# Table of Contents

# ***FACILITY INFORMATION SUMMARY***

| | |
|---|---|
| AER Reporting Year: | 2012 |
| Licence Register Number: | W0256-01 |
| Name of Site: | Lennon Quarries Ltd |
| Site Location: | Tallagh, Belmullet, Co. Mayo |
| Class/Classes of Activity: | |
| National Grid Reference: | |

# Emissions from the Facility

All our emissions from water were below the limits required by the EPA.

From July onwards, we added an extra emissions monitoring point ourselves.

This emissions point can be found in a stream that runs into the Clooneen River.

I have marked the position of the emission point on the map found in appendix 1.A.

As you can see from the results the levels of the emissions are higher in the emission point found in the stream, than the levels found in the emission sites found on our site.

Therefore it would appear that our settlement ponds are helping to dilute the stream and river.

All the results can be found in appendix 1 of this document.

The emission point from the stream is marked Surface Water 6. Downstream in the monitoring reports.

## Progress of Waste Deposition Works

We are to fill the site in 3 phases and we are hoping to be in a position to grass seed a part of phase 1 in July or August 2013.

## Resource Consumption Summary

There is no electricity on site so the only resource being used is diesel for the machine that is used on site. Last year there was 3,854 litres of diesel used in the machine on site.

## Complaints Summary

There were no complaints made to or about the facility in 2012.

## Schedule of Environmental Objectives and Targets

Lennon Quarries Ltd. Environmental objectives for waste licence W0256-01 are:

- To comply fully with the conditions of EPA Waste License W0256-01
- To comply with applicable environmental legislation and best industry practice
- To be a good neighbor
- To respect the legitimate concerns and interests of the community
- To achieve continuous improvement in environmental performance
- Carry out the business of soil/stones recovery in a manner which will minimize adverse effects on the environment and the local community.
- Conserve resources by making efficient use of energy and raw materials.
- Ensure that employees and contractors perform their duties in a manner consistent with this environmental code.
- Be committed to good environmental management.

Lennon Quarries Ltd will actively pursue these objectives by:

- Implementing this Environmental Management System (EMS) to assist in achieving the policy;
- Making available the required financial resources to operate this policy in accordance with Best Available Technique (BAT) principles;
- Recognising that the successful implementation of this policy depends on the ongoing commitment of all those working for the company, including all employees and all contractors.

# ***Environmental Management Programme***

Mr Dermot Lennon as the nominated 'Facility Manager' will have the responsibility to ensure that this Environmental Management System and the environmental objectives and targets are fully implemented.

In order to achieve this Mr. Dermot Lennon must be fully knowledgeable about the conditions of EPA Waste Licence W0256-01 and with relevant environmental legislation and best industry practice.

Mr Dermot Lennon must nurture a positive relationship with the local community and ensures that the legitimate concerns and interests of the community (in relation to the waste licensed facility) are fully dealt with.

He must ensure that all procedures (as dictated by Waste Licence W0256-01) (including reporting on Energy/Resource Use) are fully adhered to by other employees at the facility and by all those entering the facility.

All procedures will be implemented on the site immediately. The environmental objectives and targets will be reviewed (& updated

where necessary) on an annual basis, as part of the annual Environmental Management System review and will be attached as an appendix to the Annual Environmental Report (AER) (due to be lodged with the EPA <31st March each year).

As conditioned, the Environmental Management System reports will be stored in the site office for a period of not less than 7 years and shall be available (during facility opening times) for inspection by members of the EPA, or members of the public.

## Noise Monitoring Report

Noise is only monitored when a complaint is made which is stated in the conditions of waste licence W0256-01.

There were no complaints in 2012.

# Dust Monitoring Report

As per the conditions of waste licence W0256-01, Dust is monitored bi-annually.

As you can see from the reports the results were below the limit imposed on our licence of 350 mg/m2/day.

Copies of the results can be found at appendix 2.

# ***BIRD SURVEY REPORT***

A bird survey was carried out in August 2012 as per conditions of our waste licence.

It found that the current operations of the site are not significantly impacting breeding bird species.

The full report can be found in appendix 4.

## Reported Incidents Summary

No Incidents occurred in the facility during 2012

## Development/Infrastructural Works Summary

In 2012 temporary access roads were created

A hard standing area and turning circle were completed

Settlement ponds were completed in January 2012

# Management and Staffing Structure

**Mr T.J Lennon** is the owner/managing director of Lennon Quarries Ltd

**Mr. Dermot Lennon** is the nominated 'Facility Manager'. It is Mr D. Lennon's responsibility to ensure that the facility is operated in full compliance with all conditions of Waste Licence W0256-01. He will be the person in ongoing contact with the EPA in relation to licence compliance. Licence compliance may require the sub-contracting of works to contractors (e.g. upkeep of fencing, gates, etc.) and/or consultants (e.g. environmental monitoring, completion of AER Reports, topographic surveying, etc.) it will be Mr. D Lennon's responsibility to communicate and manage these sub-contracts.

**Mr. T.J Lennon (Junior)** is the nominated 'Deputy Facility Manager' and 'Machine Operative'. It is Mr. T.J Lennon (Junior)'s responsibility for the day-to-day operation of the facility. He will open and close the facility on a daily basis, accept waste, quarantine unauthorised wastes, spread the imported material over the site and control all the abatement/treatment systems onsite.

**Ms Sandra Carey** will deal with all administration duties such as keeping records up to date in site office and AER returns.

