

ATTACHMENT E2 – EMISSIONS TO SURFACE WATER

Surface Water Drainage Network

The application site at Calary Quarry currently holds an effluent discharge licence from Wicklow County Council ((Ref. 27.WW.378, dated 7th October 2008) in respect of previous quarrying activity. The licence provides for the discharge of treated process water (trade effluent) from an on-site water management system to the Killough River. A number of conditions attaching to the discharge licence issued by the Council were appealed to An Bord Pleanála. The Board allowed the grounds for appeal and subsequently amended the conditions of the licence in December 2009. A copy of the discharge licence is provided as part of this Attachment.

Prior to the suspension of quarry operations in 2010, the water management system comprised a series of sumps on the quarry floor which pumped surface water run-off to a series of overground settlement tanks at the infrastructure area at the upper level. These tanks facilitated settlement of suspended solids and sediment prior to discharge off-site via a 0.38m (15") diameter concrete pipe.

At a point approximately 200m further north, the discharge pipe emerges into a drainage ditch running along the western boundary of the application site and the eastern verge of the R755 Regional Road. This ditch also collects surface water run-off from the western slopes of the Sugar Loaf. After a short distance, this drainage ditch enters a culvert which carries the flow beneath the R755 and discharges to another ditch or tributary which runs downslope to the Killough River.

The Killough River flows along the floor of a minor valley formed by the west-facing slope of the Great Sugar Loaf and the east-facing slope of Long Hill. It rises approximately 800m south-west of Calary Quarry, at an elevation of around 280mOD. It flows northwards and collects the flow from a tributary stream to the south of the application site as well as from the ditch running down the western slope of the Great Sugar Loaf which carries discharge waters from the quarry. The Killough River is a tributary of the Dargle River: the confluence between the two is located at Tinnehinch, to the south of Enniskerry Village and just over 3km north of the application site. The River Dargle enters the sea at Bray, Co. Wicklow and has been designated a "salmonid" river in accordance with national and EU legislation.

Drainage Infrastructure

There is currently no existing surface water drainage infrastructure across the application site at Calary Quarry. Surface water run-off over any existing paved or hardstand surfaces at the infrastructure area currently falls eastward and either

- percolates through unsealed ground into the underlying bedrock to intercept groundwater or
- flows into the pond in the quarry void.

The upper groundwater surface is likely to lie at the same level as water in the flooded quarry void (approximately 245mOD). Once it hits the groundwater body, any recharge is likely to follow regional groundwater flow westwards, down to the Killough River flowing along the valley floor.

It is envisaged that in future any surface water run-off over sealed ground and hardstanding areas around the proposed infrastructure area will be captured by gullies and buried drains and passed through a hydrocarbon interceptor (fitted with a silt trap) prior to discharge off-site (via the existing concrete outfall pipe) to the drainage ditch along the western site boundary which ultimately flows to the Killough River.

Details of proposed surface water management at the waste recycling facility are provided in Attachment D1 and Chapter 2 of the Environmental Impact Statement which accompanies this waste licence application.

Lowering of Water Level in Quarry

Since quarrying activities were suspended in 2010, dewatering has been discontinued at the quarry. Natural drainage (principally surface run-off from surrounding sloping ground and rainfall), together with minor groundwater inflows, has caused water levels in the quarry void to gradually rise from a former floor level of approximately 220mOD to approximately 245mOD, forming a large pond within the existing quarry void which is up to 25m deep at its deepest point.

Prior to commencement of backfilling, it will be necessary to dewater the quarry void by pumping. It is envisaged that the lowering of the existing pond will be undertaken over an extended period of time, most likely in the time following grant of planning permission and/or waste licence and commencement of quarry backfilling and restoration activities.

Ponded water in the quarry will be pumped up to the proposed infrastructure area at the top of the quarry via flexible piping. Should it be necessary to achieve discharge quality standards set by the existing discharge licence (or any EPA waste licence which supersedes it), the ponded water will be routed through proposed new settlement ponds and a hydrocarbon interceptor (fitted with a silt trap), both of which have yet to be installed. Thereafter, it will flow under gravity to the existing concrete pipe which discharges off-site to the existing drainage network leading to the Killough River.

Surface Water Management during Quarry Backfilling

As backfilling of the quarry proceeds over the short-to-medium term, the flow of surface water run-off into the quarry will be minimised wherever possible by the construction of drainage channels around the edge of the quarry. These channels will collect some over ground surface water flows from higher ground and divert them directly (without further treatment) to the existing natural drainage network surrounding the quarry.

During the backfilling operations, the upper surface of the backfilled soil will be graded so as to ensure that surface water run-off falling over the quarry footprint falls to sumps at temporary low points. Any groundwater daylighting in the quarry faces during the backfilling phase will also be permitted to flow into the quarry and to run over filled ground to these sumps.

The temporary sumps will effectively function as primary settlement ponds and water collecting in them will be pumped (causing minimum agitation to ponded water) to the proposed new settlement ponds to be constructed on the northern side of the infrastructure area at the upper level and will be retained there for sufficient time to allow sediments / suspended solids to fall out of solution. Thereafter run-off will be passed through a proposed new silt trap / hydrocarbon interceptor before being discharged off-site to the existing drainage network leading to the Killough River.

