Unit 15
Melbourne Business Park
Model Farm Road
Cork

T: 021 434 5366
E: info@ocallaghanmoran.com
www.ocallaghanmoran.com

O'Callaghan Moran & Associates
ENVIRONMENTAL MANAGEMENT FOR BUSINESS

BASELINE ASSESSMENT REPORT

STARRUS ECO HOLDINGS LIMITED

BALLYBEG

LITTLETON

COUNTY TIPPERARY

Prepared For: -

Starrus Eco Holdings Ltd.,
Panda Waste Management Solutions,
Ballymount Road Upper,
Dublin 23.

Prepared By: -

O' Callaghan Moran & Associates,
Unit 15, Melbourne Business Park,
Model Farm Road,
Cork

June 2021

Project	Baseline Assessment Report Ballybeg, Littleton			
Client	Starrus Eco Holdings Ltd			
Report No	Date	Status	Prepared By	Reviewed By
	13/01/2021	Draft	Billy Hamilton MSc	Jim O'Callaghan MSc
	22/06/2021	Final	Billy Hamilton MSc	Jim O'Callaghan MSc

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1. INTRODUCTION

Starrus Eco Holdings Ltd (SEHL) operates a composting facility in Ballybeg, County Tipperary under an Industrial Emissions Licence (Licence No: W0249-01) issued by the Environmental Protection Agency (the Agency) and an approval from the Department of Agriculture Forestry and the Marine (DAFM) under the European Union (Animal By-Products) Regulations (Comp 45).

The EPA licence limits the annual waste acceptance rate to 45,000 tonnes. It authorises the treatment of biodegradable wastes to produce a soil improver and the stabilisation of the organic fines produced from the processing of residual solid municipal waste.

It is proposed to increase the annual waste intake to ca 80,000 tonnes. This will involve the extension of the composting building to provide additional primary, pasteurising and secondary processing capacity. The proposed development requires a review of the Industrial Emissions (IE) Licence.

An application for an IE licence for an activity that involves the use, production or release of relevant hazardous substances (as defined in Section 3 of the EPA Act 1992 as amended), may require the preparation of a 'Baseline Report', the objective of which are to establish the status of soil and groundwater conditions at a site.

As the existing operations involve the use of diesel, which is classified as a hazardous substance, a Baseline Report was prepared.

1.1 Methodology

OCM's assessment was based on information in the Environmental Impact Assessment Report (EIAR) prepared as part of the IE licence application and followed the guidance in Part 5 of the European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions 2014/C 136/03

2. STAGE 1 & 2 HAZARDOUS SUBSTANCE

2.1 Stage 1 Hazardous Substances Currently Used, Produced and Released

Operations involve the storage and use of diesel fuelled mobile plant and equipment. Diesel is stored in a 1,000 litre bunded tank in a bunded fuel store. Hydraulic oil, vacuum pump oil and grease used in the plant maintenance are also kept in the store. The waste types that are and will be accepted are all non-hazardous.

2.2 Stage 2 Relevant Hazardous Substances

The hazardous substance of relevance to the baseline conditions is the diesel.

3. STAGE 3 - SITE SPECIFIC POLLUTION POSSIBILITY

3.1 Installation Location

The site is located in a rural setting two kilometres south-east the village of Littleton. It is bounded to the west, north and east by willow plantations and to the south by farm land. The majority of the land surrounding the property comprises cutaway bog, beyond which are worked bogs to the north east and south.

3.2 Installation Layout

The site layout, when fully developed is shown on Drawing No. 18-173-300. The licence boundary encompasses 3.58 ha and includes the access road off the L4101; a weighbridge; the composting building (4,864 m^2); an annex on the northern elevation of the building that houses a fuel store, main control room, a mezzanine office and electrical substation; an odour control unit (biofilter) to the south of the building; a condensate holding tank bund; portakabin offices and welfare facilities at the northern boundary; a firewater reservoir lagoon; a firewater retention lagoon, paved yards and unpaved access roads. The licensed area is surrounded by a stock proof security fence as required by the DAFM Animal By-Product Approval.

3.3 Installation Activities

3.3.1 Manufacture of Soil Improver

The compost process is static pile forced aeration that takes approximately six weeks to complete. There are three treatment stages, primary processing, pasteurisation and secondary processing. To prevent cross contamination there is a strict separation between the primary and secondary processing stages.

In the primary stage the incoming materials are mixed with 'amendment' materials e.g. wood chip that enhance the flow of air through the material and then placed in the primary composting bays.

The bays are formed by concrete walls, with roller shutter doors at the front. Once a bay is full temperature probes are inserted in the pile. These relay the temperature levels to a panel in the control room.

The bays have aeration channels in the floor that allow air to be distributed evenly through the pile and in these conditions the naturally occurring micro-organisms within the pile grow rapidly. The temperature levels are monitored and the aeration rate is varied as required until each batch has reached and maintained the optimum temperature of 60^0C. This usually takes between 7 and 8 days.

The piles are then removed from the bays and screened to reduce the particle size to 12mm. This takes out all non-organic materials (primarily plastics inadvertently placed in the brown bin) and 'overs' e.g. wood chip, which are returned to the waste in-take area for reuse in the process.

To comply with DAFM requirements on the treatment of waste that have the potential to contain animal by-products (APB), the screened materials are moved to two ABP pasteurising bays where a temperature of 70°C is achieved and maintained for a minimum of one hour to kill any pathogens that may be present. This typically takes 3 to 4 days.

The pasteurised materials are then sent to the secondary processing area where curing or maturation occurs in the aerated bays for up to four weeks. The final product is stable and dry and is stored inside the building, before it is sent off site.

Schedule E of the licence specifies a range of tests that must be completed on the final product to confirm it is suitable for use as a soil improver. SEHL carries out the relevant tests and maintains records for inspection by the Agency.

3.3.1 Biostabilisation

The purpose of the treatment is to stabilise the waste to meet the requirements of the Landfill Directive and landfill licences. This stabilisation requires primary processing only and pasteurisation and secondary processing is not required.

3.5 Inventory of Raw Materials and Wastes

Diesel is stored in a 1,000 litre bunded tank in the bunded fuel store. Hydraulic oil, vacuum pump oil and grease used in the plant maintenance are also kept in the store. The maximum amount of waste on site at any one time will be 800 tonnes.

3.8 Emergency Response

SEHL has prepared and implemented an Emergency Response Procedure (ERP) to minimise the risk of accidents or incidents that could result in adverse environmental impacts. The ERP ensures a rapid response to any incident by trained staff so as to minimise the impact on the environment of any associated emissions.

An emergency is an incident that has the potential to result in environmental pollution and harm to human health & safety. Based on the types of waste that are and will be accepted and the activities carried out, the only emergency that present a significant risk of environmental pollution is a fire.

3.8.1 Fire

The only area where there is the potential for a fire to occur is inside the composting building, annex to the composting building where combustible materials are handled and stored, and the portakabin office/welfare facilities.

The composting building has a span steel frame structure on top of 3 m high cast concrete walls topped with metal cladding. Internal fire walls minimise the risk of fire spread to the entire building. All buildings will have the appropriated fire certificates.

EXISTING VEHICLE ENTRANCE, GATES, SIGHT LINES. AS GRANTED UNDER PLANNING REG. REF. 07511853. NO ALTERATION PROPOSED

2 m TALL PALLISADE SECURITY FENCING

SITE NOTICE

EXISTING 2 M TALL STEEL CHAIN LINK FENCING

EXISTING ROAD ENTRANCE TO FACILITY 1:500

SITE NOTICE

EXISTING 2 M TALL STEEL CHAIN LINK FENCING

EXISTING 2 M TALL STEEL CHAIN LINK FENCING

EXISTING TARMAC COVERED ROAD SURFACE

- SITE BOUNDARY
- GREEN AREA
- EXISTING CONCRETE YARD
- EXISTING GRAVEL DRIVE
- NEW GRAVEL DRIVE
- EXISTING BIO-FILTER
- WILLOW PLANTED AREA
- EXISTING TREES
- PROPOSED TREES
- EXISTING 2 M TALL STEEL CHAIN LINK FENCING
- PROPOSED 2 M TALL STEEL CHAIN LINK FENCING

EXISTING RIGHT OF WAY ACCESS TO BE KEPT CLEAR

EXISTING SURFACE WATER OUTLET AS PER PLANNING REG. REF. 07511853.

EXISTING 2 M TALL STEEL CHAIN LINK FENCING

EXISTING PRE-FAB BUILDING STAFF FACILITIES

OUTLINE OF POND TO BE RELOCATED

ADDITIONAL STAFF PARKING

EXISTING HOLDING TANK

EXISTING GRAVEL CAR PARK

BIKE STAND

EXISTING PETROL INTERCEPTOR

PROPOSED 2 M TALL STEEL CHAIN LINK FENCING TO MATCH EXISTING

GATE

CANOPY

LOADING DOCKS TO ENGINEERS DETAIL

EXISTING CONCRETE YARD

PROPOSED DEFINED WALKWAY

EXISTING POND

NEW POND

NEW 2 M TALL STEEL CHAIN LINK FENCING TO MATCH EXISTING

LAWN

EXISTING OPEN DRAIN

F.F.L=118.86m

PROPOSED DEFINED WALKWAY

PROPOSED EXTENSION

FLAT ROOF TO THIS SECTION OF THE BUILDING

EXISTING WILLOW PLANTED AREA

NEW CONCRETE PATH

ROOF TOP GANTRY

EXTENSION TO BIO-FILTER

EXISTING BIO-FILTER

ACCESS STAIRS TO ROOF TOP GANTRY

NEW GRAVEL DRIVEWAY

NEW BIO FILTER CONDENSATE TANK TO ENGINEERS DETAIL

NEW CONCRETE PATH

NEW POND TO REPLACE EXISTING

EXISTING GRAVEL COVERED DRIVEWAY

EXISTING GRAVEL COVERED DRIVEWAY

FORM NEW GATE ACCESS TO WILLOW PLANTED FIELD

EXISTING MATURE HEDGEROW

EXISTING GATE AND 2 M TALL STEEL CHAIN LINK FENCING TO BE REPLACED

EXISTING OPEN DITCH TO BE PIPED. PIPE SIZE TO ENGINEERS DETAIL

PROPOSED SITE LAYOUT PLAN 1:500
SITE AREA BOUND IN RED: 3.58 HECTARES

mckenna + associates
high street, trim, co. meath.
phone / fax: +353 (0)46 948 6788
mobile: +353 (0)86 384 7470
email:info@mckennaarchitecture.com
web: www.mckennaarchitecture.com

Client
ACORN RECYCLING

Project Title
EXTENSION OF RECYCLING PLANT AT
ACORN RECYCLING, BALLYBEG, LITTLETON, THURLES, CO. TIPPERARY

Drawing Title
PROPOSED SITE LAYOUT PLAN

Drawn By	Date	Scale
S.HUSSEY	24.04.2020	1:500 @ A1
Revision	**Drwg. Status**	**Drwg. No.**
	PLANNING	18-173-300

4. SITE HISTORY

Planning permission was granted (Planning Ref.: 07511853) for the installation in October 2008 on what was previously undeveloped lands in agricultural use. Operations began in October 2009.