**External Consultants** will be contracted to carry out the environmental monitoring and associated reporting conditions under Waste Licence W0256-01. The consultants will report directly to the Facility Manager.

## ***Programme for Public Information***

There is a notice board at the entrance of the Facility which includes the name and telephone number of the facility, the opening hours and an emergency out of hours contact number.

There is an office on site that will contain the *Environmental Management Documentation System*. This will include a series of clearly labelled folders, stored in an orderly and easy to access fashion, in the facility site office. The folders will be kept up to date and will be available for inspection by members of the EPA and members of the public, during opening hours at the facility.

# Waste Summary

The total tonnage accepted in 2012 was 37,289.50

After discussions with Michael Henry, (senior inspector in Castlebar); we were allowed an extra 12,450 tonnes (half the annual licence limit) from the 01/07/2012 to 31/12/12.

This extra allowance was given providing we subtract from the 12,450, an amount of 2,095 tonnes that we accepted to the site for construction materials last year. That gave us a limit of 10,335 tones from 01/07/2012 to the 31/12/2012.

Please see supporting documentation in appendix 4 for further information.

# Appendix 1: Water Monitoring Results

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| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon<br>Lennon's Quarries<br>Glen Castle<br>Bunnahoeen<br>Ballina, Co.Mayo | Report No.<br>Date of Receipt<br>Start Date of Analysis<br>Date of Report<br>Order Number<br>Sample taken by | : 160526<br>: 04/04/2012<br>: 04/04/2012<br>: 17/04/2012<br>:<br>: Client | |

## CERTIFICATE OF ANALYSIS

**Results**

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 368195 | Surface Water 2. Downstream | Antimony, total | <0.5 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Chromium, total | 0.7 | ug/l |
| | | Cobalt, total | 0.6 | ug/l |
| | | Conductivity @20C | 369 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <100 | ug/l |
| | | Lead, total | 0.8 | ug/l |
| | | Mineral Oil (by calculation) | <100 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | pH | 6.7 | pH Units |
| | | Selenium, total | <0.5 | ug/l |
| | | Suspended Solids | 5 | mg/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Total Heavy Metals | 4.1 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Zinc, total | <5 | ug/l |

IRL 1165 IVNAB ACCREDITED TESTING DETAILS IN SCOPE SEE NO. 1001

Approved by: Barbara Lee

Barbara Lee
Environmental Scientist

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| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 160527 |
| | Lennon's Quarries | Date of Receipt | : | 04/04/2012 |
| | Glen Castle | Start Date of Analysis | : | 04/04/2012 |
| | Bunnahoeen | Date of Report | : | 17/04/2012 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

**Results**

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 368196 | Surface Water 3. Downstream | Antimony, total | <0.5 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Chromium, total | 0.9 | ug/l |
| | | Cobalt, total | 0.6 | ug/l |
| | | Conductivity @20C | 370 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <100 | ug/l |
| | | Lead, total | 1 | ug/l |
| | | Mineral Oil (by calculation) | <100 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | pH | 6.7 | pH Units |
| | | Selenium, total | <0.5 | ug/l |
| | | Suspended Solids | <2 | mg/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Total Heavy Metals | 10.5 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Zinc, total | 6 | ug/l |

Approved by: Barbara Lee

Barbara Lee
Environmental Scientist

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Client : Dermot Lennon
Lennon's Quarries
Glen Castle
Bunnahoeen
Ballina, Co.Mayo

Report No. : 160528
Date of Receipt : 04/04/2012
Start Date of Analysis : 04/04/2012
Date of Report : 17/04/2012
Order Number :
Sample taken by : Client

## CERTIFICATE OF ANALYSIS

**Results**

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 368197 | Surface Water 4. Downstream | Antimony, total | <0.5 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Chromium, total | 0.8 | ug/l |
| | | Cobalt, total | 0.6 | ug/l |
| | | Conductivity @20C | 369 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <100 | ug/l |
| | | Lead, total | 0.9 | ug/l |
| | | Mineral Oil (by calculation) | <100 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | pH | 6.7 | pH Units |
| | | Selenium, total | <0.5 | ug/l |
| | | Suspended Solids | <2 | mg/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Total Heavy Metals | 10.3 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Zinc, total | 6 | ug/l |

Approved by: Barbara Lee

Barbara Lee
Environmental Scientist

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| | | | | |
|---|---|---|---|---|
| Client | : | Dermot Lennon<br>Lennon's Quarries<br>Glen Castle<br>Bunnahoeen<br>Ballina, Co.Mayo | Report No.<br>Date of Receipt<br>Start Date of Analysis<br>Date of Report<br>Order Number<br>Sample taken by | : 160529<br>: 04/04/2012<br>: 04/04/2012<br>: 17/04/2012<br>:<br>: Client |

## CERTIFICATE OF ANALYSIS

**Results**

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 368198 | Surface Water 5. Downstream | Antimony, total | <0.5 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Chromium, total | 0.8 | ug/l |
| | | Cobalt, total | 0.6 | ug/l |
| | | Conductivity @20C | 370 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | 132 Unknown Pattern * | ug/l |
| | | Lead, total | 0.6 | ug/l |
| | | Mineral Oil (by calculation) | 132 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | pH | 6.7 | pH Units |
| | | Selenium, total | <0.5 | ug/l |
| | | Suspended Solids | 5 | mg/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Total Heavy Metals | 4 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Zinc, total | <5 | ug/l |