In order to minimise the risk of pollution to surface waters arising as a result of waste recovery and backfilling activities at Calary Quarry, a number of additional mitigation measures will be implemented to protect surface water, prevent possible accidental discharge of fuel or chemicals and detect / monitor potential adverse impacts. These measures, which will give effect to the requirements of the European Communities Environmental Objectives (Surface Water) Regulations 2009 (S.I. No. 272 of 2009), are identified under a range of headings below:

Minimising Soil Erosion

- Imported material will be placed and compacted as soon as possible after importation in order to minimise erosion and inclusion of particulates (silt and clay) and suspended solids in surface water run-off.
- Final restoration and seeding will take place at the earliest opportunity. If stockpiles (eg. topsoil) are left in place over extended time periods, they will be seeded with grass to minimise soil erosion.
- The slope of the topsoil and overburden storage areas will be designed to ensure short-term stability and to minimise surface erosion.

Collection and Diversion of Run-off

- All surface water run-off arising within the facility will be passed through the settlement ponds and silt trap / hydrocarbon interceptor prior to its discharge off-site :
 - Surface water drainage will be installed around the upper infrastructure area to collect surface water run-off and direct it to the settlement ponds / water treatment infrastructure;
 - Any ponded water over the quarry floor / backfilling area will be drained prior to any waste being deposited in order to minimise the potential mobilisation of fines and suspended solids in water pumped to the settlement ponds at the upper level;
 - All surface water ponding on the quarry floor / top of backfill areas will be pumped to the settlement ponds / water treatment infrastructure.
- Existing perimeter drains / ditches shall be maintained and cleaned out regularly. In addition the integrity of the existing off-site discharge pipe is to be checked at regular intervals to ensure there are no blockages along the pipe that may impede or prevent flow through it.

Inspection of Imported Material

- Loads of imported material will be screened and inspected in line with an approved waste acceptance plan to confirm they are inert prior to deposition at the application site.

Handling of Fuels and Chemicals

- All petroleum based products and chemicals shall be stored in containers and drums stored over bunded pallets in a storage container which is itself placed over a drained concrete slab;
- Refuelling of vehicles to be either be undertaken at over the proposed concrete slab adjacent to the bunded fuel tank(s) or from a mobile double skinned fuel bowser in order to minimise the risk of uncontrolled release of polluting liquids / liquors;
- An emergency response kit will be kept at the application site to minimise the potential migration of any spillages / leaks of petroleum based products;
- All plant to be regularly maintained and inspected daily for leaks of fuels, lubricating oil or other contaminating liquids/liquors;
- Routine maintenance of plant and machinery would be undertaken over the concrete slab adjacent to the bunded fuel tanks to minimise the risk of uncontrolled release of polluting liquids. Any non-routine servicing or maintenance would be undertaken at off-site facilities;
- All fuel, chemicals, petroleum based products, mechanical and electrical equipment shall be removed prior to closure of the site.

Minimisation of Traffic Collisions

- A traffic management system will be put in place to reduce the potential conflicts between vehicles, thereby reducing the risk of a collision and resulting fuel spills;
- A site speed limit would be enforced to further reduce the likelihood and significance of collisions;

Monitoring

- The quality of the any off-site discharge will be monitored at the application site and upstream and downstream of the confluence between the Killough River and the tributary stream leading from Calary Quarry. Water quality monitoring will be undertaken on at least a six monthly basis. Surface water samples will be analysed for pH, temperature, BOD, COD, suspended solids, ammonium, chloride, nitrate, phosphate as P, diesel range organics and mineral oil.
- The results of all monitoring undertaken will be recorded and submitted for its records and review to the EPA in an Annual Environmental Report;
- It is currently envisaged that the surface water monitoring regime will remain in place for the duration of the quarry backfilling and restoration works. Sampling and monitoring will continue as long as backfilling activities continue and for a short period thereafter.