In June 2011 there was fire in the compost building that damaged the screening plant and the building roof. The emergency services were called to the site and extinguished the fire. The facility closed for 6 week while the damage to the roof was repaired and the screening plant replaced. In September 2011 there was a second fire, this time in the maturation area where compost had self-combusted. The emergency services were called to the site and extinguished the fire.

5. ENVIRONMENTAL SETTING

5.1 Hydrology

The site is in the catchment of the Ballyley River, which is approximately 120 m to the south. The Ballyley River flows from east to west and becomes the Breagagh River, which then flows north east to join the Drish River approximately 7.1 km to the north west of the site. The Drish River confluences with the River Suir a further 680 m west of this point. There are several man-made drainage ditches around the site that feed into the Ballyley River.

The site is not in an area which is prone to flooding and there have been no recorded past flood events. OGE completed a water balance for the area, based on the effective average rainfall (506 mm/year) and estimated that the annual maximum flood river flow (Q_{mean}) in the Ballyley Rivers is 6.4 m^3/s.

5.2 Geology

The subsoil underlying the majority of the site comprise cut peat. The western part of the site is underlain by limestone till. Based on the borehole logs in the OGE Report the peat is approximately 1 m thick and is underlain by boulder clay, followed by sandy gravel and finally gravel. The depth to bedrock was found to be between 7.6 and 10.15 m. The bedrock is the Aghmacart Formation, which comprises dark, shaley, micrite and peloidal limestone.

5.3 Hydrogeology

The bedrock is a Locally Important Aquifer that is productive only in local zones (Ll). The aquifer vulnerability, which is based on the type and thickness of the subsoils, is Moderate. The proven depth to bedrock is between 7.6 and 10.15 m which confirms this vulnerability classification. The local direction of groundwater flow is expected to be southerly direction, generally in the same direction as the topography.

6. SITE CHARACTERISATION

6.1 Conceptual Site Model

The soils comprise cut peat overlying limestone glacial tills. The depth of the soils and subsoils is between 7.6 and 10.15 m. The bedrock is classified as a locally important aquifer and the direction of groundwater flow is to the south, south-east towards a drainage ditch which discharges to the Breagagh River to the west of the site.

The existing licensed area is entirely covered by buildings that have paved concrete floors. The footprint of the proposed extension will be concrete paved. The paving complies with the requirements of Condition 3.4.2 of the Licence. Rainwater run-off from the building roofs discharges to the drainage ditches to the north and west of the site which join the Breagagh River to the west of the site.

6.1.1 Source-Pathway-Receptor

The only significant source of hazardous substances at the installation is diesel. The potential receptors are the subsoils and the bedrock aquifer. There is no actual pathway between the source and the receptors, and the only potential pathway is damage to the paved floors in building.

6.2 Groundwater Quality

The bedrock aquifer beneath the site is part of the Templemore Groundwater Body (IE_SE_G_131). The groundwater body (GWB) report prepared as part of the RBMP indicates the status of the water body is “Good”, with the overall objective to ‘Protect’ the status.

There are three on-site groundwater monitoring wells (GW1, GW2 and GW3). The results of the initial monitoring completed in 2007 are in Table 6.1 and represent baseline conditions. The groundwater had elevated ammonia, manganese and chromium levels. The ammonia and manganese were considered to be naturally occurring and associated with the bedrock type, the peaty nature of the subsoil and the confined nature of the aquifer.

Table 6.1 Groundwater Quality – December 2007

Parameter	Unit	GW1	GW2	GW3
Mercury	µg/l	<0.05	<0.05	<0.05
Potassium	mg/l	1.1	3	1.8
Sodium	mg/l	8.5	9	8.5
Total solids	mg/l	106	209	116
Total phenols	µg/l	<0.01	<0.01	<0.01
Arsenic	µg/l	5	<1	<1
Barium	µg/l	444	258	880
Boron	µg/l	30	40	40
Cadmium	µg/l	<0.4	<0.4	<0.4
Calcium	mg/l	37	70	32
Chromium	µg/l	52	44	17
Copper	µg/l	<1	<1	<1
Iron	µg/l	128	227	72
Lead	µg/l	1	2	7
Magnesium	mg/l	7	12	16
Manganese	µg/l	64	12	171
Nickel	µg/l	20	25	11
Phosphorus	µg/l	290	245	219
Selenium	µg/l	<1	<1	<1
Silver	µg/l	<2	<2	<2
Zinc	µg/l	24	28	31
TOC	mg/l	5	12	<2
Chloride	mg/l	14	17	11
Fluoride	mg/l	0.2	0.2	0.5
Sulphate	mg/l	<3	21	6
TON	mg/l	<0.3	3.3	<0.3
Ammoniacal N	mg/l	5.8	<0.2	2.3
Cyanide	mg/l	<0.05	<0.05	<0.05
Total alkalinity	mg/l	140	190	140

Schedule C of the licence requires annual monitoring of the wells for:

- pH,
- nitrate,
- ammonia,
- nitrogen,
- conductivity,
- chloride,
- organic compounds

The results of the monitoring undertaken in 2019 are in Table 6.2. The ammonia levels are high in GW1 and GW2, but are lower in GW3. The elevated ammonia is considered to be naturally occurring.

Table 6.2 Groundwater monitoring results - 2019

Parameter	Unit	GW1	GW2	GW3	EPA IGV	GTV
pH	pH units	7.7	7.7	7.9	≥ 6.5 and ≤ 9.5	NE
Nitrate	mg/l	<1.0	2.7	1	25	37.5
Ammonia	mg/l	1.75	3.16	0.02	0.15	0.065-0.175
Chloride	mg/l	18.3	20.9	18.2	30	24-187.5
Conductivity	µS/cm	433	461	480	1000	800-1875
Nitrogen	mg/l	3.3	5	<1.0	NE	NE

6.3 Soil Quality

A site investigation was completed in 2006 and a copy of the report is in Appendix 1. The soils are described as peat underlain by boulder clay, followed by sandy gravel and finally gravel. Soil samples was not retrieved or analysed therefore no site specific soil quality data is available. However, the site was previously undeveloped agricultural land prior to the construction of the composting facility and no made ground was encountered at any of the borehole locations.

APPENDIX 1

ACORN RECYCLING

SOILS, GEOLOGY AND WATER SECTION OF AN EIS FOR A PROPOSED COMPOSTING FACILITY AT BALLYBEG, LITTLETON, CO. TIPPERARY

December 2007

PROJECT NO. : 1020602

ALL COMMUNICATIONS RELATED TO THIS DOCUMENT SHOULD BE DIRECTED TO

Eur. Geol. Shane O'Neill PGeo
O'Neill Ground Water Engineering
Unit D5, M7 Business Park
Naas **Tel: 045-895668**
Co. Kildare **Fax: 045-881705**
soneill@groundwatereng.ie

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List Of Authors : Kirsty Hooker M.Sc.	**Client :** Acorn Recycling
	Client Contact Ref : Ronan Beasley
Signature :	**Approved For Issue :** EurGeol Shane O'Neill P.Geo Dip. CECLA
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QUALITY CONTROL

The signing of this statement confirms this report has been prepared and checked in accordance with the OGE Peer Review Process.

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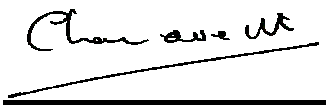
Peer Reviewer **Shane O'Neill**	 Signed	06/12/2007 Date

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SOILS, GEOLOGY AND WATER SECTION OF AN EIS FOR A PROPOSED COMPOSTING FACILITY AT BALLYBEG, LITTLETON, CO. TIPPERARY

1 INTRODUCTION AND METHODOLOGY

1.1 O'Neill Ground Water Engineering Ltd. (OGE) were commissioned by Acorn Recycling Ltd. to prepare the Soils, Geology and Water section of an Environmental Impact Statement (EIS) for a proposed composting facility at Ballybeg, Littleton, Co. Tipperary.

1.2 The site is located adjacent to a third class road, which joins the N8 National Road between Littleton and Horse & Jockey. The site is located 2km south of Littleton (*Figure No. 1*).

1.3 This report is based on information obtained from both fieldwork and a desk study. A previous Landspread Assessment had been completed by GES Limited on the same site and this was made available to OGE.

1.4 For the fieldwork component, OGE initially carried out a site walkover on 14th August 2006. This was followed by groundwater and surface water sampling and a site survey on 12th December 2006, after three monitoring wells had been drilled.

1.5 For the desk study, data were obtained from the following sources:

EPA, Landfill Manuals and Landfill Monitoring, 2nd Edition, 2004.

GES Limited, Landspread Assessment for Landbank at Ballybeg Littleton, Co. Tippereary, Jan 2006.

Ordnance Survey Of Ireland, Discovery Series 1:50000 mapping - Map 66

Geological Survey of Ireland (2005), National Seamless Geology Bedrock GIS Dataset

Geological Survey of Ireland (1996), Geology of Tipperary. GSI, Dublin.

Teagasc Soil and Subsoil Maps, EPA Soils and Subsoils Mapping Project, May 2006.

Unit D5, M7 Business Park, Newhall, Naas, Co. Kildare
T:045-895668 F:045-881705 Mb:087-2300933
Email: info@groundwatereng.ie
Directors: S O'Neill (Managing) O O'Neill
Registered Office as above. Registered No. 354725. VAT No. 3900664V

2 THE EXISTING ENVIRONMENT

2.1 Topography and Drainage

The site is located in a flat area with an elevation of approximately 120m AOD. The Ballyley River runs along the southern boundary of the site. There are several small streams and drainage ditches running through and adjacent to the site that flow into the Ballyley River.

The ground was observed to be poorly drained and boggy during the site visit. However, there had been unusually high rainfall during this period.

2.2 Bedrock geology

Details of the bedrock geology were obtained from the GSI (1996 & 2005). Regionally, the area is underlain by a succession of shallow shelf deposited Visean Limestones generally with a total thickness of about 750m.

The site itself is underlain by the Aghmacart Formation, which is described as dark shaly micrite and peloidal limestone. They are typically dark grey and fine grained, and are often altered locally by dolomitisation from underlying bedrock units. These limestones form part of the Dinantian Upper Impure Limestone rock unit.

To the east of the site the bedrock is the Crosspatrick Formation, described as pale-grey cherty crinoidal limestones, which underlies the Aghmacart Formation in succession. They are Dinantian Pure Bedded Limestones. Further east again are the Waulsortian Limestones, described as massive unbedded lime-mudstones, and of the Dinantian Pure Unbedded Limestones rock unit. The bedrock geology of the area is displayed in *Figure No. 2*.