*** Note: The comment expressed here is an interpretation and is not INAB accredited**

Approved by: Barbara Lee

**Barbara Lee**
**Environmental Scientist**

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| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 167855 |
| | Lennon's Quarries | Date of Receipt | : | 11/07/2012 |
| | Glen Castle | Start Date of Analysis | : | 11/07/2012 |
| | Bunnahoeen | Date of Report | : | 02/08/2012 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 85626 | Surface Water 1. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 7.0 | pH Units |
| | | Conductivity @20C | 280 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | <5 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | 0.7 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 2.3 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <100 | ug/l |
| | | Mineral Oil (by calculation) | <100 | ug/l |

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Barbara Lee
Environmental Scientist

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Client : Dermot Lennon
Lennon's Quarries
Glen Castle
Bunnahoeen
Ballina, Co.Mayo

Report No. : 167856
Date of Receipt : 11/07/2012
Start Date of Analysis : 11/07/2012
Date of Report : 03/08/2012
Order Number :
Sample taken by : Client

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 85627 | Surface Water 2. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.7 | pH Units |
| | | Conductivity @20C | 367 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | <5 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | 0.8 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | 0.6 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 3.0 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <100 | ug/l |
| | | Mineral Oil (by calculation) | <100 | ug/l |

Approved by: Barbara Lee
Barbara Lee
Environmental Scientist

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Client : Dermot Lennon
Lennon's Quarries
Glen Castle
Bunnahoeen
Ballina, Co.Mayo

| | | |
|---|---|---|
| Report No. | : | 167857 |
| Date of Receipt | : | 11/07/2012 |
| Start Date of Analysis | : | 11/07/2012 |
| Date of Report | : | 03/08/2012 |
| Order Number | : | |
| Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 85628 | Surface Water 3. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.6 | pH Units |
| | | Conductivity @20C | 365 | uS/cm |
| | | Copper, total | 4 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 6 | ug/l |
| | | Chromium, total | 0.7 | ug/l |
| | | Nickel, total | 0.6 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | 0.7 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 13.0 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <100 | ug/l |
| | | Mineral Oil (by calculation) | <100 | ug/l |

Approved by: Barbara Lee
Barbara Lee
Environmental Scientist

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| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 167858 |
| | Lennon's Quarries | Date of Receipt | : | 11/07/2012 |
| | Glen Castle | Start Date of Analysis | : | 11/07/2012 |
| | Bunnahoeen | Date of Report | : | 03/08/2012 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 85629 | Surface Water 4. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.7 | pH Units |
| | | Conductivity @20C | 353 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | <5 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | 0.7 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | 0.6 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 2.9 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <100 | ug/l |
| | | Mineral Oil (by calculation) | <100 | ug/l |

Approved by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications

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| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 167859 |
| | Lennon's Quarries | Date of Receipt | : | 11/07/2012 |
| | Glen Castle | Start Date of Analysis | : | 11/07/2012 |
| | Bunnahoeen | Date of Report | : | 03/08/2012 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 85630 | Surface Water 5. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.5 | pH Units |
| | | Conductivity @20C | 355 | uS/cm |
| | | Copper, total | 2 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | <5 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | 0.6 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | 0.7 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 4.9 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <200 | ug/l |
| | | Mineral Oil (by calculation) | <200 | ug/l |

IVNAB TESTING

**Approved by:** Barbara Lee

**Barbara Lee**
**Environmental Scientist**

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| | | | | | |
|---|---|---|---|---|---|
| Client | : | Dermot Lennon | Report No. | : | 167860 |
| | | Lennon's Quarries | Date of Receipt | : | 11/07/2012 |
| | | Glen Castle | Start Date of Analysis | : | 11/07/2012 |
| | | Bunnahoeen | Date of Report | : | 03/08/2012 |
| | | Ballina, Co.Mayo | Order Number | : | |
| | | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 35631 | Surface Water 6. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.7 | pH Units |
| | Extra monitoring | Conductivity @20C | 293 | uS/cm |
| | Point taken | Copper, total | 2 | ug/l |
| | From Stream | Arsenic, total | 0.6 | ug/l |
| | that runs into | Zinc, total | 11 | ug/l |
| | Clooneen River | Chromium, total | 1 | ug/l |
| | Off site | Nickel, total | 2 | ug/l |
| | see map in | Lead, total | 2 | ug/l |
| | Appendix 1 A. | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 4 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 22.6 | ug/l |
| | | Extractable HC/ DRO (C8-C40) total and dissolved | <100 | ug/l |
| | | Mineral Oil (by calculation) | <100 | ug/l |

Approved by: Barbara Lee
Barbara Lee
Environmental Scientist

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[web] www.completelabsolutions.com

| | | | | |
|---|---|---|---|---|
| Client | : | Dermot Lennon<br>Lennon's Quarries<br>Glen Castle<br>Bunnahowen<br>Ballina, Co.Mayo | Report No.<br>Date of Receipt<br>Start Date of Analysis<br>Date of Report<br>Order Number<br>Sample taken by | : 179911<br>: 26/11/2012<br>: 26/11/2012<br>: 14/12/2012<br>:<br>: Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 12131 | Surface Water 1. Downstream | Suspended Solids | 3 | mg/l |
| | | pH | 6.3 | pH Units |
| | | Conductivity @20C | 170 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | <5 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 1.6 | ug/l |
| | | Mineral Oil (by calculation) | 149 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) Total and Dissolved by GC-FID | 149 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

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Barbara Lee
Environmental Scientist