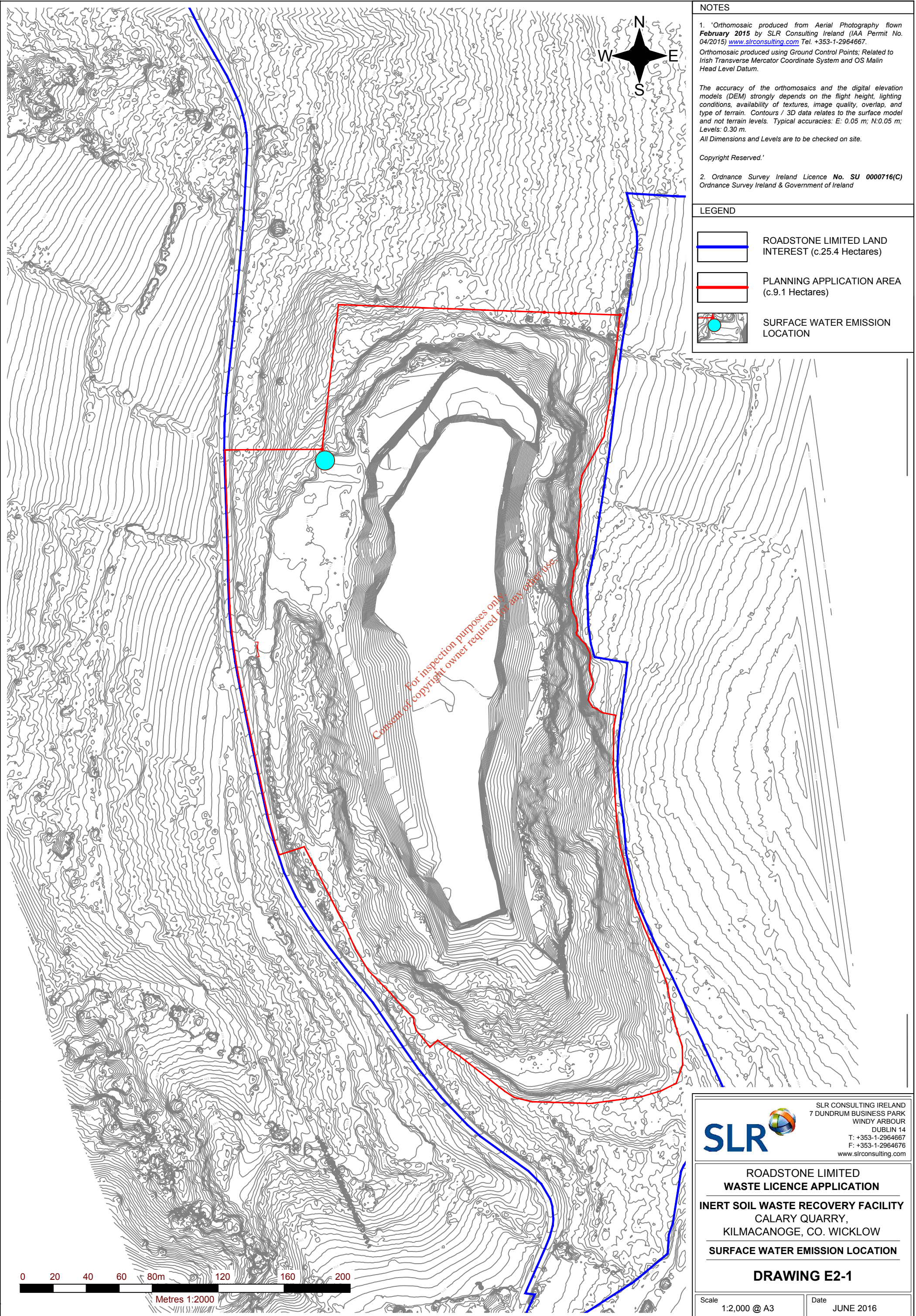
The establishment and operation of settlement ponds (as proposed) will reduce the suspended solids content of surface water run-off (prior to discharge) and will ensure that discharged waters are of the appropriate water quality standard. All surface water discharges from the proposed recovery facility to the Killough River will comply with the emission limits set by the existing discharge licence (or any EPA waste licence which supersedes it).

In the longer term, toward the end of the quarry backfilling works, ground contours within and around the backfilled quarry void will be modified to ensure that surface water run-off across the area is directed to a drainage ditch / channel to be developed along the western site boundary, as indicated in the proposed final quarry restoration plan provided in Drawing D2.1 in Attachment D2.

Surface Water Management at Waste Inspection / Quarantine Area

Any suspect non-inert soil / C&D waste imported to the proposed waste recovery facility will be transferred to a covered shed to be located in the north-western corner of the infrastructure area on the western side of the former quarry.

As the floor of the shed is sealed by a concrete slab and as no rainfall will come into contact with consignments of suspected contaminated waste, there is no requirement to install drainage infrastructure to provide for the separate collection and storage of potentially contaminated surface water run-off at the waste inspection and quarantine facility.



NOTES

1. 'Orthomosaic produced from Aerial Photography flown February 2015 by SLR Consulting Ireland (IAA Permit No. 04/2015) www.slrconsulting.com Tel. +353-1-2964667. Orthomosaic produced using Ground Control Points; Related to Irish Transverse Mercator Coordinate System and OS Malin Head Level Datum.

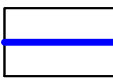
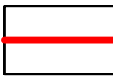
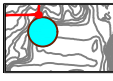
The accuracy of the orthomosaics and the digital elevation models (DEM) strongly depends on the flight height, lighting conditions, availability of textures, image quality, overlap, and type of terrain. Contours / 3D data relates to the surface model and not terrain levels. Typical accuracies: E: 0.05 m; N:0.05 m; Levels: 0.30 m.

All Dimensions and Levels are to be checked on site.

Copyright Reserved.'

