

Dear Sir/Madam,

The Water Abstraction & Impoundment (Licensing) Regulations (Northern Ireland) 2006

The above Regulations came into operation on 1st February 2007 and give the Department the powers to authorise or licence all abstractions and impoundments of water within Northern Ireland. The key aim is to provide a single and consistent environmental risk based approach to help protect our water environment and to deliver efficient and sustainable water usage in Northern Ireland. The Environment and Heritage Service (EHS) is charged with ensuring that these regulations are properly administered and enforced.

On completion of your application form it was stated that at least one of the sources of abstracted water was from a quarry sump/lagoon. As part of the licensing process the volume abstracted from a quarry sump will be determined by EHS in cooperation and consultation with the applicant by applying the **Quarry Ready Reckoner** and **Hydrological Methodology**.

This will help ensure that the volume applied for reflects the best estimate of the **groundwater** component entering the quarry and will therefore prevent over and under estimates of water abstraction/usage.

Please note that the abstracted volume of **rainwater** and **runoff** that collects in a quarry sump is not a licensable activity. It is our intention to remove this volume from the total volume submitted to estimate (if any) the groundwater ingress into a quarry sump.

Once EHS Water Management Unit is in receipt of submitted volumes, the Hydrology Section, using a methodology endorsed by the QPANI for calculating rainfall figures, will remove the estimated volume of rainwater and runoff that collects in a quarry sump from the submitted volume. Any remaining volume, i.e. the groundwater component will be authorised or licensed dependent on the size of the abstraction activity.

I have enclosed a table to capture the abstracted volumes from a quarry sump, over a 30 day period. The **Quarry Ready Reckoner** should help with calculating these volumes and a **Glossary** has been provided to help explain each heading within the table.

PLEASE READ THE GLOSSARY BEFORE FILLING IN THE TABLE

I look forward to your co-operation but if you have any queries please do not hesitate to contact me.

Yours sincerely,

Dale Shirlow

Glossary:

Methodology used

This is how the volumes were calculated. Examples of methodology used are demonstrated in the Quarry Ready Reckoner sheet which has been supplied with this pack. An example of a methodology could be:

Pump rate x number of hours of use

Date

The date should be written in the format of day, month and year, i.e. 01/02/08

Volume

This is the total amount of water abstracted from the quarry sump for discharging off site and/or in production of materials.

The volume is in m³ per day; day being 24hours.

1m ³	=	220 gallons
10m ³	=	2200 gallons
100m ³	=	22000 gallons

If no volume is abstracted within a 24hour period then please write **N/A**

Weather

This is the average weather conditions for that day, this could be:

Cloudy	Light Rain
Sunny	Heavy Rain
Showers	Snow
Sleet	

Comments

Please fill this section in if you have any additional information to add, i.e.

*No pumping took place as quarry is shut over weekend
After heavy rain the pump needed to be on 24hours to prevent flooding of Quarry*

Please return all completed sheets to:

**Abstraction and Impoundment Licensing Team
Environment and Heritage Service
17 Antrim Road
Lisburn
BT28 3AL**

Water Usage Calculations

Water Ready Reckoner Table.

The following table can be used to calculate the average volume of water required to produce a known amount of product.

Type	Units	SWC (Specific Water Consumption)	Vol Water m ³ in Product
Concrete Products	m ³ /t product	1	0.1
Concrete Blocks	m ³ / 200 blocks	1	0.25
Reinforced Concrete	m ³ /m ³ dry concrete	0.4	0.135
Concrete slab production	m ³ /t	0.04 - 0.4	0.1
Industrial Sand	m ³ /t	0.61	0.08
Washed Sand and Gravel	m ³ /t	0.02	0.02

SWC- Volume of water (m3) brought onto site per unit of product despatched

*Table is based on figures from Environment Agency R&D Technical Report W6-056/TR2 and input from the Quarry Product Association Members.

I.e. a quarry produces 4000 blocks per day, it would therefore abstract:

$$4000/200 \times 1 = 20\text{m}^3 \text{ per day}$$

Other Methods for Determining Volume of Abstracted Water:

- 1. Pump rate x number of hours of use**
- 2. Machine specification x number of hours of use**
- 3. Number of secs/mins/hours a bucket/tank takes to fill**

Please note all of the above methods can be used individually or together to calculate the total volume of water abstracted in a quarry.

If you require any assistance with filling in an application form or have any further queries, then please contact the Abstraction and Impoundment Licensing Team on:

AIL.Team@doeni.gov.uk

OR

028 9263 3462