2.3 Structural Geology

The geological formations beneath the site comprise a gently dipping limb between a synclinal axis to the west and an anticlinal axis to the east. Both axes trend northeast. The Visean Limestones are extensively faulted in the region, but there are no mapped faults within or near to the proposed site.

2.4 Karstification

The limestone in the Littleton area is not classified as being karstified and no karst features were observed during the site visits.

2.5 Quaternary Geology and Soils

The quaternary period encompasses the last 1.6 million years and deals with the soils that were deposited over the bedrock described above. The Pleistocene (1.6 million years – 10.000 years ago) is commonly known as the last Ice Age, which was a period of intense glaciation separated by warmer inter-glacial periods. During the current Holocene the climate was warmer and wetter approaching that which we have today.

According to the Teagasc soil and subsoil maps (Teagasc, 2005), the majority of the site is underlain by cut peat. The western part of the site is underlain by limestone till beneath with well or poorly drained soils. During the site visit it was observed that the ground was boggy and poorly drained over much of the site, due to the high rainfall preceding the visit. The soils and subsoils mapped in the area are shown in *Figure No. 3.*

Some site specific information can also be taken from the drillers logs (See Section 2.7). The drillers described the soil as peat. Below the peat, boulder clay followed by sandy gravel, and finally gravel were encountered in Well No. 1, while gravel was the only subsoil type recorded for Well Nos. 2 and 3. The borehole logs are presented in *Appendix No. 1.*

2.6 Depth to Bedrock

Together with the soil and subsoil type, the depth to bedrock (i.e. soil/subsoil thickness) is a critical factor in determining ground water vulnerability. According to the records taken by Drilling 2000 Ltd., bedrock was not encountered during the drilling of Well No. 1 until a depth of 10.15m. The bedrock was encountered at a depth of 8.3m during the drilling of Well No. 2. The depth to bedrock at Well No. 3, recorded by Aquatech, is 7.6m (25ft). The borehole drilling records are presented in *Appendix No. 1.*

2.7 On Site drilling

Three monitoring wells were drilled on the site during November 2006, two down-gradient (Well Nos. 1 and 3) and one up-gradient (Well No. 2) of the proposed composting facility location. The total depths of Well Nos. 1, 2 and 3, measured by OGE, are 10.42m, 8.64m and 5.20m respectively. Drilling records were available from Drilling 2000 Ltd. for Well Nos. 1 and 2, and from Aquatech for Well No. 3, and are presented in *Appendix No. 1*. Well locations are presented in *Figure No. 4.*

OGE sampled two of the three wells in December 2006; the hydrochemical results are discussed in Section 2.9.4.

2.8 Hydrology

2.8.1 Regional and Local Hydrology

The site is bounded to the south by the Ballyley River. This river flows east to west and becomes the Breagagh River, which flows north into the Drish River, a tributary of the River Suir.

There are no EPA biological or chemical sampling stations on the Ballyley or Breagagh Rivers. Hydrochemical sampling was carried out by OGE in December 2006; results are discussed together with the groundwater sampling results in Section 2.9.4.

There is a hydrometric station on the Breagagh River at Littleton, 2.5km downstream from the site. The river catchment area at this location is recorded at 33.7km^2.

The site is drained by several drainage ditches, shown in *Figure No. 5*. At the time of the site visit in December 2006, the ditches toward the river were at capacity due to the heavy rain at that time. The willow trees planted at the site are expected to improve the drainage.

2.8.2 *Water Balance*

Rainfall and evapotranspiration data were sourced from Met Éireann. The average annual rainfall (AAR), based on data from three rainfall stations nearest to the proposed development, was determined to be 943 mm (*Table No.1*). The three rainfall stations are: Littleton, 1.2km north of the site; Ballinure,

6.5km south of the site and Thurles, 7.6 km north-west of the site. Rainfall data and other information regarding the stations are given in *Table No. 1.*

The closest synoptic station to the site is in Kilkenny, 31 km east of the site. The average Potential Evapotranspiration (PE) for Kilkenny is 460mm/yr. This value is used as a best estimate of the site PE. Actual Evapotranspiration is estimated as 95% of the PE, or 437mm/yr.

The Effective Rainfall (ER) for the site is determined from:

ER = AAR – AE.

= 943 mm/yr – 437mm/yr

ER = 506mm/yr

Table No. 1: Long term average mean monthly rainfall data (in mm) supplied by Met Éireann

Station		**Grid Ref.**		**Ht (mAOD)**		**Opened**		**Closed**				
Littleton		*S197534*		*122*		*1950*		*1982*				
Jan	***Feb***	***Mar***	***Apr***	***May***	***Jun***	***July***	***Aug***	***Sept***	***Oct***	***Nov***	***Dec***	***Annual***
104	79	72	60	71	60	57	76	78	95	86	100	**937**
Station		**Grid Ref.**		**Ht (mAOD)**		**Opened**		**Closed**				
Ballinure		*S160459*		*136*		*1943*		*1984*				
Jan	***Feb***	***Mar***	***Apr***	***May***	***Jun***	***July***	***Aug***	***Sept***	***Oct***	***Nov***	***Dec***	***Annual***
108	83	75	63	75	62	61	85	83	101	91	106	**991**
Station		**Grid Ref.**		**Ht (mAOD)**		**Opened**		**Closed**				
Thurles		*S118560*		*101*		*1952*		*1985*				
Jan	***Feb***	***Mar***	***Apr***	***May***	***Jun***	***July***	***Aug***	***Sept***	***Oct***	***Nov***	***Dec***	***Annual***
102	74	69	57	67	57	56	72	75	94	81	96	**900**
										Average		**943**

2.9 Hydrogeology

2.9.1 Aquifers and Aquifer Classifications

The Aghmacart Formation Limestones underlying the site are Dinantian Upper Impure Limestones and have been categorised as being a Poorly Productive Bedrock Aquifer. Their aquifer category is Ll: Locally important, moderately productive only in local zones. The Poorly Productive Dinantian Upper Impure Limestones extend several kilometers to the north, south and west. Immediately to the east of

the site is the Crosspatrick Formation, of Dinantian Pure Bedded Limestone, which has been categorised as a Productive Fissured Aquifer (category Lm: Locally moderately productive). A further 300m to the east are the Wausortian Limestones, which are Dinantian Pure Unbedded Limestones and are categorised as a Poorly Productive Bedrock Aquifer (category Ll Locally important, moderately productive only in local zones). Aquifer categories are shown together with bedrock geology information in *Figure No. 2.*

2.9.2 Third Party Wells

There are no wells immediately adjacent to the application site. The nearest house is nearly 300m from the proposed composting facility location, and up-gradient.

2.9.3 Aquifer Vulnerability

Groundwater vulnerability is a measure of the risk to groundwater in the event of a potential contaminant being released near ground level. The vulnerability of ground water is a function of the nature of the overlying soil cover, the presence and the nature of the overburden, the nature of strata, and the depth of overburden to the water table.

North Tipperary has not had a complete groundwater vulnerability map completed by the GSI, but a draft vulnerability map is available for the county. This has delineated areas where groundwater is likely to be extremely vulnerable, with all other areas listed as having high to low vulnerability. The site falls into the **high to low groundwater vulnerability** category.

2.9.4 Hydrochemistry

Samples of groundwater from two of the monitoring wells, and a water sample from Ballyley River, were taken by OGE on 12th December 2006. It was not possible to sample Well No. 1 as there was no water flowing into the well. The samples were sent to Alcontrol Laboratories for analysis. The objective of the sampling was to establish the existing hydrochemistry of ground water up and downgradient of the proposed composting facility, and the river water adjacent to it.

The samples were analysed for the baseline parameters listed in the EPA Landfill Monitoring Guidance (EPA, 2004). The complete results are presented in *Appendix 2.* Table 3.1 from EPA (2003) is also presented in *Appendix 2;* this shows the Interim Guideline Values (IGV) for groundwater for chemical

parameters as well as those of other guidelines such as the standards for surface waters. Both the groundwater samples and the river water sample were within the relevant maximum allowable concentrations for all parameters tested with the following exceptions.

- The sample taken from BH2 had a chromium concentration of 0.052mg/l, which exceeds the IGV for chromium of 0.03mg/l. The sample from the Ballyley River also exceeded the EQS for surface waters of 0.03mg/l for chromium, with a concentration of 0.044mg/l. It is not certain why the chromium concentrations were above the standard concentrations. Chromium is widely used in industry but there is no activity in the area that could be a potential source. Chromium can also occur naturally in water due to geology.

- The groundwater samples from both boreholes exceeded the IGV for manganese, which is 0.05mg/l. The samples from BH2 and BH3 had manganese concentrations of 0.064mg/l and 0.171mg/l respectively. Muddy limestones commonly have elevated concentrations of manganese (and iron), which often have to be treated in drinking water from such aquifers. Therefore, the elevated manganese concentrations are believed to be geologically related. Peat also contains higher manganese than other soil types.

- Both boreholes also had groundwater concentrations above the limit for ammonium of 0.15mg/l as NH_4 (0.12mg/l as N). The result from BH2 was 5.8mg/l (ammoniacal N), while BH3 had a concentration of 2.3mg/l. The elevated ammonium is again likely to be natural from the low oxygen groundwater due to the reduction occurring in the overlying peaty soil. The low concentration of oxidised nitrogen supports this theory as the oxygenated nitrogen, such as nitrate, would be converted to ammonium in oxygen poor water.

3 IMPACTS

3.1 Introduction

The proposed composting facility will not discharge leachate or any other discharge to groundwater or surface waters. Liquid waste will be generated from the biofilter, but it is intended to recycle this back into the composting process. The proposed site toilets will also not result in any wastewater discharge to groundwater or surface waters. Waste water will be stored in a sewage storage tank, then emptied regularly using vacuum tankers into the composting facility.

The composting facility will be enclosed by a concrete base. The finished compost product will be stored inside, also on a concrete base, before being shipped.

Since there will be no wastewater (foul water) discharges from the proposed facility, the only water that must be managed on site is stormwater (rain water). The site will not add any volume of water to the Ballyley River, but it will increase the rate at which water reaches the river as it will runoff directly from the added areas of hardstanding rather than via the soil.

3.2 Impact of stormwater runoff on the Ballyley River

3.2.1 Estimate of maximum annual river flow

The annual maximum flood (Q_{mean}) can be estimated using catchment characteristics, as determined for Ireland by Cunnane and Lynn (1976). This is not the average flow. The annual maximum flood is larger than the mean flow, and statistically it exceeds the one-year flood by approximately 15 percent. In turn, this flow is used as a basis for determining larger flows of a given return period.

