDACTED]ulting.com

Daytime Telephone Number: [REDACTED]

Fax: 028 926 81 037

- 5.2 Please give full name and address to which invoices for any annual charges should be sent if different to that given above:

See Section 5.1 (a) above

Post Code: BT

E-mail Address:

Daytime Telephone Number: 028



Fax: 028

DECLARATION

I/We*:

1. apply under the Water (Northern Ireland) Order 1999 for consent to discharge, as described in this Application. "This Application" means this page, all the other pages of this form and any attached annexes, the attached plan(s), any other sheets attached, and any other written information supplied to support the application.
2. enclose the required application fee, payable to the "Department of the Environment" (see note xii).
3. enclose 7 copies of the location map and also the site plan(s) with all relevant information clearly marked (see note xiii).
4. will pay required advertising costs (see note xiv).
5. confirm that I/We* will notify the Department of any changes in the information in this application which might be material to the continuation of the consent, if granted.
6. confirm that the information given in this application and any questions which the Department may have about it is/will* be true to the best of my/our* knowledge, information and belief and am/are* not aware of any other facts or information which might affect either the granting of a consent or the conditions which might be put on it (see note xv).
7. confirm that I/We* will pay any annual charges due should a consent be granted (see note xvii).

(*Delete as appropriate)


APPLICANT'S SIGNATURE:  PRINT NAME: 

ON BEHALF OF: Dava dinn Gold Ltd. DATED: 30/05/2013
 (Name of Company if appropriate)

NB: This section must be signed by the Applicant. (Photocopies not acceptable.)

CONFIDENTIALITY

I/We apply for commercial confidentiality and enclose a full written justification (see note xv).

SIGNED:  DATED: 30/05/2013

CHECK LIST - Have you enclosed?

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Main Form WO1 | <input checked="" type="checkbox"/> Site Plan(s) | <input checked="" type="checkbox"/> Fee |
| <input checked="" type="checkbox"/> Relevant Annexes | <input checked="" type="checkbox"/> Location Map | |

PLEASE RETURN THIS FORM TO THE ADDRESS GIVEN ON THE FRONT PAGE



**WO1 - ANNEX 2
TRADE EFFLUENT DISCHARGES**

Official Use Only
File Ref:

Please complete this annex if you are proposing to discharge trade effluent (this includes site drainage).

1. a) Describe in full the trade effluent and the process(es) from which it arises.

Discharge of groundwater from underground exploration tunnel, surface water runoff from the Surface Compound Area, waste rock runoff, surface and underground exploration drilling return water and Acid Rock Drainage from waste and mineralised rock (see attached Environ report).

b) Please state the type and number of treatment units you are proposing to use (if site drainage please include details of oil/petrol interception facilities).

A Water Management and Treatment system is proposed for the site which will treat runoff and surface exploration drilling return water (see attached Environ report).

2. i) Please state the maximum quantity it is proposed to discharge in any one day. Briefly state how this figure was calculated (see note iii).

842 m³/day

Flow monitoring using a v-notch weir at the existing entrance to the exploration tunnel to measure discharge and Met Office Rainfall data (see attached Environ report for details).

ii) Please state the maximum rate of discharge.

9.75 Litres/sec

2.1 a) Indicate proposed means of discharge - tick as appropriate and show on plan:- (for 1, 2 & 3 please state dimensions below)

- | | | | |
|------------|-------------------------------------|---------------------------------|--------------------------|
| 1. Pipe | <input checked="" type="checkbox"/> | 3. Culvert | <input type="checkbox"/> |
| 2. Channel | <input type="checkbox"/> | 4. Other (please specify below) | <input type="checkbox"/> |

Discharge from water treatment plant will be to the Curraghinalt Burn.

b) Irish Grid Reference(s) of point(s) of discharge (see note iv)

/ /
/ / (please indicate on accompanying site plans)
 ING 257077 E / 386907 N H 5707 8690

2.2 a) Irish Grid Reference(s) of manhole or sampling chamber.

/ /
/ / (please indicate on accompanying site plans)
 ING 257073 E / 386898 N H 5707 8689

b) What flow measurement facilities will be provided? (see note vi)
Please give details

A continuous flow monitoring device (e.g. magnetic flowmeter) will be installed prior to the discharge of treated water to the Curraghinalt Burn.