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[Email] services@cls.ie
[web] www.completelabsolutions.com

| | | | | |
|---|---|---|---|---|
| Client | : | Dermot Lennon | Report No. | : 179912 |
| | | Lennon's Quarries | Date of Receipt | : 26/11/2012 |
| | | Glen Castle | Start Date of Analysis | : 26/11/2012 |
| | | Bunnahowen | Date of Report | : 14/12/2012 |
| | | Ballina, Co.Mayo | Order Number | : |
| | | | Sample taken by | : Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 12133 | Surface Water 2. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.6 | pH Units |
| | | Conductivity @20C | 168 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 8 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | 0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 1.2 | ug/l |
| | | Mineral Oil (by calculation) | 224 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) Total and Dissolved by GC-FID | 224 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

Approved by: Barbara Lee

Barbara Lee
Environmental Scientist

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[web] www.completelabsolutions.com

| | | | | |
|---|---|---|---|---|
| Client | : | Dermot Lennon<br>Lennon's Quarries<br>Glen Castle<br>Bunnahowen<br>Ballina, Co.Mayo | Report No.<br>Date of Receipt<br>Start Date of Analysis<br>Date of Report<br>Order Number<br>Sample taken by | : 179913<br>: 26/11/2012<br>: 26/11/2012<br>: 14/12/2012<br>:<br>: Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 12134 | Surface Water 3. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.3 | pH Units |
| | | Conductivity @20C | 167 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 6 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | 0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 7.1 | ug/l |
| | | Mineral Oil (by calculation) | 141 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) Total and Dissolved by GC-FID | 141 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

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Barbara Lee
Environmental Scientist

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[web] www.completelabsolutions.com

| | | | | |
|---|---|---|---|---|
| Client | : | Dermot Lennon<br>Lennon's Quarries<br>Glen Castle<br>Bunnahowen<br>Ballina, Co.Mayo | Report No.<br>Date of Receipt<br>Start Date of Analysis<br>Date of Report<br>Order Number<br>Sample taken by | : 179914<br>: 26/11/2012<br>: 26/11/2012<br>: 14/12/2012<br>:<br>: Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 12135 | Surface Water 4. Downstream | Suspended Solids | 2 | mg/l |
| | | pH | 6.2 | pH Units |
| | | Conductivity @20C | 162 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 7 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 8.6 | ug/l |
| | | Mineral Oil (by calculation) | 169 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) Total and Dissolved by GC-FID | 169 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

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Environmental Scientist

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[web] www.completelabsolutions.com

| | | | | |
|---|---|---|---|---|
| Client | : | Dermot Lennon | Report No. | : 179915 |
| | | Lennon's Quarries | Date of Receipt | : 26/11/2012 |
| | | Glen Castle | Start Date of Analysis | : 26/11/2012 |
| | | Bunnahowen | Date of Report | : 14/12/2012 |
| | | Ballina, Co.Mayo | Order Number | : |
| | | | Sample taken by | : Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 12136 | Surface Water 5. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.8 | pH Units |
| | | Conductivity @20C | 166 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 6 | ug/l |
| | | Chromium, total | 0.8 | ug/l |
| | | Nickel, total | 0.7 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 1.58 | ug/l |
| | | Mineral Oil (by calculation) | 505 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) Total and Dissolved by GC-FID | 505 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

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Barbara Lee
Environmental Scientist

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| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 179916 |
| | Lennon's Quarries | Date of Receipt | : | 26/11/2012 |
| | Glen Castle | Start Date of Analysis | : | 26/11/2012 |
| | Bunnahowen | Date of Report | : | 14/12/2012 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 12137 | Surface Water 6. Downstream | Suspended Solids | 3 | mg/l |
| | | pH | 7.6 | pH Units |
| | Extra Monitoring Point taken from Stream that runs into Clooncan River off Site. see map in Appendix 1A | Conductivity @20C | 215 | uS/cm |
| | | Copper, total | 4 | ug/l |
| | | Arsenic, total | 0.7 | ug/l |
| | | Zinc, total | 19 | ug/l |
| | | Chromium, total | 2 | ug/l |
| | | Nickel, total | 2 | ug/l |
| | | Lead, total | 0.6 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 4 | ug/l |
| | | Molybdenum, total | 0.9 | ug/l |
| | | Tin, total | 0.6 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 7.07 | ug/l |
| | | Mineral Oil (by calculation) | 314 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) Total and Dissolved by GC-FID | 314 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

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Environmental Scientist

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| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 181942 |
| | Lennon's Quarries | Date of Receipt | : | 14/12/2012 |
| | Glen Castle | Start Date of Analysis | : | 14/12/2012 |
| | Bunnahowen | Date of Report | : | 14/01/2013 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

**CERTIFICATE OF ANALYSIS**

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 16719 | Surface Water 1. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 7.7 | pH Units |
| | | Conductivity @20C | 203 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 6 | ug/l |
| | | Chromium, total | 0.7 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 8.7 | ug/l |
| | | Mineral Oil (by calculation) | 152 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | 152 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

**Approved by:** Barbara Lee
**Barbara Lee**
**Environmental Scientist**

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|---|---|---|---|---|
| Client | : | Dermot Lennon<br>Lennon's Quarries<br>Glen Castle<br>Bunnahowen<br>Ballina, Co.Mayo | Report No.<br>Date of Receipt<br>Start Date of Analysis<br>Date of Report<br>Order Number<br>Sample taken by | : 181943<br>: 14/12/2012<br>: 14/12/2012<br>: 09/01/2013<br>:<br>: Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 6720 | Surface Water 2. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 7.0 | pH Units |
| | | Conductivity @20C | 191 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | <5 | ug/l |
| | | Chromium, total | <0.5 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 1 | ug/l |
| | | Molybdenum, total | 0.6 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 1.6 | ug/l |
| | | Mineral Oil (by calculation) | 70 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | 70 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