The equation is:

$$\mathbf{Q_{Mean} = 0.00042A^{0.95}F_s^{0.22}G^{1.18}R^{1.05}w^{-0.93}s^{0.19}}$$

Where:

A = catchment area (km²) = 33.7

F_s = channel network = 1.32

G = winter rainfall acceptance potential = 0.3

R = average annual rainfall (mm) = 943

w = storage index = 1

s = slope of main channel (m/km) = 11.2

The area of the catchment of the Ballyley River at the nearest hydrometric gauging station, 2.5km down stream from the application site, was recorded as 33.7 km². The values of the other parameters were determined using the methods outlined in the Flood Studies Report and the resulting equation for the area was found to be:

$$Q_{Mean} = (0.00042)(33.7)^{0.95}1.32^{0.22}0.3^{1.18}943^{1.05}1^{-0.93}11.2^{0.19}$$

$$Q_{Mean} = 6.4\ m^3/s\ (6400\ l/s)\ \text{for the site}$$

Cunnane and Lynn (1975) found that for two thirds of rivers the percentage error was found to fall within -33 and +50%, giving a range of values of 4.3 to 9.6 m^3/s for the Q_{Mean} (annual maximum flood).

3.2.2 *Design Return Floods from Annual Maximum Flows*

A series of growth factors for flood flows of varying recurrence intervals was determined for Ireland (Cunnane & Lynn, 1975). These can be multiplied by the Annual Maximum Flood Value of 6.4 m^3/s to estimate flood flows recurring over different intervals. The multiplier and resulting maximum flow (Q_T) for different recurrent intervals in years (T) are shown in *Table No. 2*.

Table No. 2: Design Flood Flows for Return Periods (T) Calculated for the Ballyley River

T (years)	2	5	10	25	50	100
Multipier	0.95	1.20	1.37	1.60	1.77	1.96
Q_T (m^3/s)	6.1	7.7	8.8	10.2	11.3	12.5

3.2.3 *Estimated Storm Water Run-off from Proposed Development*

The estimated runoff from the hardstanding area of the site during storm events can also be calculated using methods outlined in the Flood Studies Report. The total area of hardstanding (total roofs and paved ground) is 12,445m^2 as shown in *Figure No. 5*. *Table No. 3* displays the calculations used to estimate the storm water runoff from the site during storm events of different duration and return period. The total volumes of storm water running off from the site in a 24 hour period during an annual, 50 and 100 year storm event are 0.0055, 0.011 and 0.013 m^3/s respectively.

Table No. 3: Calculation of 50 Year and 100 Year 24 Hour Return Period Runoff Volumes From Site

Annual 24 Hour Return Storm Event

i	ii	iii	iv	v	vi					
2-day M_5	**r** (1 hr -M_5) /	**Storm Duration**	**r_D** (DR_5) /	**Dr_5**	**Growth Factor** (M_T/M_5)	**Dr_1**	**DR_1**	**Area**	**Flow**	**Flow**
(mm)		(hours)		mm		mm	m	m^2	m^3/duration	m^3/s
				(i) x (iv)		(v) x (vi)				
60	0.3	0.5	0.23	13.80	0.69	9.52	0.010	12445	119	0.065834
60	0.3	1	0.30	18.00	0.70	12.60	0.013	12445	157	0.043558
60	0.3	2	0.38	22.80	0.71	16.19	0.016	12445	201	0.027981
60	0.3	6	0.55	33.00	0.73	24.09	0.024	12445	300	0.01388
60	0.3	12	0.68	40.80	0.74	30.19	0.030	12445	376	0.008698
60	0.3	24	0.85	51.00	0.75	38.25	0.038	12445	476	0.00551

50 Year 24 Hour Return Storm Event

i	ii	iii	iv	v	vi					
2-day M_5	**r** (1 hr -M_5) /	**Storm Duration**	**r_D** (DR_5) /	**Dr_5**	**Growth Factor** (M_T/M_5)	**Dr_{50}**	**DR_{50}**	**Area**	**Flow**	**Flow**
(mm)	(%)	(hours)		mm		mm	m	m^2	m^3/duration	m^3/s
				(i) x (iv)		(v) x (vi)				
60	0.3	0.5	0.23	13.80	1.70	23.46	0.023	12445	292	0.1622
60	0.3	1	0.30	18.00	1.68	30.24	0.030	12445	376	0.104538
60	0.3	2	0.38	22.80	1.65	37.62	0.038	12445	468	0.065025
60	0.3	6	0.55	33.00	1.60	52.80	0.053	12445	657	0.030421
60	0.3	12	0.68	40.80	1.56	63.65	0.064	12445	792	0.018336
60	0.3	24	0.85	51.00	1.52	77.52	0.078	12445	965	0.011166

100 Year 24 Hour Return Storm Event

i	ii	iii	iv	v	vi					
2-day M_5	**r** (1 hr -M_5) /	**Storm Duration**	**r_D** (DR_5) /	**Dr_5**	**Growth Factor** (M_T/M_5)	**Dr_{100}**	**DR_{100}**	**Area**	**Flow**	**Flow**
(mm)		hours		mm		mm	m	m^2	m^3/duration	m^3/s
				(i) x (iv)		(v) x (vi)				
60	0.3	0.5	0.23	13.80	1.98	27.32	0.027	12445	340	0.188915
60	0.3	1	0.30	18.00	1.95	35.10	0.035	12445	437	0.121339
60	0.3	2	0.38	22.80	1.91	43.55	0.044	12445	542	0.075272
60	0.3	6	0.55	33.00	1.83	60.39	0.060	12445	752	0.034794
60	0.3	12	0.68	40.80	1.77	72.22	0.072	12445	899	0.020804
60	0.3	24	0.85	51.00	1.72	87.72	0.088	12445	1092	0.012635

Where:

2-day M_5 is two day rainfall with a return period of 5 years (mm)

r is ratio of one hour duration five year return period over two day rainfall five year return period

DR_5 is five year return period rainfall for the duration of interest

DR_x is the x year return period rainfall for the duration of interest

In the 1, 50 and 100 – year storm events the contribution of storm water from the site will only comprise approximately 0.1% of the total flow of the Ballyley River, as shown in *Table No. 4* below.

Table No. 4: Proportion of storm flow in the Ballyley River originating from proposed site

Return Period	**1***	**50**	**100**
River Flow (m^3/s)	6.4	11.3	12.5
Runoff From Site (m^3/s)	0.0055	0.011	0.013
Runoff From Site As % Of River Flow	0.09	0.1	0.1

* Annual Maximum Flood

3.2.4 Recommended Storm Water Management

There are three potential options for managing the storm water generated on site. These are to:

discharge to groundwater via soak pits,

discharge to the Ballyley River via the drainage ditches on site, or

discharge directly to the Ballyley River.

3.2.4.1 Discharge to Groundwater

The information obtained from the site visit, desk study and drillers logs suggests that the site is poorly drained. There were no soakaway tests done on the site, but the available information indicates that it would be prone to waterlogging and not suitable for discharging runoff from the site.

The Teagasc subsoils maps indicate that an area to the north-west of the development site is underlain with deep, well drained soils. This area might be suitable for soakaways for the discharge of storm water to ground. However, BRE365 Digest Tests would be required to confirm the suitability of this area.

3.2.4.2 Discharge to River via drainage ditches

At the time of the site visit on 12th December 2006 the drainage ditch in the southeast of the site leading into the Ballyley River was at capacity. This was during a wet week, but nonetheless does indicate that there is a potential for this drainage ditch to fill. Therefore, OGE do not recommend discharging rainfall runoff to the ditches but instead piping it directly into the Ballyley River.

3.2.4.3 Discharge directly to Ballyley River

The above calculations show that the estimated discharge from the site during heavy rainfall events would not contribute a significant amount of the overall flow of the Ballyley River (0.1% of the total flow). Therefore, in OGE's opinion discharging runoff water directly to the river would not increase the flood risk of the river and is the most suitable option for managing storm water. A 150mm pipe is recommended to transfer the runoff to the river. The proposed locations of the discharge pipe and discharge point to the Ballyley River are presented in *Figure No. 6*.

3.2.4.4 Additional Recommendations

OGE recommend that the storm water management system include an oil interceptor in the event of any spillage onto the paved areas from vehicles on the site. A silt trap is also recommended for collection of any material transported onto the paved areas by vehicles. There is no concern of contamination from the composting facility itself as the facility and all storage of material will be inside on a concrete base.

To reiterate, there will be no additional water flowing to the Ballyley River as a result of the proposed development. The site lies entirely within the river catchment. However, the developed area will result in the water moving to the river faster than it would naturally via the soil.

4 IMPACTS ON THE GEOLOGY, SOIL AND WATER ENVIRONMENTS

4.1 Direct Impacts

There will be no direct impacts from the proposed development on the geology.

The construction of the composting facility will entail the removal and placement of soil, this is a permanent but acceptable consequence of development.

There is no potential impact on water quality from the composting facility itself. If it is developed as proposed, the activities will not result in any discharge or potential leakages to either groundwater or surface water. There is the potential for runoff from paved areas to contaminate the river or the groundwater with hydrocarbons in the event of a leaky vehicle or with mud material carried in by vehicles, but this can be easily mitigated against.

The soils and subsoils appear to have low permeability and there is the potential for the runoff from the site to cause waterlogging or overwhelm the existing drainage ditches if not properly managed.

5 MITIGATION MEASURES

5.1 Stormwater Management System

It is proposed to collect all rainwater coming on to the paved or developed areas of the site and discharge directly to the Ballyley River via a 150mm diameter pipe. This will ensure that there is no additional pressure on the capacity of the existing drainage ditches and that the water reaches the river which has the capacity to receive the stormwater.

5.2 Oil Interceptor and Silt Trap

It is proposed to install both an oil interceptor and silt trap as part of the storm water management system for the site. This will ensure that there is no contamination of either the river or the groundwater from mud carried in with vehicles or in the unlikely event of an oil leak.

5.3 Hydrochemical Monitoring

It is proposed to establish a monitoring programme to verify that the development is having no impact on the chemistry of either the groundwater or river water. Annual monitoring is proposed for the parameters analysed during the sampling in December 2006. These parameters are taken from the EPA Landfill Monitoring recommendations (EPA, 2004), compliance monitoring.