2. Ordnance Survey Ireland Licence No. SU 0000716(C)
Ordnance Survey Ireland & Government of Ireland

LEGEND

-  ROADSTONE LIMITED LAND INTEREST (c.25.4 Hectares)
-  PLANNING APPLICATION AREA (c.9.1 Hectares)
-  SURFACE WATER EMISSION LOCATION

For inspection purposes only
Consent of copyright owner required for any other use

00180.00109.0.E2-1.SW Emissions Location.dwg

0 20 40 60 80m 120 160 200
Metres 1:2000

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SLR

**ROADSTONE LIMITED
WASTE LICENCE APPLICATION**

**INERT SOIL WASTE RECOVERY FACILITY
CALARY QUARRY,
KILMACANOGE, CO. WICKLOW**

SURFACE WATER EMISSION LOCATION

DRAWING E2-1

Scale 1:2,000 @ A3	Date JUNE 2016
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TABLE E.1(i): EMISSIONS TO SURFACE WATERS
(One page for each emission)

Emission Point:

Emission Point Ref. N ^o :	SW1
Source of Emission:	Ponded water and collected surface water run-off (rainfall) arising within the footprint of the existing quarry void (proposed waste recovery facility)
Location :	At existing off-site discharge pipe in the north-western corner of the former quarry; at the northern end of existing infrastructure area at upper bench level
Grid Ref. (10 digit, 5E,5N):	72273E 71310N (ITM Co-ordinates)
Name of receiving waters:	Existing unnamed ditch along the western property boundary at Calary Quarry and along the eastern verge of the R755 Regional Road Identified as a tributary to Killough River
Flow rate in receiving waters:	Discharge to Killough River Unknown Dry Weather Flow 0.032m ³ .sec ⁻¹ 95%ile flow
Available waste assimilative capacity:	Refer to Table E.1 (ii)

Emission Details:

(i) Estimated volume to be emitted			
Normal / day	805 m ³ /day	Maximum/day	2,000 m ³ /day (Existing Discharge Licence)
Maximum rate/hour	83.3m ³ /hr (Existing Discharge Licence)		

TABLE E.1(ii): EMISSIONS TO SURFACE WATERS - Characteristics of the emission (1 table per emission point)

Emission point reference number : SW1

Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	Max. ¹ (kg/day)	Max. ¹ (kg/year)	
Total Suspended Solids	<u>Not Monitored</u>	<u>Not Monitored</u>			30mg/l	30mg/l	24.15kg/day	8815kg/yr	N/A
pH	<u>Not Monitored</u>	<u>Not Monitored</u>			9	9			
Biochemical Oxygen Demand	<u>Not Monitored</u>	<u>Not Monitored</u>			5mg/l	5mg/l	4.03kg/day	1470kg/yr	N/A
Chemical Oxygen Demand	<u>Not Monitored</u>	<u>Not Monitored</u>			100mg/l O ₂	100mg/l O ₂	80.5kg/day O ₂	29383kg/yr O ₂	N/A
Nitrate	<u>Not Monitored</u>	<u>Not Monitored</u>			30mg/l NO ₃	30mg/l NO ₃	24.15kg/day	4490kg/yr	N/A
Phosphate as P	<u>Not Monitored</u>	<u>Not Monitored</u>			0.03 mg/l MRP	0.03 mg/l MRP	0.02kg/day	8.8kg/yr	N/A
Mineral Oil	<u>Not Monitored</u>	<u>Not Monitored</u>			5mg/l	5mg/l	4.03kg/day	1470kg/yr	N/A
Diesel Range Organics	<u>Not Monitored</u>	<u>Not Monitored</u>			5mg/l	5mg/l	4.03kg/day	1470kg/yr	N/A
Chloride	<u>Not Monitored</u>	<u>Not Monitored</u>			50mg/l Cl	50mg/l Cl	40.25kg/day	14691kg/yr	N/A
Ammonium	<u>Not Monitored</u>	<u>Not Monitored</u>			0.2mg/l N	0.2mg/l N	0.16kg/day	58.4kg/yr	N/A

¹ Based on daily flow rate of 805m³/day



Comhairle Chontae Chill Mhantáin

WICKLOW COUNTY COUNCIL

Your Ref:

Our Ref:

TG/MD/WPL 87

Roadstone Dublin Ltd.,
C/o Mr. Tim Paul,
John Barnett & Associates Ltd.,
CSA House,
Dundrum Business Park,
Windy Harbour,
Dublin 14.

0002 130 8 0
8 OCT 2008

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Web: www.wicklow.ie

J. S. D. J. W.

COPIES TO: S. GERRARDY
R. GRIFFIN
C. FENNELLY

7th October, 2008.

**Re: Local Government (Water Pollution) Acts, 1977 – 1990
Section 4 Discharge Licence –
Applicant: Roadstone Dublin Ltd.
Premises: Calary Quarry, Kilmacanogue, Co. Wicklow.**

A Chara,

I enclose, herewith, Licence which issued under Section 4 of the Local Government (Water Pollution) Acts, 1977 –1990 to discharge treated trade effluent from the Roadstone Dublin Limited located at Calary Quarry, Kilmacanogue, Co. Wicklow.

Appeal against the above decision may be made before the expiration of one month from the date of the above decision. Such appeal shall (a) be made in writing, (b) state the subject matter of the appeal, (c) state the grounds of appeal, (d) state the reference number of the Licence and (e) state in full the grounds on which they are based, (f) be accompanied by a fee of €126.00. An appeal which does not comply with these requirements shall be invalid. A request from an Oral Hearing of the appeal shall be made in writing and be accompanied by a fee of €126. An appeal which does not comply with these requirements shall be invalid. A request for an Oral Hearing of the appeal shall be made in writing and be accompanied by a fee of €63. The appeal (if any) against the above decision should be addressed to The Secretary, An Bord Pleanála, 64 Marlborough Street, Dublin 1.