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Barbara Lee
Environmental Scientist

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| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon<br>Lennon's Quarries<br>Glen Castle<br>Bunnahowen<br>Ballina, Co.Mayo | Report No.<br>Date of Receipt<br>Start Date of Analysis<br>Date of Report<br>Order Number<br>Sample taken by | :<br>:<br>:<br>:<br>:<br>: | 181944<br>14/12/2012<br>14/12/2012<br>09/01/2013<br><br>Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 6721 | Surface Water 3. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.9 | pH Units |
| | | Conductivity @20C | 189 | uS/cm |
| | | Copper, total | 1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 12 | ug/l |
| | | Chromium, total | 1 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 16 | ug/l |
| | | Mineral Oil (by calculation) | 91 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | 91 Unknown Pattern* | ug/l |

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Barbara Lee
Environmental Scientist

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|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 181945 |
| | Lennon's Quarries | Date of Receipt | : | 14/12/2012 |
| | Glen Castle | Start Date of Analysis | : | 14/12/2012 |
| | Bunnahowen | Date of Report | : | 09/01/2013 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 6722 | Surface Water 4. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.7 | pH Units |
| | | Conductivity @20C | 187 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 15 | ug/l |
| | | Chromium, total | 0.6 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 17.6 | ug/l |
| | | Mineral Oil (by calculation) | 138 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | 138 Unknown Pattern* | ug/l |

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Barbara Lee
Environmental Scientist

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|---|---|---|---|---|
| Client | : Dermot Lennon<br>Lennon's Quarries<br>Glen Castle<br>Bunnahowen<br>Ballina, Co.Mayo | Report No.<br>Date of Receipt<br>Start Date of Analysis<br>Date of Report<br>Order Number<br>Sample taken by | :<br>:<br>:<br>:<br>:<br>: | 181946<br>14/12/2012<br>14/12/2012<br>09/01/2013<br><br>Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 6723 | Surface Water 5. Downstream | Suspended Solids | <2 | mg/l |
| | | pH | 6.5 | pH Units |
| | | Conductivity @20C | 187 | uS/cm |
| | | Copper, total | <1 | ug/l |
| | | Arsenic, total | <0.5 | ug/l |
| | | Zinc, total | 14 | ug/l |
| | | Chromium, total | 0.7 | ug/l |
| | | Nickel, total | <0.5 | ug/l |
| | | Lead, total | <0.5 | ug/l |
| | | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | | Cobalt, total | <0.5 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 2 | ug/l |
| | | Molybdenum, total | <0.5 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 16.7 | ug/l |
| | | Mineral Oil (by calculation) | 72 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | 72 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

Approved by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications

Complete Laboratory Solutions
RosMuc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 181947 |
| | Lennon's Quarries | Date of Receipt | : | 14/12/2012 |
| | Glen Castle | Start Date of Analysis | : | 14/12/2012 |
| | Bunnahowen | Date of Report | : | 09/01/2013 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