The parameters are as follows:

pH,

electrical conductivity,

ammoniacal nitrogen,

total solids,

calcium, cadmium,

chromium,

chloride,

copper,

cyanide,

iron,

lead,

magnesium,

manganese,

nickel,

potassium,

mercury,

sodium,

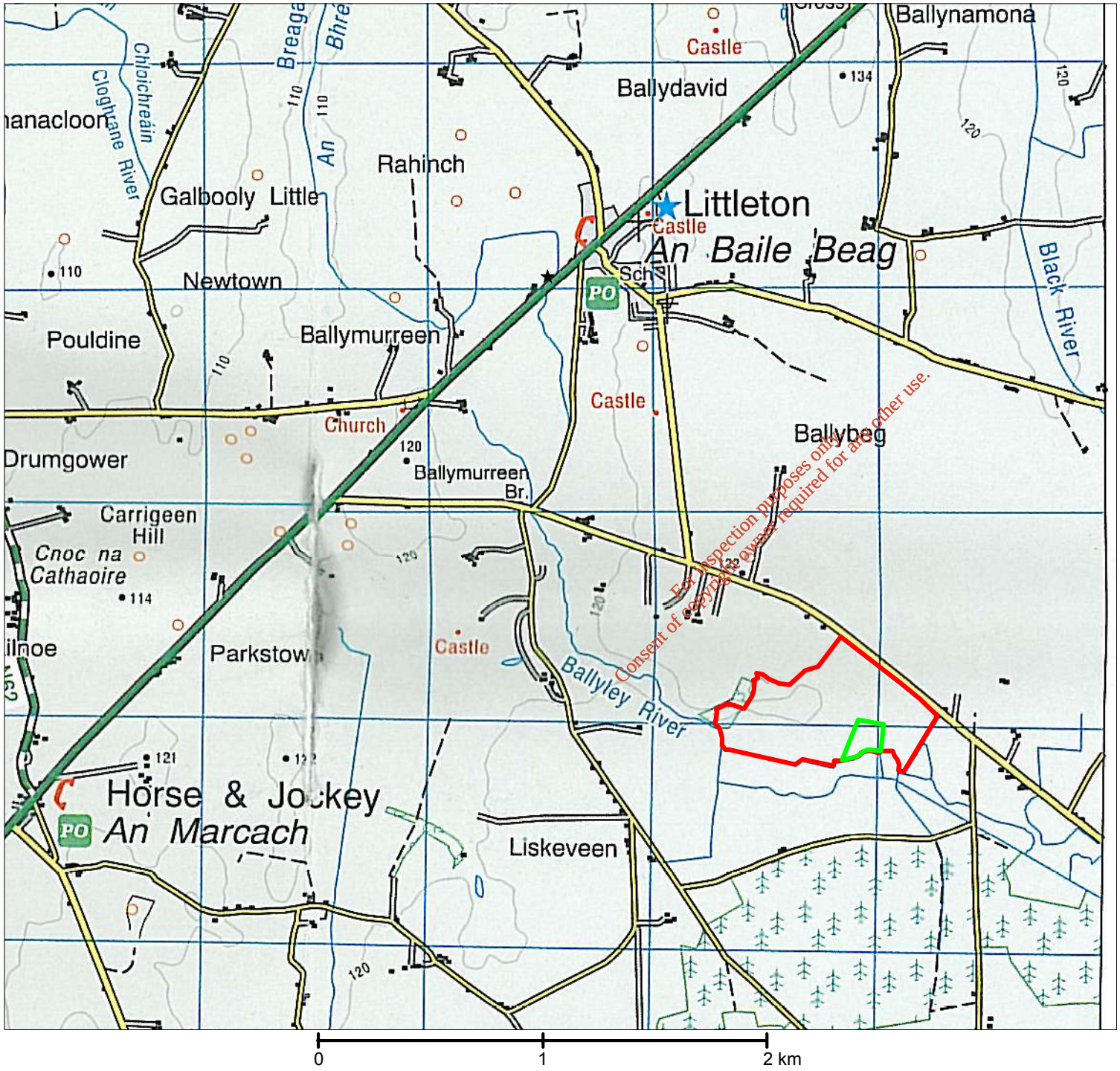
sulphate,

zinc,

total alkalinity,

total organic carbon,

total oxidised nitrogen



O'Neill
ground water engineering

Unit D5, M7 Business Park,
Newhall, Naas, Co. Kildare, Ireland
Ph:+353 45 895668 Fax:+353 45 881705 Mob:+353 87 2300933
info@groundwatereng.ie

Client: Acorn Recycling Ltd.

Project:
Soils, Geology and Water Section Of EIS For Proposed Composing Facility Littleton, Co. Tipperary

Title:
Site Location

Key:

Site Location

Proposed Composting Faclility Location

Map No. 66 1:50000 Discovery Series
Ordnance Survey Ireland Licence No. EN 0006107
Ordnance Survey of Ireland and
Government of Ireland

Scale:	1:25000	**Datum:**	Malin
Date:	December 2007	**Checked:**	SON
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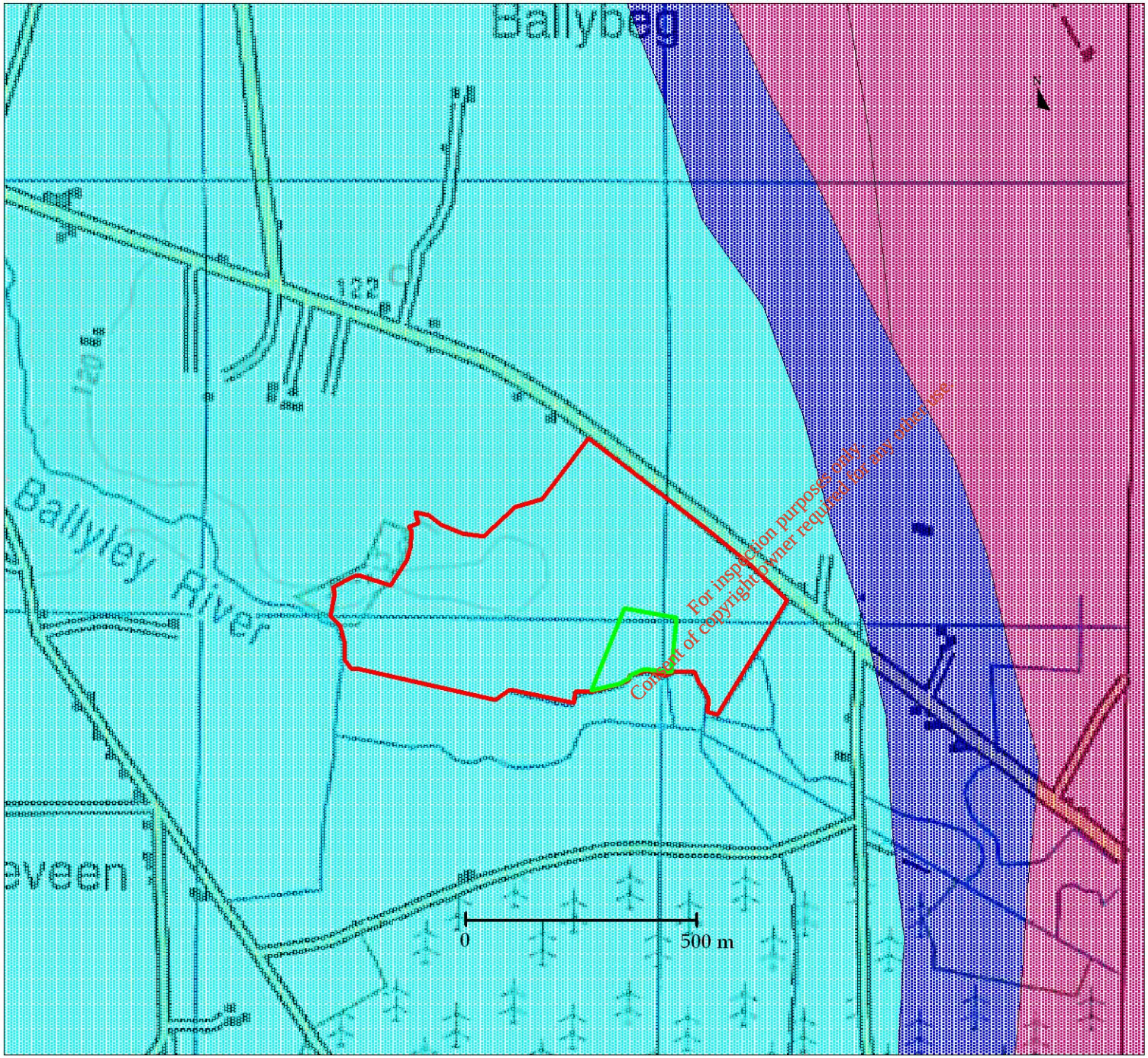
Drawn by:	KH/AW	**Reference:**	1020602



O'Neill
ground water engineering

Unit D5, M7 Business Park,
Newhall, Naas, Co. Kildare, Ireland
Ph:+353 45 895668 Fax:+353 45 881705 Mob:+353 87 2300933
info@groundwatereng.ie

Client: Acorn Recycling Ltd.

Project:
Soils, Geology and Water Section Of EIS For Proposed Composing Facility Littleton, Co. Tipperary

Title:
Bedrock Geology and Aquifer Caterories

Key:

Site Location

Proposed Composting Facility Location

Bedrock Formation and Aquifer Category

Aghmacart Formation
Ll: Poorly Productive Aquifer

Crosspatrick Formation
Lm: Productive Fissured Aquifer

Waulsortian Limestones
Ll: Poorly Productive Aquifer

Scale:	1:1,2500	**Datum:**	Malin
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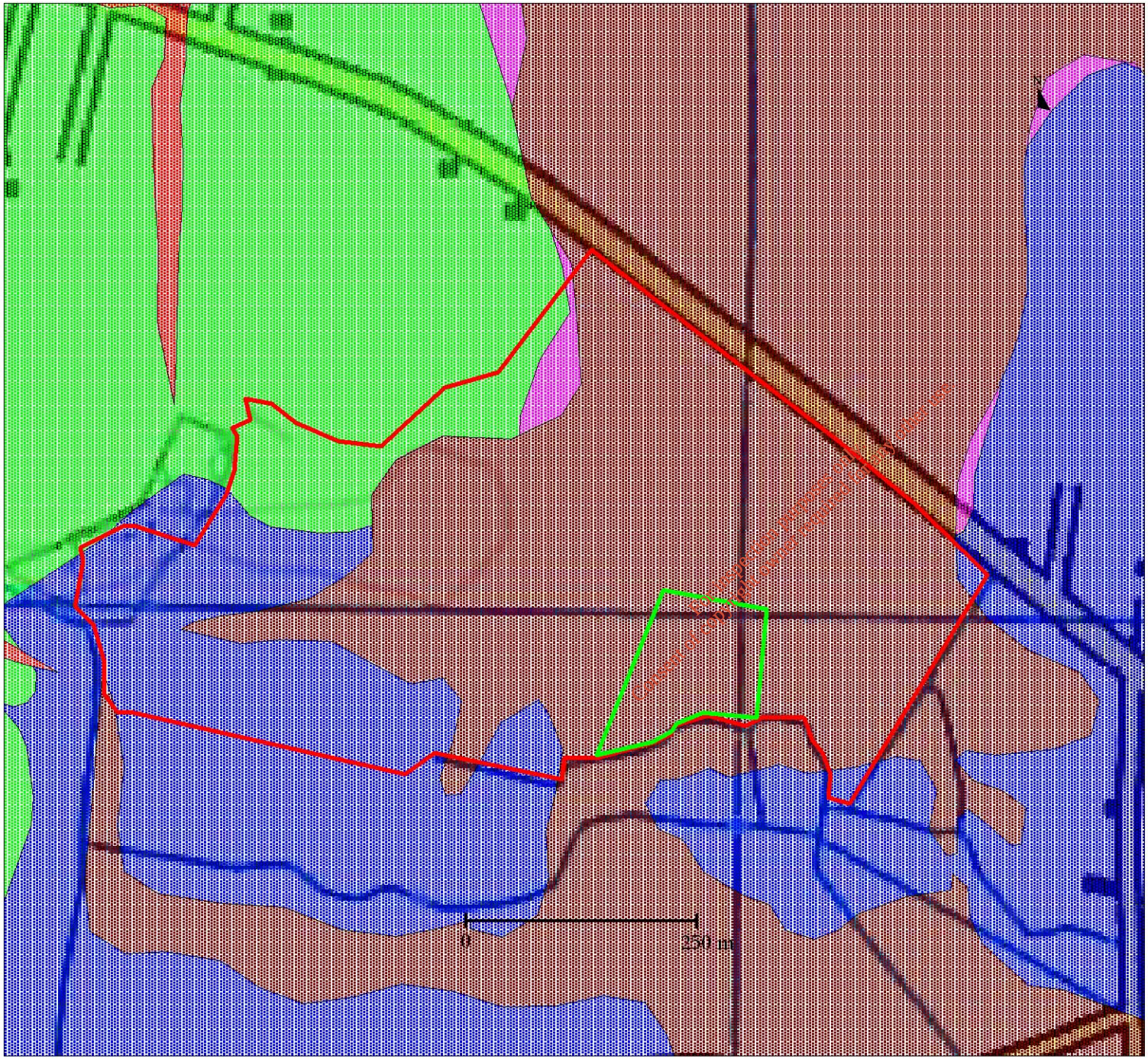
Author:	KH/AW	**Figure no:**	2
Drawn by:	KH/AW	**Reference:**	1020602