Mise le meas,

PHILIP DUFFY
SENIOR EXECUTIVE OFFICER
WATER & ENVIRONMENTAL SERVICES SECTION

Encl.

LOCAL GOVERNMENT (WATER POLLUTION) ACTS, 1977.- 1990

LICENCE TO DISCHARGE TRADE OR SEWAGE EFFLUENT TO WATERS

Reference number in Register: - WPL 87
Local Authority: - Wicklow County Council

To: Roadstone Dublin Limited,
Fortunestown,
Tallaght,
Dublin 24.

c/o Mr. Tim Paul,
John Barnett & Associates Limited,
CSA House,
Dundrum Business Park,
Windy Arbour,
Dublin 14.

Premises: Calary Quarry,
Kilmacanogue,
Co. Wicklow.

Wicklow County Council, in exercise of the powers conferred by the Local Government (Water Pollution) Acts, 1977-1990 hereby grants a licence to discharge trade effluent from Roadstone Dublin Limited located at Calary Quarry, Kilmacanogue, Co. Wicklow to the nearby tributary of the Killough River via a single authorised outfall pipe after appropriate treatment in quarry floor sumps, settlement tanks and an oil interceptor subject to the following conditions: -

LICENCE CONDITIONS

1. General Layout and Operation

- 1.1 This Licence shall be in respect of the discharge of trade effluent from the premises of Roadstone Dublin Limited, located at Calary Quarry, Kilmacanogue, Co. Wicklow via a single authorised outfall pipe after appropriate treatment in quarry floor sumps, settlement tanks and an oil interceptor.

- 1.2. The premises of the Roadstone Dublin Limited at Calary Quarry shall be laid out, operated and maintained in such a manner as to prevent the discharge of any polluting matter either to groundwater or surface water, other than treated effluent to the tributary of the Killough River in accordance with this licence.
- 1.3 Rainwater run-off from the roofs of buildings and clean ground-surfaces shall be collected separately from the trade effluent and directed to surface water drains or soak-aways on the premises.
- 1.4 The Licensee's, quarry floor sumps, pumps, settlement tanks and oil interceptor shall be operated and maintained in such manner as to ensure that the discharge of treated effluent is in accordance with the volume and parametric limits set out in Conditions 2.1 and 2.2.
- 1.5 All oil storage tanks located above ground shall be provided with an adequately designed bund system complete with impervious base. Filling and off-take points shall be located within the bund system.
- 1.6 The oil interceptor, quarry floor sumps, pumps, settlement tanks and sumps shall be maintained in a good and safe condition. No nuisances shall be allowed to persist in the vicinity of them. Adequate precautions shall be made to prevent unauthorised access or to prevent any damage to the oil interceptor, quarry floor sumps, pumps, settlement tanks and sumps.
- 1.7 Where there is a complete/partial change in the ownership of the premises to which this licence relates, the responsibility to comply with the conditions attached to the licence shall transfer pro-rata to the new owner(s).

2. Effluent Volume and Characteristics

- 2.1 The treated effluent from the settlement tanks shall be discharged uniformly over a 24-hour period, 7 days a week. The total volume of the treated effluent discharged from settlement tanks shall normally not exceed 805m³/day subject to a maximum volume of 1600m³/day during summertime (April to September) 2000m³/day during wintertime (October to March).
- 2.2 The treated effluent discharged from the settlement tanks and oil interceptor via the single authorised outfall pipe to the tributary of the Killough River shall comply with the quality standards set out in respect of the parameters in table 1 overleaf.

Table 1

PARAMETER	PARAMETRIC LIMIT VALUE
pH	6 to 9
Temperature	</= 25 °C or ambient
BOD ₅	</= 5 mg/l O ₂
COD	</= 50 mg/l O ₂
Suspended Solids	</= 30 mg/l
Ammonium	</= 0.05 mg/l N
Chloride	</= 15 mg/l Cl
Nitrate	</= 5.7 mg/l N
Phosphate	</= 0.03mg/l P
Diesel Range Organics	</= 5 mg/l
Mineral Oil	</= 5 mg/l

3. Trade Treatment

3.1 The site drainage, quarry floor sump, pumps, settlement tanks and oil interceptor shall be laid out in accordance with drawings and design submitted as part of the application for this licence. The sewage treatment system shall be designed, laid out and maintained in accordance with the EPA Wastewater Treatment Manuals.

4. Treatment Plant Maintenance

4.1 The Licensee shall inform the Licensing Authority of the name, address, email and telephone number of the nominated person(s), who shall be trained and have responsibility, for the routine inspection, operation and general maintenance of the quarry floor sump, pumps, settlement tanks and oil interceptor within two months of the date of issue of the Licence. The Licensee shall make provision for substitute trained persons as may be necessary during the absence of the nominated person. A log of the inspection, operation and general maintenance of the quarry floor sump, pumps, settlement tanks and oil interceptor shall be kept on file for inspection.

4.2 The Licensee shall employ the services of a competent specialist firm(s) to carry out the non-routine maintenance of the pumps, settlement tanks and the oil interceptor, on a contractual basis. The contract shall provide for an emergency call-out service in the event of malfunction/breakdown. The contract shall be annually renewed and submitted for approval within two months of the date of issue of this Licence and on each anniversary date thereafter.