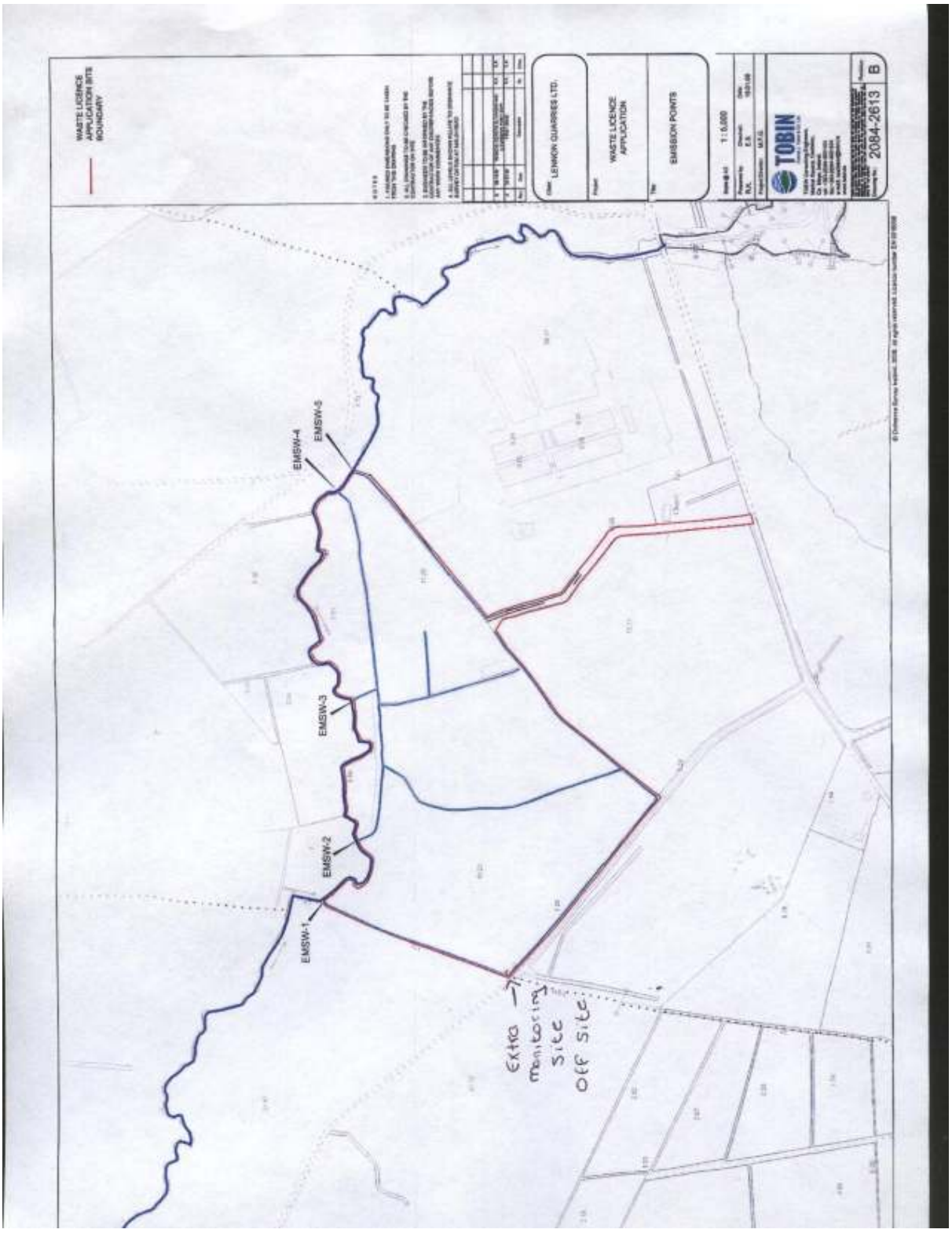
| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 6724 | Surface Water 6. Downstream | Suspended Solids | 26 | mg/l |
| | | pH | 6.7 | pH Units |
| | | Conductivity @20C | 236 | uS/cm |
| | Extra monitoring | Copper, total | 5 | ug/l |
| | | Arsenic, total | 0.7 | ug/l |
| | Point taken | Zinc, total | 19 | ug/l |
| | | Chromium, total | 2 | ug/l |
| | From stream | Nickel, total | 1 | ug/l |
| | | Lead, total | 1 | ug/l |
| | that runs into | Antimony, total | <0.5 | ug/l |
| | | Cadmium, total | <0.5 | ug/l |
| | Clooneen River | Cobalt, total | 0.6 | ug/l |
| | | Selenium, total | <0.5 | ug/l |
| | | Tellurium, total | <0.5 | ug/l |
| | Off site | Thallium, total | <0.5 | ug/l |
| | | Vanadium, total | 5 | ug/l |
| | See map | Molybdenum, total | 1 | ug/l |
| | | Tin, total | <0.5 | ug/l |
| | in Appendix | Beryllium, total | <0.5 | ug/l |
| | | Total Heavy Metals | 35.2 | ug/l |
| | 1.A. | Mineral Oil (by calculation) | 162 | ug/l |
| | | Extractable Hydrocarbons Water (C8-C40, Diesel Range and Lube Oil) by GC-FID | 162 Unknown Pattern* | ug/l |

* Note: The comment expressed here is an interpretation and is not INAB accredited.

Approved by: Barbara Lee
Barbara Lee
Environmental Scientist

See reverse for Test Specifications
This report only relates to items tested and shall not be reproduced but in full with the permission of Complete Laboratory Solutions.

# Appendix 1.a


WASTE LICENCE APPLICATION SITE BOUNDARY
LENNON QUARRIES LTD.
WASTE LICENCE APPLICATION
EMISSION POINTS
1:5,000
TOBIN
2084-2613
B
EMSW-4
EMSW-5
EMSW-3
EMSW-2
EMSW-1
Extra monitoring Site off Site

# Appendix 2: Dust Monitoring Results

Complete Laboratory Solutions
RosMuc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

| | | | | |
|---|---|---|---|---|
| Client | : Dermot Lennon | Report No. | : | 172891 |
| | Lennon's Quarries | Date of Receipt | : | 10/09/2012 |
| | Glen Castle | Start Date of Analysis | : | 10/09/2012 |
| | Bunnahoeen | Date of Report | : | 18/09/2012 |
| | Ballina, Co.Mayo | Order Number | : | |
| | | Sample taken by | : | Client |

## CERTIFICATE OF ANALYSIS

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 397379 | DS 1. | Settleable Dust (Bergerhoff Method) | 55 | mg/sq.m/day |
| 397380 | DS 2. | Settleable Dust (Bergerhoff Method) | 60 | mg/sq.m/day |
| 397381 | DS 3. | Settleable Dust (Bergerhoff Method) | 6 | mg/sq.m/day |

**Approved by:** Barbara Lee
**Barbara Lee**
**Environmental Scientist**

See reverse for Test Specifications
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[web] www.completelabsolutions.com

| | | | | | |
|---|---|---|---|---|---|
| Client | : | Dermot Lennon | Report No. | : | 181948 |
| | | Lennon's Quarries | Date of Receipt | : | 14/12/2012 |
| | | Glen Castle | Start Date of Analysis | : | 14/12/2012 |
| | | Bunnahowen | Date of Report | : | 16/01/2013 |
| | | Ballina, Co.Mayo | Order Number | : | |
| | | | Sample taken by | : | Client |

**CERTIFICATE OF ANALYSIS**

| Lab No | Sample Description | Test | Result | Units |
|---|---|---|---|---|
| 416725 | DS 1. | Settleable Dust (Bergerhoff Method) | 106 | mg/sq.m/day |
| 416726 | DS 2. | Settleable Dust (Bergerhoff Method) | 92 | mg/sq.m/day |
| 416727 | DS 3. | Settleable Dust (Bergerhoff Method) | 172 | mg/sq.m/day |

**Approved by:**

Rita McGrath

**Rita McGrath**
**Environmental Scientist**

See reverse for Test Specifications

# Appendix 3: Bird Survey Report

LENNON QUARRIES LTD

# Breeding Bird Survey 2012

## At Tallagh, Belmullet, Co Mayo

August 2012

TOBIN CONSULTING ENGINEERS

TOBIN
Patrick J. Tobin & Co. Ltd.