O'Neill
ground water engineering

Unit D5, M7 Business Park,
Newhall, Naas, Co. Kildare, Ireland
Ph:+353 45 895668 Fax:+353 45 881705 Mob:+353 87 2300933
info@groundwatereng.ie

Client: Acorn Recycling Ltd.

Project:
Soils, Geology and Water Section Of EIS For Proposed Composing Facility Littleton, Co. Tipperary

Title:
Soil & Subsoils Mapped At The Site

Key:

- Site Location
- Proposed Composting Facility Location
- Cut Peat
- Deep, poorly-drained (basic) soil over Limestone till
- Alluvial derived
- Deep, poorly-drained (basic) soil with peaty topsoil over Limestone till
- Deep, well-drained (basic) soil over Limestone till

Scale:	1:6,250	**Datum:**	Malin
Date:	December 2007	**Checked:**	SON
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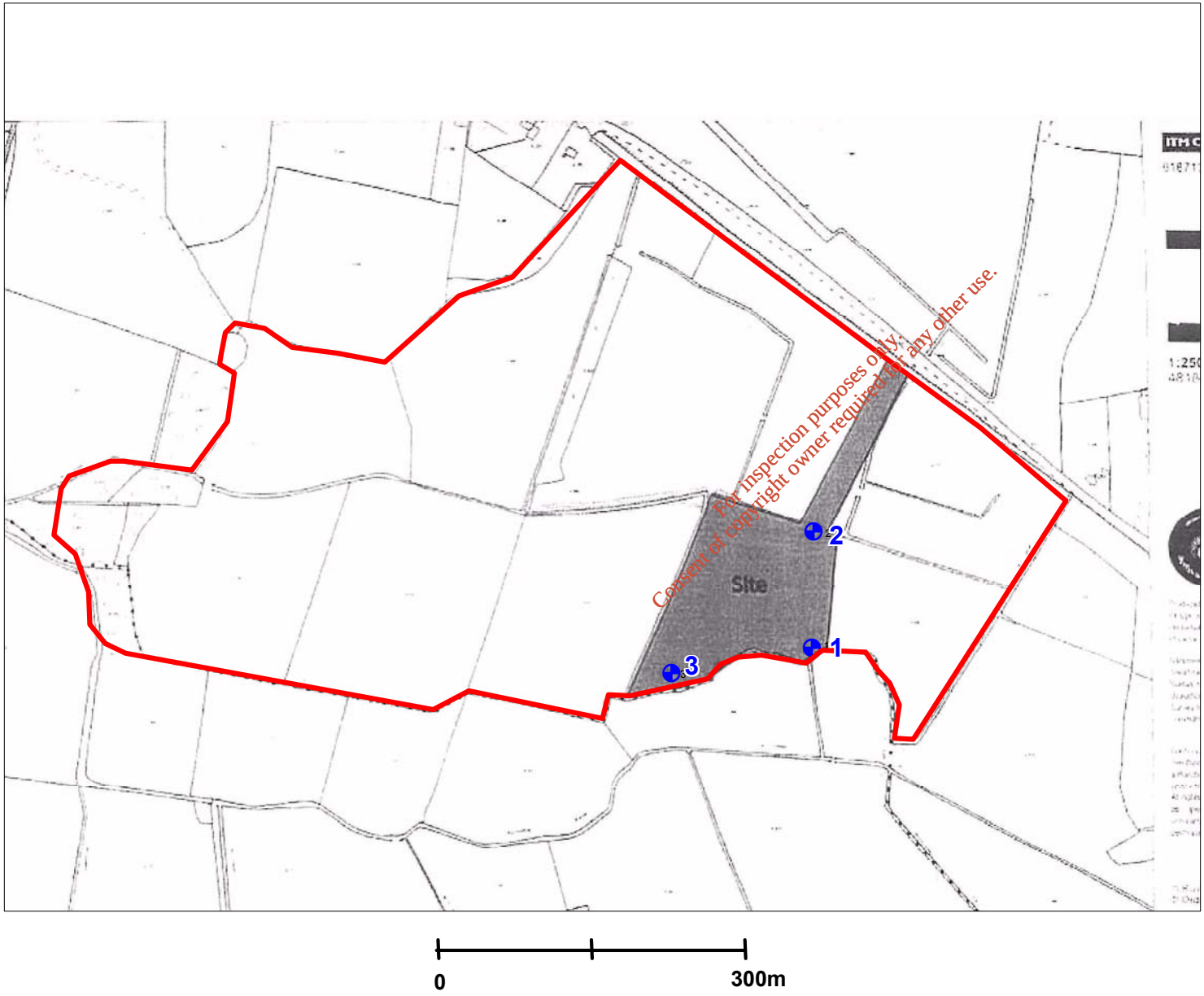
Drawn by:	KH/AW	**Reference:**	1020602



O'Neill
Unit [illegible] Business Park,
Newhall, Naas, Co. Kildare, Ireland
Ph:+353 45 895668 Fax:+353 45 881705 Mob:+353 87 2300933
info@groundwatereng.ie

Client: Acorn Recycling Ltd.

Project:
Soils, Geology and Water Section Of EIS For Proposed Composing Facility Littleton, Co. Tipperary

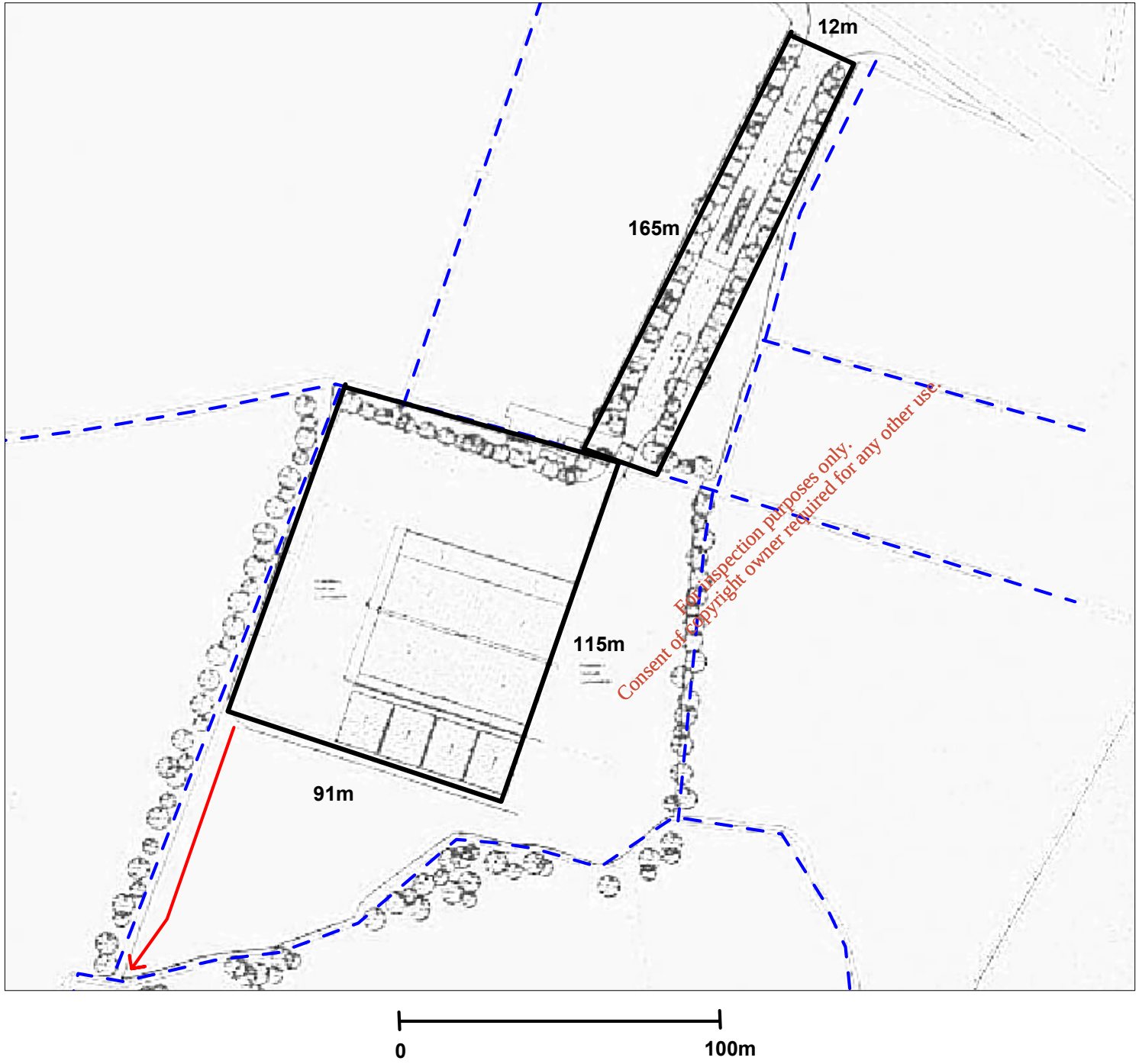
Title:
Site Map Showing Locations of Monitoring Wells

Key:

Site

Location and ID of wells

Scale:	1:6,000	**Datum:**	Malin
Date:	December 2007	**Checked:**	SON
Author:	KH/AW	**Figure no:**	4
Drawn by:	KH/AW	**Reference:**	1020602



O'Neill
ground water engineering

Unit D5, M7 Business Park,
Newhall, Naas, Co. Kildare, Ireland
Ph:+353 45 895668 Fax:+353 45 881705 Mob:+353 87 2300933
info@groundwatereng.ie

Client: Acorn Recycling Ltd.