4.3 The aforementioned contract shall include at least two visits by the competent specialist firm each year. A copy of each maintenance report shall be submitted to the Licensing Authority within one month of the date of the report becoming available.

- 4.4 The Licensee shall ensure that the nominated and trained persons receive a detailed instruction and training about the routine inspection, operation and general maintenance of the quarry floor sump, pumps, settlement tanks and oil interceptor from a competent engineering or environmental consultant. The Licensee shall also ensure that the nominated and substitute trained persons are issued with instruction manuals detailing the required inspection, operation and general maintenance of the quarry floor sump, pumps, settlement tanks and oil interceptor.

5. Provision of Monitoring Stations

- 5.1 The Licensee shall provide safe, permanent, unhindered and immediate access to the sampling point location.

Effluent: A suitable chamber shall be provided for sampling the treated effluent before entry to the single authorised outfall pipe. The sampling chamber shall facilitate flow measurement, and grab and composite sampling of the effluent.

Free access by Authorised Officers of the Licensing Authority and any other person authorised under Section 28 of the Local Government (Water Pollution) Act, 1977 shall be provided at any time on request.

6. Monitoring Regime

- 6.1 The Licensee shall: -

- (a) Install, calibrate and maintain a suitable flow-measuring flume, flow monitor, recorder and alarm on the effluent pipe before discharge to the tributary of the Killough River, and record the hourly flow rate and total volume discharged on a daily basis.
- (b) Install, calibrate and maintain a rain gauge and recorder at suitable location on the premises, record the rainfall on a daily basis.
- (c) Install, calibrate and maintain a pH meter, total suspended solids meter, recorder and alarm on the effluent pipe before discharge to the tributary of the Killough River, and continuously record the pH and concentrations of suspended solids in the effluent.

Certificates of calibration for the flow-measuring flume, rainfall gauge, pH meter and total suspended solids meter shall be forwarded to the Licensing Authority within six months of the date of issue of this Licence. Further such certificates shall be submitted on request.

- 6.2 The Licensee shall arrange to have representative samples of the treated effluent taken from the sampling chamber and tested at least once every two months in respect of the parameters listed in table 2 below: -

Table 2

PARAMETER	Unit of Expression
pH	pH Unit
Temperature	⁰ C
BOD ₅	mg/l O ₂
Suspended Solids	mg/l
Orthophosphate	mg/l P
Nitrate	mg/l N
Chloride	mg/l Cl
Diesel Range Organics	ug/l
Mineral Oil	ug/l

- 6.3 The Licensee shall arrange to have samples taken from the tributary of the Killough River upstream and downstream of the confluence with the stream carrying the quarry discharge and also from the stream carrying the quarry discharge once every four months in respect of the parameters listed in table 3 below: -

Table 3

PARAMETER	Unit of Expression
pH	pH Unit
Temperature	⁰ C
BOD ₅	mg/l O ₂
Suspended Solids	mg/l
Orthophosphate	mg/l P
Nitrate	mg/l N
Chloride	mg/l Cl
Dissolved Oxygen	mg/l O ₂
Turbidity	NTU

- 6.4 In the event of a result of a test on an effluent sample exceeding a parametric limit value, additional samples of the effluent and Killough River upstream and downstream of the discharge point shall be taken and tested on a daily basis until such time the results of the additional samples show that the non-compliance has been brought under control.

- 6.5 The Licensing Authority may give its written consent to a reduced frequency of monitoring of the effluent where a pattern of full compliance with the licence conditions has become established. In the event of a non-compliant effluent sample, the sampling frequency shall revert to sampling every two months until such time a pattern of full compliance has been re-established.

- 6.6 The Licensee shall enter into a service contract with an accredited laboratory to ensure that samples are tested in accordance with conditions 6.2 and 6.3. The contract shall be annually renewed and submitted for approval within two months of the date of issue of this Licence and on each anniversary date thereafter. A copy of the contract document, signed by both parties, shall be submitted and agreed with the Licensing Authority within two months of the date of issue of this Licence. Copies of the contract documents, for each subsequent period, shall be submitted and agreed with the Licensing Authority, within two months of the expiry date for the preceding contract period.
- 6.7 The Licensee shall arrange to have a biological survey of the macro-invertebrate population in the Killough River and its tributary carried out at the appropriate seasons and at suitable locations upstream and downstream of the quarry discharge by a competent biologist or ecologist to determine the biological rating for the river and tributary once every two years. A report on the findings of the surveys shall be submitted within one month of the survey date.

7. Sludge and Other Waste Disposal

- 7.1 The sludge arising from floor sump and settlement tanks and other waste material arising from the quarry operations shall be disposed of in accordance with the Waste Management (Permit) Regulations, 1998 (SI No. 165 of 1998) and any other relevant regulation as specified under the Waste Management Act, 1996. The Licensee shall inform and agree with the Licensing Authority the manner in which it is proposed to dispose of sludge within two months of the date of issue of this Licence.
- 7.2 The Licensee shall maintain legible traceable records of the removal and disposal of oils from the oil interceptor, sludges from quarry floor sump and settlement tanks.