# REPORT

**PROJECT:** **Breeding Bird Survey 2012**

**CLIENT:**
**Lennon Quarries Ltd**
Tallagh,
Belmullet
County Mayo

**COMPANY:**
**TOBIN Consulting Engineers**
Block 10-4
Blanchardstown Corporate Park
Dublin 15

www.tobin.ie

## DOCUMENT AMENDMENT RECORD

| | |
|---|---|
| **Client:** | **Lennon Quarries Ltd** |
| **Project:** | **Material Recovery Facility at Tallagh, Belmullet, Co Mayo.** |
| **Title:** | **Breeding Bird Survey 2012** |

| PROJECT NUMBER: 2084 | | | | DOCUMENT REF: 2084 BBS | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| A | Draft Report | RM | 03/08/12 | ES | 08/08/12 | DG | 08/08/12 |
| Revision | Description & Rationale | Originated | Date | Checked | Date | Authorised | Date |
| TOBIN Consulting Engineers | | | | | | | |

## TABLE OF CONTENTS

# 1 INTRODUCTION

TOBIN Consulting Engineers were commissioned by Lennon's Quarries Ireland Ltd to undertake a survey of the breeding birds on an existing material recovery facility at Tallagh, Belmullet, Co Mayo. This survey is required to comply with condition 6.14 of the waste license for the site (License Register Number: W0256-01) as detailed below.

6.14 Bird Survey

The licensee shall carry out an annual breeding bird survey, unless otherwise required by the Agency. The survey shall record the number of birds of conservation concern utilising the site. The results of this assessment shall be reported as part of the Annual Environmental Report.

The survey was carried out by an experienced bird surveyor from Tobin Consulting Engineers (> 11 years relevant experience). The key aims were to record species of conservation concern on the site and immediate environs.

# 2 SITE DESCRIPTION/ CONTEXT

The site consists predominantly of cutover bog and wet grassland within a landholding of 27.22ha (including entrance road). Within this area the inert material recovery facility is present and extends to c.a. 2HA currently. Also present are new settlement ponds and a stream on the site boundary.

The wider landscape surrounding the site is very open with few trees. Dominant habitats consist of degraded bog, less degraded bog areas, marginal farmland, more improved farmland, scattered housing and coastal habitats. Noteworthy features are an area of nettle beds adjacent to a mushroom facility close to the site boundary (offsite).

These habitats and the coastal location of the site influence bird usage of the site.

# 3 METHODOLOGY

The site was surveyed for the presence of breeding birds on 31st July 2012. While this is relatively late in the breeding bird season, it is still a suitable period for detecting breeding birds and falls within the recommended season for surveying breeding birds (see Ciria 587 guidelines for when to survey birds[1]).

The survey area included the site and a buffer zone of approximately 100m around the site boundary.

[1] http://www.solihull.gov.uk/Attachments/Ecological_Surveys_Calendar.pdf

Populations of birds breeding on site were assessed by carrying out a breeding bird survey based on the methodology devised for the Countryside Bird Survey (CBS). The CBS is a scheme organised by BirdWatch Ireland that is used to assess populations of breeding birds throughout Ireland.

The methodology involved walking two transects across the survey area and also walking around the entire site boundary. All birds seen or heard from each transect were recorded on field maps in order to ensure that no birds were counted twice. A summary of breeding birds noted on the site and in the vicinity of the site, their breeding status and conservation status is detailed herein.

During the survey regular stops were made to scan and listen for birds, including immediately adjoining areas beyond the proposed site boundary. Site visits were carried out to coincide with the diurnal peak of bird activity (06.00 – 13.00).

Weather conditions during all the site visit was mild and clear with light winds up to 10am after which some showers started. Overall weather conditions were adequate for survey.

## 4 RESULTS

A summary of all birds recorded is provided in Table 1.

**Table 1 Birds Recorded on site/ adjacent areas, conservation status and comments**

| Common Name | Latin Name | Conservation Status [2] | Breeding Status on site[3] | Comments |
|---|---|---|---|---|
| Corncrake | *Crex crex* | Red. Annex 1 | b | Not recorded during survey. 1 male was present in area of nettles off site but within 100m buffer zone throughout summer 2012. No breeding habitat exists on site for this species. |
| Hooded crow | *Corvus corone cornix* | Green | C | Foraging on site. No breeding habitat on site or buffer zone. |
| Lesser Black Backed Gull | *Larus fuscus* | Amber | C | Flew over site. No breeding habitat on site. |
| Linnet | *Carduelis cannabina* | Amber | B | 2+ pairs breeding on site boundary in scattered gorse bushes. |
| Meadow pipit | *Anthus pratensis* | Green | B | Common breeding bird on the site. Small flocks of adults and juveniles (> 15) noted on site |
| Pied Wagtail | *Motacilla alba yarrellii* | Green | b | Noted off site. No breeding habitat on site. Potentially breeds in buffer zone. |
| Rock Dove | *Columba livia* | Green | C | 2 flew over site. Coastal species no breeding habitat on site. |
| Skylark | *Alauda arvensis* | Amber | B | 1 recorded on site. Probably breeding here as common in wider area and suitable breeding habitat exists. |
| Starling | *Sturnus vulgaris* | Amber | C | Small foraging flocks (>30 total) on site. No breeding habitat on site or buffer zone. |
| Swallow | *Hirundo rustica* | Amber | C | 2+ individuals noted foraging over the site. No breeding habitat on site or buffer zone. |
| Wren | *Troglodytes troglodytes* | Green | B | 5 plus territorial males noted around the site boundary only. Probable breeder on site |