2.3 a) Type of Treatment Plant(s) to be used - tick as appropriate:-

Treatment Plant	<input checked="" type="checkbox"/>	Other	<input checked="" type="checkbox"/>
*Settlement System	<input checked="" type="checkbox"/>	Interceptor	<input checked="" type="checkbox"/>

A water treatment system will be installed at the site, including settlement lagoon pH control, Nitrate removal hydrocarbon separator. Refer to attached Environ Report for details of the WMS. Settlement pond dimensions will comply with WMU guidance on lagoon sizing and best practice.

b) Will the treatment process involve the use of any chemicals (eg, ferric salts, polyelectrolytes) If yes, please give details. Yes No

Bulk chemicals anticipated to be used at the water treatment system include: Sodium hydroxide (NaOH), Sulphuric acid (H2SO4), polymer solution to aid settlement and methanol as a carbon source (see attached Environ Report).

2.4 a) Is the discharge existing or proposed If proposed:

On what date do you anticipate the discharge will commence?

01 / 10 / 13

b) If you require the consent for a limited time period please give dates;

from: 01 / 10 / 13

to: 01 / 07 / 15

c) If the discharge is not continuous please detail the period/circumstances when it will occur.

3. Receiving Medium - tick the category(s) to which the proposed discharge(s) is(are) to be made:-

- | | | | |
|------------------------------------|-------------------------------------|--|--------------------------|
| 1. Estuary (tidal river or stream) | <input type="checkbox"/> | 5. Into Land | <input type="checkbox"/> |
| 2. River or Stream (non-tidal) | <input checked="" type="checkbox"/> | 6. Onto Land | <input type="checkbox"/> |
| 3. Sub-Surface Irrigation System | <input type="checkbox"/> | 7. Directly into Groundwater | <input type="checkbox"/> |
| 4. Lake, or Pond | <input type="checkbox"/> | 8. Coastal Water (see note vii) | <input type="checkbox"/> |
| | | 9. Waterways via sub-surface irrigation system | <input type="checkbox"/> |

State name of receiving waterway if known:

Curraghinalt Burn

3.1 In the case of sub-surface irrigation systems:-

- (a) Is any part of the system within 5 metres of the boundary of the premises? Yes No
- (b) Is any part of the system within 10 metres of a watercourse? Yes No
- (c) Is any part of the system within 50 metres of a borehole or spring? Yes No
- (d) Percolation tests must be carried out in accordance with British Standard BS6297:1983. Have tests been carried out? If yes please provide details below. Yes No

Date of Pre-soaking

Date of Test

Average percolation value obtained:

Minimum area of the sub-surface irrigation system will be m².

Minimum length of irrigation drains will be metres

Icertify that the percolation test was carried out in accordance with British Standard BS 6297: 1983. (See Guidance Notes at Appendix 1.)

4. Rainfall Dependent Discharges

- a) Will the volume be rainfall dependent? Yes No
- b) If yes, please give the total area drained.
- c) Please give details of any activities which occur in the drainage area which could contaminate surface water (see note b).

The activities at the site include a site compound area facilities, a covered workshop, hardstand refuelling facility, truck washdown area and the storage of waste and mineralised rock. (see attached Environ report for detailed breakdown of site activities potential sources of contamination in runoff).
Waste water from the office and welfare facilities will go to a holding tank which will be emptied by a licenced contractor on an as need basis.

5. Rainfall Independent Discharges

- a) What is the maximum rate of discharge?
- b) What is the average daily flow?
- c) What is the maximum daily flow?
- d) For discharges where the source of supply is other than mains water: n/a

- i) ~~give the Irish Grid Reference of a point where the influent can be sampled.~~

~~/ (please mark on the plan)~~

6. a) Will any self monitoring take place? Yes No
If yes, please give details.

A continuous flow monitoring device (e.g. magnetic flowmeter) will be installed prior to the discharge of treated water in order to monitor discharge volume. Continuous sampling of treated discharge water quality for analysis. (see attached Environ report for details of proposed monitoring systems). DGL will continue to monitor receiving water quality in the Curraghinalt Burn and Owenkillew River which will be undertaken as part of their ongoing baseline sampling and for the planning application.

- b) Will automatic sampling equipment be provided? Yes No
If yes, please give details of type, frequency and location (please indicate on plan)

A continuous automatic water quality monitoring will be undertaken to obtain a composite sample of the treated discharge for analysis. The automatic composite sampler will be located after the water treatment plant.
(see attached Environ report for details of proposed monitoring systems)

7. Has an application for Authorisation been made for a 'prescribed process' under The Industrial Pollution Control (Northern Ireland) Order 1997? Yes No

If yes, please complete the following:-

a) The application reference

b) Contact name of IPRI officer

8. Nature and Composition of Raw Effluent - (if known) Pre treatment effluent quality

(i) Biochemical Oxygen Demand (5 Days)	2.1 mg O ₂ /l
(ii) Suspended Solids (mg/litre)	~ 500 mg/l
(iii) pH Value.	~ 7 pH Units
(iv) Temperature	SW ambient, GW ~ 10°C
(v) Other Information (See Table 12, Environ report)	

9. a) Please indicate if any of the specified substances given below or their compounds will be present in the effluent and if so at what maximum concentration (please give values in micrograms per litre - µg/l). Please see note c.