Project:
Soils, Geology and Water Section Of EIS For Proposed Composing Facility Littleton, Co. Tipperary

Title: Site Plan Showing Paved Areas and Locations of Drainage Ditches

Key:

Drainage Ditches

Proposed areas of hardstanding (paved or roofs)

Total Area =
(91m x 115m) + (12m x 165m)
= 12,445m2

Discharge Pipe to Ballyley River

Scale: 1:1800	**Datum:** Malin
Date: December 2007	**Checked:** SON
Author: KH/AW	**Figure no:** 5
Drawn by: KH/AW	**Reference:** 1020602

O'Neill
ground water engineering

Unit D5, M7 Business Park,
Newhall, Naas, Co. Kildare, Ireland
Ph:+353 45 895668 Fax:+353 45 881705 Mob:+353 87 2300933
info@groundwatereng.ie

Client: Acorn Recycling Ltd.

Project:
Soils, Geology and Water Section Of EIS For Proposed Composing Facility Littleton, Co. Tipperary

Title:
Location of Stormwater Discharge Pipe & Discharge Point to Ballyley River

Key:

- Site Outline
- Stormwater Discharge Pipe
- Point of Discharge to Ballyley River

Modified from Drawing Obtained from Bluett & O' Donoghue Architects

Scale:	NTS	**Datum:**	Malin
Date:	December 2007	**Checked:**	AVZ
Author:	AW	**Figure no:**	6
Drawn by:	AW	**Reference:**	1020602

APPENDIX 1

BOREHOLE DRILLING RECORDS

Shift Report

DRILLING 2000 LIMITED

Client/Location Littleton Angle Day

Borehole No. BH 1 Shift Date 20/11/06

FROM	TO	DESCRIPTION OF STRATA	THICKNESS	RECOVERY	SIZE
GL	1m	Peat			
1m	2-65	Rock & blue Boulder Clay			
2·65	3·15	Sandy Gravel			
3·15	10·15	Gravel			
		water at 5m			
		END of hole 10·15			

OPERATION	800	830	900	930	1000	1030	1100	1130	1200	1230	100	130	200	230	300	330	400	430	500	530	600	630	700	730	800
Core Drilling																									
Rev. Circulation																									
Rotary Percussion																									
Drilling sand, cave, etc.																									
Inserting casing																									
Pulling casing																									
Reaming casing - rock																									
Fishing																									
Cementing Time																									
Moving Time																									
Waiting Time																									
Angle Tests																									
Tractor Hire																									
Repairs																									
Miscellaneous Operations																									
Water Supply																									

Materials used/damaged/ left in B.H.	No.	Type/Size
Corebit		
Casing Shoe		
Reaming Shell		
~~Polymer~~ Pea Gravel	6	Bags
Bentonite	1	Bag
Cement	1	Bag
Piezo/Casing	6·3m	50mm
Piezo Slotted	4m	50mm
Piezo Caps	1	
PW Casing		
HW Casing		
NW Casing		
BW Casing		

Distance from Water (metres)

Comments

Driller:	Pat Shiel	Hours
Crew:	Pat Mc Gowen	Hours
		Hours
		Hours
		Hours

Drill Supervisors approval _____ Client approval _____ Date _____

report

DRILLING 2000 LIMITED

Client/Location Littleton Angle Day

Borehole No. BH 2 Shift Date 20/11/06

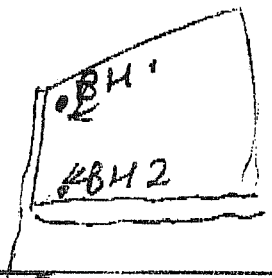
FROM	TO	DESCRIPTION OF STRATA	THICKNESS	RECOVERY	SIZE
GL	1·15	Peat			
1·15	4·15	Gravel			
4·15	8·3	Gravel			
	8·3	Rock			
		END of hole 8·6			

OPERATION	600	630	900	930	1000	1030	1100	1130	1200	1230	100	130	200	230	300	330	400	430	500	530	600	630	700	730	800
Core Drilling																									
Rev. Circulation																									
Rotary Percussion																									
Drilling sand, cave, etc.																									
Inserting casing																									
Pulling casing																									
Reaming casing - rock																									
Fishing																									
Cementing Time																									
Moving Time																									
Waiting Time																									
Angle Tests																									
Tractor Hire																									
Repairs																									
Miscellaneous Operations																									
Water Supply																									

Materials used/damaged/ left in B.H.	No.	Type/Size
Corebit		
Casing Shoe		
Reaming Shell		
~~Polymers~~ Pie Gravel	4	Bags
Bentonite	1½	Bag
Cement	1	Bag
Piezo/Casing	4·65m	50mm
Piezo Slotted	4m	50mm
Piezo Caps	1	
PW Casing		
HW Casing		
NW Casing		
BW Casing		

Distance from Water (metres)

Comments



Driller: Pat Shiel Hours

Crew: Pat Mc Sorley Hours

Hours

Hours

Hours

Drill Supervisors approval _____ Client approval _____ Date _____

APPENDIX 2

CERTIFICATES OF ANALYSIS

ALcontrol Laboratories (Dublin)

18a Rosemount Business Park,
Ballycoolin,
Dublin 11
Ireland
Tel: +353 (0) 1 8829893
Fax: +353 (0) 1 8829895

CERTIFICATE OF ANALYSIS

Client: O'Neill Ground Water Engineering

Unit D5
M7 Business Park
Newhall
Naas
Co. Kildare

Attention: Kirsty Hooker

Date: 4 January, 2007

Our Reference: 06-B07989/01

Your Reference: ACORN

Location:

A total of 3 samples was received for analysis on Wednesday, 13 December 2006. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Signed

Ken Scally

Ken Scally
General Manager, Ireland

Lorraine Mc Namara

Lorraine McNamara
Laboratory Technical Manager

Compiled By

Ashling Mulcahy

Ashling Mulcahy

UKAS TESTING
1291

GROUP

Printed at 15:26 on 05/01/2007

ALcontrol Geochem Ireland is a trading division of ALcontrol UK Limited.

Registered Office: Templeborough House, Mill Close, Rotherham, S60 1BZ. Registered in England and Wales No. 4057291

ALcontrol Laboratories Ireland

Test Schedule

Ref Number: 06-B07989/01

Client: O'Neill Ground Water Engineering

Date of Receipt: 13/12/2006

Sample Type: WATER

Location:

Client Contact: Kirsty Hooker

Client Ref: ACORN

Detection Method				CV AA	FLAME PHOTO	FLAME PHOTO	GRAVIMETRIC	HPLC	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS
UKAS Accredited [Testing Laboratory] No. 1291					✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ALcontrol Reference	Sample Identity	Other ID	P / V	Dissolved Mercury Low Level	Potassium	Sodium	Total Solids	Total Phenols by HPLC	Dissolved Arsenic Low Level	Dissolved Barium Low Level	Dissolved Boron Low Level	Dissolved Cadmium Low Level	Dissolved Calcium Low Level	Dissolved Chromium Low Level	Dissolved Copper Low Level	Dissolved Iron Low Level	Dissolved Lead Low Level
06-B07989-S0001-A01	1020601	UNKNOWN	Glass Bottle	X	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0001-A04	1020601	UNKNOWN	Plastic Bottle	-	X	X	X	-	X	X	X	X	X	X	X	X	X
06-B07989-S0001-A14	1020601	UNKNOWN	Plastic Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0001-A16	1020601	UNKNOWN	Plastic Bottle + H2SO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0001-A18	1020601	UNKNOWN	Glass Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0002-A01	1020602	UNKNOWN	Glass Bottle	-	-	-	-	X	-	-	-	-	-	-	-	-	-
06-B07989-S0002-A04	1020602	UNKNOWN	Plastic Bottle	X	X	X	X	-	X	X	X	X	X	X	X	X	X
06-B07989-S0002-A15	1020602	UNKNOWN	Plastic Bottle + H2SO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0002-A17	1020602	UNKNOWN	Plastic Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0003-A01	1020603	UNKNOWN	Glass Bottle	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0003-A03	1020603	UNKNOWN	Plastic Bottle	X	X	X	X	-	X	X	X	X	X	X	X	X	X
06-B07989-S0003-A14	1020603	UNKNOWN	Plastic Bottle + H2SO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0003-A16	1020603	UNKNOWN	Plastic Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0003-A18	1020603	UNKNOWN	Glass Bottle + NaOH	-	-	-	-	X	-	-	-	-	-	-	-	-	-

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

ALcontrol Laboratories Ireland

Test Schedule

Ref Number: 06-B07989/01

Client: O'Neill Ground Water Engineering

Date of Receipt: 13/12/2006

Sample Type: WATER

Location:

Client Contact: Kirsty Hooker

Client Ref: ACORN

Detection Method				ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	IR	KONE	KONE	KONE	KONE	SPECTRO	SPECTRO
UKAS Accredited [Testing Laboratory] No. 1291				✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
ALcontrol Reference	Sample Identity	Other ID	P / V	Dissolved Magnesium Low Level	Dissolved Manganese Low Level	Dissolved Nickel Low Level	Dissolved Phosphorus Low Level	Dissolved Selenium Low Level	Dissolved Silver Low Level	Dissolved Zinc Low Level	Total Organic Carbon	Chloride	Fluoride	Sulphate	Total Oxidised Nitrogen	Ammoniacal Nitrogen	Total Cyanide
06-B07989-S0001-A01	1020601	UNKNOWN	Glass Bottle	-	-	-	-	-	-	-	X	-	-	-	-	-	-
06-B07989-S0001-A04	1020601	UNKNOWN	Plastic Bottle	X	X	X	X	X	X	X	-	X	X	X	X	-	-
06-B07989-S0001-A14	1020601	UNKNOWN	Plastic Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	X
06-B07989-S0001-A16	1020601	UNKNOWN	Plastic Bottle + H2SO4	-	-	-	-	-	-	-	-	-	-	-	-	X	-
06-B07989-S0001-A18	1020601	UNKNOWN	Glass Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06-B07989-S0002-A01	1020602	UNKNOWN	Glass Bottle	-	-	-	-	-	-	-	X	-	-	-	-	-	-
06-B07989-S0002-A04	1020602	UNKNOWN	Plastic Bottle	X	X	X	X	X	X	X	-	X	X	X	X	-	-
06-B07989-S0002-A15	1020602	UNKNOWN	Plastic Bottle + H2SO4	-	-	-	-	-	-	-	-	-	-	-	-	X	-
06-B07989-S0002-A17	1020602	UNKNOWN	Plastic Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	X
06-B07989-S0003-A01	1020603	UNKNOWN	Glass Bottle	-	-	-	-	-	-	-	X	-	-	-	-	-	-
06-B07989-S0003-A03	1020603	UNKNOWN	Plastic Bottle	X	X	X	X	X	X	X	-	X	X	X	X	-	-
06-B07989-S0003-A14	1020603	UNKNOWN	Plastic Bottle + H2SO4	-	-	-	-	-	-	-	-	-	-	-	-	X	-
06-B07989-S0003-A16	1020603	UNKNOWN	Plastic Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	X
06-B07989-S0003-A18	1020603	UNKNOWN	Glass Bottle + NaOH	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