A total of 10 different bird species were recorded during the survey. In addition another species was informed of by locals as being close to the site (within 100m buffer zone) throughout summer 2012 –

[2] Species of conservation concern in Ireland: Lynas P., Newton S.F. & Robinson J.A. 2007. The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds* 8 :149-166. Amber listed = Breeding species of moderate conservation concern in Ireland. Green listed = Breeding species not currently of conservation concern in Ireland. Annex 1 = Species listed on Annex 1 of Birds Directive and of high conservation concern.

[3] B = Probably breeding on site including within the 100m buffer zone, b = Unlikely to be breeding on site probably breeding in buffer zone or closeby, C = Not breeding on site or buffer zone.

total = 11. Most of these birds (7) were not breeding on the site but were recorded foraging, flying over the site or breeding in adjacent areas including the buffer zone.

No species of high conservation concern were recorded during the survey, including red listed (Lynas *et al.*, 2006)[4] and or species included on Annex 1 of the EU Birds Directive. No species of high conservation concern are likely to use the site.

A male Corncrake (*Crex Crex*) was noted calling throughout summer 2012 by a local person, in a field of nettles adjacent to the site. This species is globally threatened and listed on Annex 1 of the EU Birds Directive. It is also a red listed breeding species of high conservation concern. No suitable habitat for this species exists on the site and ongoing activities will have no impact to this species.

Five species of moderate conservation concern were recorded. Of these only Skylark and Linnet probably breed on the site.

All species recorded are typical common bird species of open moorland/ marginal farmland in North West Mayo.

[4] Species of conservation concern in Ireland: Lynas P., Newton S.F. & Robinson J.A. 2007. The status of birds in Ireland: an analysis of conservation concern 2008-2013. *Irish Birds* 8 :149-166.

# 5 CONCLUSION

The current operations are not significantly impacting breeding bird species including species of conservation concern detailed.

It is recommended that ongoing yearly bird monitoring continue. This is to inform if further mitigation is required based on species of conservation concern breeding status on the site, which could change.

# Appendix 4

# Letters Supporting Increase in Tonnage July – December 2012

Office of
Environmental
Enforcement

West/North West Region
Environmental Protection Agency
Regional Inspectorate, John Moore Road
Castlebar, County Mayo, Ireland

Cigireacht Réigiúnach, Bóthar Sheán de Móréha
Caisleán an Bharraigh, Contae Mhaigh Eo, Éire

T: +353 94 904 8440
F: +353 94 904 8499
E: info@epa.ie
W: www.epa.ie

LoCall: 1890 33 55 99

Mr Thomas Lennon
Lennon Quarries Limited
2 Glencastle
Bunnahowen
Ballina
Co. Mayo

10/07/12 Our Ref: W0256-01(12)GE02MH.docx

Dear Mr Lennon

I refer to the correspondence from Tobin Consulting Engineers which was received by the Agency on 06/07/12 in relation to the annual tonnage of waste which can be accepted at your facility.

The proposal submitted is to the satisfaction of the Agency contingent on the following:

- the total quantity of waste accepted at the facility from 01/07/2012 to 31/12/12 shall not exceed 10,335 tonnes
- the annual tonnage limit of 24,900 will apply from 01/01/13 and each calendar year thereafter
- compliance with the conditions of waste licence Reg. No. W0256-01.

Please quote the above reference in future correspondence in relation to this matter.

Yours sincerely

p.p. Helen Boyce

**Dr Michael Henry, Senior Inspector**
**Office of Environmental Enforcement**

TOBIN
Consulting Engineers

Consulting Engineers

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Tel: +44 1491 829327
Fax: +44 1491 833508

Dr. Michael Henry Esq

Office of Environmental Enforcement

John Moore Road

Castlebar

Co. Mayo

05th July 2012

**RE Licence WO256-01**

Dear Dr. Henry

I refer to recent discussions re the above between the Agency and our client, Lennons Quarries Ltd, and would like to confirm the current situation as pertains to annual tonnage allowance at the site.

It is the understanding of our client, following his most recent discussions with Yourself, that the Agency's position is that he may operate the site from time of writing to the end of this Calendar year on a pro rata basis of the annual tonnage allowance, on a six month basis from July to December 2012.

This equates to an allowance of 12,450 tonnes, being half the annual licence limit of 24,900. To be subtracted from this amount is an amount of 2,095 to cater for tonnage accepted for construction materials last year. Subtracting this amount would give rise to a tonnage allowance of 10,335 tonnes to end of the Calendar year.

It is on the basis of this remaining tonnage allowance of 10,335 to December 31st 2012 that our client intends to proceed. The licence annual tonnage amount of 24,900 will then be in place for the Calendar year beginning January 1st 2013.

I would greatly appreciate if you could confirm that this is indeed the position of the Agency and that our client can proceed for the remainder of the calendar year on the basis as outline above.

An early reply would be appreciated.

Yours sincerely

Sean Finlay

Director