EC DANGEROUS SUBSTANCES DIRECTIVE/UK RED LIST

LIST I

See Table 12 in attached Environ Report on the Water Management & Treatment for Treated Effluent values.

		CONCENTRATION (ug/l)		
		MAX	MIN	MEAN
1.	<input checked="" type="checkbox"/> Cadmium (Total and dissolved) and its compounds	0.2	.....	.....
2.	<input type="checkbox"/> Carbon tetrachloride	.....	.....	.....
3.	<input type="checkbox"/> Chloroform	.....	.....	.....
4.	<input type="checkbox"/> DDT (the isomers of 1,1,1-trichloro-2,2 bis (p-chlorophenyl ethane)	.....	.....	.....
5.	<input type="checkbox"/> "The Drins" (aldrin, dieldrin, endrin and isodrin)	.....	.....	.....
6.	<input type="checkbox"/> 1,2-Dichloroethane (EDC)	.....	.....	.....
7.	<input type="checkbox"/> Hexachlorobenzene (HCB)	.....	.....	.....
8.	<input type="checkbox"/> Hexachlorobutadiene (HCBD)	.....	.....	.....
9.	<input type="checkbox"/> Hexachlorocyclohexane (lindane and related compounds)	.....	.....	.....
10.	<input checked="" type="checkbox"/> Mercury (Total and dissolved and its compounds)	0.16	.....	.....
11.	<input type="checkbox"/> Pentachlorophenol (PCP)	.....	.....	.....
12.	<input type="checkbox"/> Tetrachloroethylene (PER)	.....	.....	.....
13.	<input type="checkbox"/> Trichlorobenzene (1,2,3-TCB, 1,2,4-TCB, 1,3,5-TCB)	.....	.....	.....
14.	<input type="checkbox"/> Trichloroethylene (TRI)	.....	.....	.....

LIST II

		MAX	MIN	MEAN
15.	<input checked="" type="checkbox"/> Arsenic (Dissolved)	2.2	.....	.....
16.	<input type="checkbox"/> Boron (Total)	.....	.....	.....
17.	<input checked="" type="checkbox"/> Chromium (Total and dissolved)	3	.....	.....
18.	<input checked="" type="checkbox"/> Copper (Total and dissolved)	6.3	.....	.....
19.	<input type="checkbox"/> Cyanide	.....	.....	.....
20.	<input type="checkbox"/> Cyfluthrin	.....	.....	.....
21.	<input checked="" type="checkbox"/> Iron (Total and dissolved)	329	.....	.....
22.	<input checked="" type="checkbox"/> Lead	2.1	.....	.....
23.	<input checked="" type="checkbox"/> Nickel (Total and dissolved)	4.9	.....	.....
24.	<input type="checkbox"/> Perchloroethylene	.....	.....	.....
25.	<input type="checkbox"/> Permethrin	.....	.....	.....
26.	<input type="checkbox"/> Polychlorinated biphenyls (PCB)	.....	.....	.....
27.	<input type="checkbox"/> Organotins (tributyltin & triphenyltin compounds)	.....	.....	.....
28.	<input type="checkbox"/> Vanadium	.....	.....	.....
29.	<input checked="" type="checkbox"/> Zinc (Total and dissolved)	7.4	.....	.....
30.	<input type="checkbox"/> pH if outside the range 5.5 to 9.0	.....	.....	.....
31.	<input type="checkbox"/> PCSD	.....	.....	.....
32.	<input type="checkbox"/> Sulcofuron	.....	.....	.....
33.	<input type="checkbox"/> Flucofuron	.....	.....	.....