8. Monitoring Records

- 8.1 Legible traceable records of all flow, rainfall and analytical data (with appropriate units shown) referred to in condition 6 (the monitoring regime) shall be kept on file at the premises. The Licensee shall arrange with their contract laboratory to send electronic copies of the analytical records to the Licensing Authority within two weeks of the period to which they relate. The Licensee shall send electronic copies of continuous monitoring of flow, pH and suspended solid records to the Licensing Authority within two weeks of the period to which they relate. A template for the purpose of the electronic submission will be available from the Licensing Authority. Paper copies of these records shall also be submitted to the Licensing Authority upon two weeks of a request.

8.2 The records referred to in conditions 7.2, 8.1 and 8.2, shall also be made available by the Licensee for inspection by Authorised Officers of the Licensing Authority, and any other person authorised under Section 28 of the Local Government (Water Pollution) Act, 1977, or under Section 14 of the Waste Management Act, 1996 at any time on request.

9. Access by Authorised Personnel

9.1 Authorised officers of the Licensing Authority or its agents and any other person authorised under Section 28 of the Local Government (Water Pollution) Act, 1977 shall have access to the Licensee's oil interceptor, quarry floor sump and settlement tanks, drainage systems at all reasonable times including if necessary, times other than normal working hours, and at all times in the event of an emergency.

9.2 Details of contact personnel including names, posts, addresses, email and telephone numbers shall be made available to the Licensing Authority, for contact in the event of an emergency, within one month of the date of issue of the Licence. At least one such person in authority to take corrective action shall be available for contact at all times.

10. Monitoring Contribution to the Licensing Authority

10.1 The Licensee shall pay on demand an annual contribution fee of € 898 towards the Licensing Authority's (Wicklow County Council) monitoring costs. The first such payment shall be calculated pro-rata from the date of issue of the Licence to the end of the calendar year ie. €211.58. The subsequent annual contribution fees shall be reckoned on the initial sum of € 898 when adjusted in accordance with the consumer price index for the intervening period since the date of issue of the Licence.

11. Notification to the Licensing Authority

11.1 The Licensee shall notify the Licensing Authority in writing of any changes in ownership of the premises or company name or personnel referred to in conditions 4.1 and 9.2 of this Licence.

11.2 The Licensee shall notify the Licensing Authority in advance of any proposed change in the operation of the premises, which could cause a material alteration in the nature, or an increase in the volume or concentration of the treated effluent discharged.

11.3 The Licensee shall notify the Licensing Authority of any accidental discharge, spillage or deposit of polluting matter, which enters or is likely to enter the surface water drains, or the groundwater or watercourses, as soon as practicably possible, in accordance with Section 14 of the Local Government (Water Pollution) Act.

SIGNED: _____

Boyle

**DIRECTOR OF SERVICES
WATER & ENVIRONMENTAL SERVICES SECTION**

DATED: _____

7/10/2008

NOTE:

An Appeal against the above decision may be made before the expiration of one month from the date of the above decision. Such appeal shall:

- (a) be made in writing,
- (b) state the subject matter of the appeal
- (c) state the grounds of appeal
- (d) state the reference number of the Licence
- (e) state in full the grounds on which they are based.

An appeal which does not comply with these requirements shall be invalid.

Appeals should be addressed to The Secretary, An Bord Pleanála, 64 Marlborough Street, Dublin 1 and should be accompanied with a fee of

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Our Ref: WW 27.WW0378
P.A.Reg.Ref: WPL87
Your Ref: Roadstone Dublin Limited

SLR Consulting,
7 Dundrum Business Park,
Windy Arbour,
Dublin 14.

03 DEC 2009

02 DEC 2009

Appeal Re: Discharge treated effluent to tributary of Killough River via a
single authorised outfall pipe.
Calary Quarry, Kilmacanoge, Co. Wicklow.

Dear Sir/Madam,

An order has been made by An Bord Pleanála determining the above-mentioned appeal under
the Local Government (Water Pollution) Acts 1977 and 1990. A copy of the order is enclosed.

Yours faithfully,

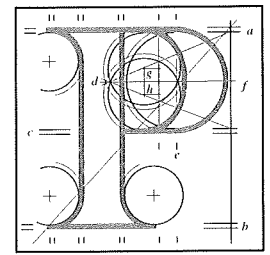


Michael Donlan
Senior Executive Officer

Encl:

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An Bord Pleanála

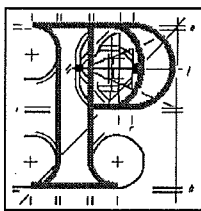


64 Sráid Maoilbhríde,
Baile Átha Cliath 1.

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64 Marlborough Street,
Dublin 1.

An Bord Pleanála



LOCAL GOVERNMENT (WATER POLLUTION) ACTS 1977 TO 2007

Wicklow County

Register Reference Number WPL 87

An Bord Pleanála Reference Number 27.WW.378

APPEAL by Roadstone Dublin Limited care of SLR Consulting Ireland, 7 Dundrum Business Park, Windy Harbour, Dublin in relation to the granting on the 7th day of October, 2008 by Wicklow County Council, of a licence under section 4 of the Local Government (Water Pollution) Acts 1977 to 2007 to the said Roadstone Dublin Limited for the discharge of treated effluent from a quarry located at Calary, Kilmacanogue, County Wicklow to a tributary of the Killough River.

DECISION: In exercise of the powers conferred on it by section 8 of the Local Government (Water Pollution) Act, 1977, as substituted by section 6 of the Local Government (Water Pollution) (Amendment) Act, 1990, An Bord Pleanála hereby allows the said appeal and directs the licensing authority to attach condition number 6.3 and 10.1 and to remove condition numbers 4.2 and 4.3 and to amend the following condition numbers 2.1, 2.2, 6.1, 6.2, 6.4, 6.7, 8.1 and 8.2 so that they shall be as follows: -

2. Effluent Volume and Characteristics

2.1 The total volume of treated effluent discharged from the settlement tanks shall not normally exceed 805 m³/d subject to a maximum volume of 1600 m³/d during summertime (April to September) or 2000 m³/d during wintertime (October to March). The Licensing Authority reserves the right to modify this condition under licence review, in the interest of environmental protection, in the event that flow monitoring data supplied under Conditions 6.1(a) and 6.1(c) demonstrate that loadings are being discharged from the settlement systems that may adversely affect the receiving environment.

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2.2 The treated effluent discharged from the settlement tanks and oil interceptor via the single authorised outfall pipe to the tributary of the Killough River shall comply with the quality standards set out in respect of the parameters in Table 1.

Table 1 Emission Limit Values Discharge Licence WPL87

Parameter	Parametric Limit Value	Units
pH	6 to 9	pH units
Temperature	</= 25	°C
BOD	</= 5	mg/l O ₂
COD	</= 50	mg/l
Suspended Solids	</= 30	mg/l
Ammonium	</= 0.2	mg/l N
Chloride	</= 50	mg/l Cl
Nitrate	</= 30	mg/l NO ₃
Phosphate as P	</= 0.03	mg/l MRP
Diesel Range Organics	</= 5	mg/l
Mineral Oil	</= 5	mg/l

6. Monitoring Regime

6.1 The Licensee shall

- (a) Install, calibrate and maintain a suitable flow measurement system, recorder and alarm on the effluent flow before discharge to the tributary of the Killough River, and record hourly flow rate and volume discharged on a daily basis. The flow measurement device shall facilitate continuous measurement and the system shall be approved by the licensing authority prior to its adoption as the system to serve the site.
- (b) Install, calibrate and maintain a rain gauge and recorder at suitable location on the premises, record the rainfall on a daily basis.
- (c) Install, calibrate and maintain a pH meter, total suspended solids meter, recorder and alarm on the effluent pipe before discharge to the tributary of the Killough River, and continuously record the pH and concentrations of suspended solids in the effluent.

Certificates of calibration for the flow measurement device, pH meter, total suspended solids meter and rain gauge meter on site, shall be forward to the licensing authority within six months of the date of issue of this licence. Further such certificates shall be submitted on request.

6.2 The units for Diesel Range Organics and Mineral Oil shall be expressed as mg/l to ensure consistency of expression between units in Tables 1 and 2 of the issued discharge licence.

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- 6.4 In the event of a result of a test on an effluent sample exceeding a parametric limit value by >20%, additional samples of the effluent and Killough River upstream and downstream of the discharge point shall be taken and tested on a daily basis until such time as the results of the additional samples show that the non-compliance has been brought under control. This additional monitoring of the effluent and Killough River upstream and downstream shall be carried out for the parameter(s) that are determined to exceed, by >20%, parametric limit values specified in Table 1 of this licence.
- 6.7 The licensee shall arrange to have the existing biological survey of the macro-invertebrate population in the Killough River updated at suitable locations upstream and downstream of the quarry discharge once every three years. This survey shall be completed by a competent biologist or ecologist and his/her report on such findings shall be submitted within one month of the survey date.
- 8.1 Legible traceable records of all flow, rainfall and analytical data (with appropriate units shown) referred to in condition number 6 (the monitoring regime) shall be kept on file at the licensee's premises. In addition, a template for the purpose of data recording and evaluation shall be supplied to the licensee by the licensing authority. The licensee shall submit this completed template, in electronic format, with the original electronic copies of the laboratory analytical records for the effluent and receiving environment monitoring and the date for continuous flow, pH and suspended solids measurements, in addition to the rainfall record for the appropriate period. All data shall be submitted within one month of the monitoring period to which it relates. Paper copies of data shall be submitted to the licensing authority within two weeks of a request.
- 8.2 The records referred to in condition numbers 7.2 and 8.1 shall also be made available by the licensee for inspection by authorised persons of the licensing authority, and any other person authorised under section 28 of the Local Government (Water Pollution) Act, 1977.

REASONS AND CONSIDERATIONS

Having regard to the nature and scale of activities on site, the nature of the discharge including its composition presented in baseline sampling, and the characteristics of the receiving waters (which is a tributary of the Killough River which feeds the salmonid River Dargle a short distance downstream) it is considered that the conditions amended and attached are necessary in order to prevent environmental pollution and safeguard the water quality and ecology of the receiving waters.



**Member of An Bord Pleanála
duly authorised to authenticate
the seal of the Board.**

Dated this 1st day of December 2009.