ADDITIONAL SUBSTANCES

34.	<input type="checkbox"/> Atrazine	.....	.....	.....
35.	<input type="checkbox"/> Azinphos-ethyl	.....	.....	.....
36.	<input type="checkbox"/> Azinphos-methyl	.....	.....	.....
37.	<input type="checkbox"/> Dichlorvos	.....	.....	.....
38.	<input type="checkbox"/> Dioxins	.....	.....	.....
39.	<input type="checkbox"/> Endosulfan	.....	.....	.....
40.	<input type="checkbox"/> Fenthion	.....	.....	.....
41.	<input type="checkbox"/> Fenitrothion	.....	.....	.....
42.	<input type="checkbox"/> Malathion	.....	.....	.....
43.	<input type="checkbox"/> Parathion	.....	.....	.....
44.	<input type="checkbox"/> Parathion-methyl	.....	.....	.....
45.	<input type="checkbox"/> Simazine	.....	.....	.....
46.	<input type="checkbox"/> 1,1,1 Trichloroethane	.....	.....	.....
47.	<input type="checkbox"/> Triforalin	.....	.....	.....
48.	<input type="checkbox"/> 4-Chloro --methyl-phenol	.....	.....	.....
49.	<input type="checkbox"/> 2-Chlorophenol	.....	.....	.....
50.	<input type="checkbox"/> 2, 4-Dichlorophenol	.....	.....	.....
51.	<input type="checkbox"/> 2, 4-D (ester)	.....	.....	.....
52.	<input type="checkbox"/> 2, 4-D (non-ester)	.....	.....	.....
53.	<input type="checkbox"/> 1, 1, 2-Trichloroethane	.....	.....	.....
54.	<input type="checkbox"/> Bentazone	.....	.....	.....
55.	<input type="checkbox"/> Benzene	.....	.....	.....
56.	<input type="checkbox"/> Biphenyl	.....	.....	.....

		MAX	MIN	MEAN
57.	<input type="checkbox"/> Chloronitrotoluenes	.....	.....	.....
58.	<input type="checkbox"/> Demeton	.....	.....	.....
59.	<input type="checkbox"/> Dimethoate	.....	.....	.....
60.	<input type="checkbox"/> Linuron	.....	.....	.....
61.	<input type="checkbox"/> Mecoprop	.....	.....	.....
62.	<input type="checkbox"/> Naphthalene	.....	.....	.....
63.	<input type="checkbox"/> Omethoate	.....	.....	.....
64.	<input type="checkbox"/> Toluene	.....	.....	.....
65.	<input type="checkbox"/> Triazaphos	.....	.....	.....
66.	<input type="checkbox"/> Xylene	.....	.....	.....
67.	<input type="checkbox"/> Alachlor	.....	.....	.....
68.	<input type="checkbox"/> Anthracene	.....	.....	.....
69.	<input type="checkbox"/> Brominated diphenylether	.....	.....	.....
70.	<input type="checkbox"/> C ₁₀₋₁₃ -Chloroalkanes	.....	.....	.....
71.	<input type="checkbox"/> Chloropyrifos	.....	.....	.....
72.	<input type="checkbox"/> Dichloromethane	.....	.....	.....
73.	<input type="checkbox"/> Di-2-ethylhexyl phthalate (DEHP)	.....	.....	.....
74.	<input type="checkbox"/> Diuron	.....	.....	.....
75.	<input type="checkbox"/> Isoproturon	.....	.....	.....
76.	<input type="checkbox"/> Nonylphenols	.....	.....	.....
77.	<input type="checkbox"/> Octylphenols	.....	.....	.....
78.	<input type="checkbox"/> Polyaromatic hydrocarbons	.....	.....	.....
	Other substance(s) that should be taken into account	.....	.....	.....

This list is applicable as at 1 November 2000.

Are there any other significant chemical components used on site which may be contained in the effluent, including biocides or additives?
If yes, please give details

Yes No

- Hydraulic Oil and Engine Oil
 - Nitrates (Explosive Materials)
 - Sodium hydroxide (NaOH), Sulphuric acid (H₂SO₄), polymer solution to aid settlement and methanol as a carbon source, see attached Environ Report.

Notes (see also the notes attached to the main form):

- a) For direct trade effluent discharges, full details of the type of the effluent are required (eg, cooling water from air conditioning units), along with typical analytical details and the results of any toxicity studies on the effluent or its constituents. In certain circumstances the Department may require that specific samples be taken and tests and analysis carried out.
- b) Possible sources of contamination include oil/chemical storage areas, vehicle loading/unloading areas, heavy vehicle parking areas and oil/petrol filling points. Any other potential sources of contamination should be detailed.
- c) Where discharges of trade effluent take place to a sewerage system, as covered by this application, please give details of all authorised discharges of substances listed in table 7 overleaf.



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Our aim is to protect, conserve and promote the natural environment and built heritage for the benefit of present and future generations.

04/03.23