ALcontrol Laboratories Ireland

Test Schedule

Ref Number: 06-B07989/01

Client: O'Neill Ground Water Engineering

Date of Receipt: 13/12/2006

Sample Type: WATER

Location:

Client Contact: Kirsty Hooker

Client Ref: ACORN

Detection Method				TITRATION														
UKAS Accredited [Testing Laboratory] No. 1291				✓														
ALcontrol Reference	Sample Identity	Other ID	P / V	Total Alkalinity														
06-B07989-S0001-A01	1020601	UNKNOWN	Glass Bottle	-														
06-B07989-S0001-A04	1020601	UNKNOWN	Plastic Bottle	X														
06-B07989-S0001-A14	1020601	UNKNOWN	Plastic Bottle + NaOH	-														
06-B07989-S0001-A16	1020601	UNKNOWN	Plastic Bottle + H2SO4	-														
06-B07989-S0001-A18	1020601	UNKNOWN	Glass Bottle + NaOH	-														
06-B07989-S0002-A01	1020602	UNKNOWN	Glass Bottle	-														
06-B07989-S0002-A04	1020602	UNKNOWN	Plastic Bottle	X														
06-B07989-S0002-A15	1020602	UNKNOWN	Plastic Bottle + H2SO4	-														
06-B07989-S0002-A17	1020602	UNKNOWN	Plastic Bottle + NaOH	-														
06-B07989-S0003-A01	1020603	UNKNOWN	Glass Bottle	-														
06-B07989-S0003-A03	1020603	UNKNOWN	Plastic Bottle	X														
06-B07989-S0003-A14	1020603	UNKNOWN	Plastic Bottle + H2SO4	-														
06-B07989-S0003-A16	1020603	UNKNOWN	Plastic Bottle + NaOH	-														
06-B07989-S0003-A18	1020603	UNKNOWN	Glass Bottle + NaOH	-														

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

ALcontrol Laboratories Ireland

Test Schedule Summary

Ref Number: 06-B07989/01 **Sample Type:** WATER
Client: O'Neill Ground Water Engineering Location:
Date of Receipt: 13/12/2006 Client Contact: Kirsty Hooker
Client Ref: ACORN

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

SCHEDULE	METHOD	TEST NAME	TOTAL
X	CV AA	Dissolved Mercury Low Level	3
X	FLAME PHOTO	Potassium	3
X	FLAME PHOTO	Sodium	3
X	GRAVIMETRIC	Total Solids	3
X	HPLC	Total Phenols by HPLC	3
X	ICP MS	Dissolved Arsenic Low Level	3
X	ICP MS	Dissolved Barium Low Level	3
X	ICP MS	Dissolved Boron Low Level	3
X	ICP MS	Dissolved Cadmium Low Level	3
X	ICP MS	Dissolved Calcium Low Level	3
X	ICP MS	Dissolved Chromium Low Level	3
X	ICP MS	Dissolved Copper Low Level	3
X	ICP MS	Dissolved Iron Low Level	3
X	ICP MS	Dissolved Lead Low Level	3
X	ICP MS	Dissolved Magnesium Low Level	3
X	ICP MS	Dissolved Manganese Low Level	3
X	ICP MS	Dissolved Nickel Low Level	3
X	ICP MS	Dissolved Phosphorus Low Level	3
X	ICP MS	Dissolved Selenium Low Level	3
X	ICP MS	Dissolved Silver Low Level	3
X	ICP MS	Dissolved Zinc Low Level	3
X	IR	Total Organic Carbon	3
X	KONE	Chloride	3
X	KONE	Fluoride	3
X	KONE	Sulphate	3
X	KONE	Total Oxidised Nitrogen	3
X	SPECTRO	Ammoniacal Nitrogen	3
X	SPECTRO	Total Cyanide	3
X	TITRATION	Total Alkalinity	3

☐ Interim
☑ Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 06-B07989/01
Client: O'Neill Ground Water Engineering
Date of Receipt: 13/12/2006
(of first sample)

Sample Type: WATER
Location:
Client Contact: Kirsty Hooker
Client Ref: ACORN

	Detection Method	CV AA	FLAME PHOTO	FLAME PHOTO	GRAVIMETRIC	HPLC	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS
	Method Detection Limit	<0.05ug/l	<0.2mg/l	<0.2mg/l	<5mg/l	<0.01mg/l	<1ug/l	<1ug/l	<3ug/l	<0.4ug/l	<120ug/l	<1ug/l	<1ug/l	<2ug/l	<1ug/l	<100ug/l
UKAS Accredited [Testing Laboratory] No. 1291			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ALcontrol Reference	Sample Identity	Other ID	Dissolved Mercury Low Level	Potassium	Sodium	Total Solids	Total Phenols	Dissolved Arsenic Low Level	Dissolved Barium Low Level	Dissolved Boron Low Level	Dissolved Cadmium Low Level	Dissolved Calcium Low Level	Dissolved Chromium Low Level	Dissolved Copper Low Level	Dissolved Iron Low Level	Dissolved Lead Low Level	Dissolved Magnesium Low Level
			ug/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
06-B07989-S0001	1020601	UNKNOWN	<0.05	1.1	8.5	106	<0.01	5	444	30	<0.4	36990	52	<1	128	1	7372
06-B07989-S0002	1020602	UNKNOWN	<0.05	3.0	9.0	209	<0.01	<1	258	40	<0.4	69740	44	<1	227	2	12490
06-B07989-S0003	1020603	UNKNOWN	<0.05	1.8	8.5	116	<0.01	880	40	<0.4	32320	17	<1	72	7	15990

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Ashling Mulcahy

Printed at 15:26 on 05/01/2007

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

☐ Interim
☑ Validated

ALcontrol Laboratories Ireland
Table Of Results

Ref Number: 06-B07989/01
Client: O'Neill Ground Water Engineering
Date of Receipt: 13/12/2006
(of first sample)

Sample Type: WATER
Location:
Client Contact: Kirsty Hooker
Client Ref: ACORN

	Detection Method	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	IR	KONE	KONE	KONE	KONE	SPECTRO	SPECTRO	TITRATION	
	Method Detection Limit	<1ug/l	<1ug/l	<10ug/l	<1ug/l	<2ug/l	<1ug/l	<2mg/l	<1mg/l	<0.1mg/l	<3mg/l	<0.3mg/l	<0.2mg/l	<0.05mg/l	<1mg/l	
UKAS Accredited [Testing Laboratory] No. 1291		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	
ALcontrol Reference	Sample Identity	Other ID	Dissolved Manganese Low Level	Dissolved Nickel Low Level	Dissolved Phosphorus Low Level	Dissolved Selenium Low Level	Dissolved Silver Low Level	Dissolved Zinc Low Level	Total Organic Carbon	Chloride	Fluoride	Sulphate	Total Oxidised Nitrogen as N	Ammoniacal Nitrogen as N	Total Cyanide	Total Alkalinity as CaCO3	
			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
06-B07989-S0001	1020601	UNKNOWN	64	20	290	<1	<2	24	5	14	0.2	<3	<0.3	5.8	<0.05	140	
06-B07989-S0002	1020602	UNKNOWN	12	25	245	<1	<2	28	12	17	0.2	21	3.3	<0.2	<0.05	190	
06-B07989-S0003	1020603	UNKNOWN	171	11	219	<1	<2	31	<2	11	0.5	6	<0.3	2.3	<0.05	140	

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Ashling Mulcahy

Printed at 15:26 on 05/01/2007

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

APPENDIX

APPENDIX

1. Results are expressed as mg/kg dry weight (dried at 30°C) on all soil analyses except for the following: NRA Leach tests, flash point, and ammoniacal N_2 by the BRE method, VOC, PRO, Cyanide, Acid Soluble Sulphide, SVOC, DRO, PAH, PCB, TPH CWG ,TPH by IR, OFGs and SEM.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. A sub sample of all samples received will be retained free of charge for one month for soils and one month for waters (sample size permitting), but may then be discarded unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, an asbestos screen is done in-house on soils and if no fibres are found will be reported as NFD - no fibres detected. If fibres are detected, then identification and quantification is carried out by ALcontrol Technichem or Alcontrol Shutlers in the UK. If a sample is suspected of containing asbestos, then drying and crushing will be suspended on that sample until the asbestos results are known. If asbestos is present, then no analysis requiring dry sample are undertaken.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace is present in the volatile sample.

8. NDP – No Determination Possible due to insufficient/unsuitable sample.

9. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.

10. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

Last updated February 2005

ɪnning Notices | Planning Notices | Planning Notices | Planning Notices

LIN CITY COUNCIL
ɪts Properties Ltd intends to apply for permission for opment on this site of c. 1.86 ha which is bounded to Iorth by Proby's Lane, Henry Street, the rear of No's 1 Henry Street, the GPO Arcade; to the South by Middle y Street and the rear of No's 87-90, Independent House rotected Structure), to the East by No's 16-18 Henry t, the western boundaries of the GPO Arcade, Prince's t North, the western boundaries of Penneys; and to the by Liffey Street Upper and No. 6 Henry Street all at in 1. The development will consist of modifications to iitted Blocks A, B, C, and D (per Reg. Ref. 5170/06. An l Pleanala Ref. PL29N224640) comprising of:-
lock A:
he construction of a new retail use at -003 basement beneath the permitted Arnotts Department Store ,004 sq.m, of new floorspace in addition to c.329 sq.m :h was previously granted);
odifications to the permitted retail units at levels -001, ınd, 1st and 2nd;
odification to permitted retail units will result in a ıction of c.164 sq.m of permitted retail floor area which be relocated to Block B;
rovision of 4 No. new retail units at levels -001 baseıt level, ground, 1st and 2nd floor totaling c.6,514 sq.m eu of permitted department store floor area for Arnotts.
ı result of these revisions, the overall department store rspace within Block A will increase by c.1,923 sq.m; ɛr retail floorspace within Block A will increase by 762 sq.m. The total increase in floor area of Block A will c.4,004 sq.m of additional retail use at -003 basement l.
Block B:
The removal of stairs between 1st and 2nd floor level ıin permitted restaurant unit;
Proposed new retail use to 2nd floor of permitted restaut unit to provide for additional retail floorspace (c.870 n);
t basement level -001, an increase of permitted retail ɔr of c.164 sq.m as a result of the reconfiguration of il units at basement level;
configuration of uses within permitted basement areas to ommodate relocation of cinema to under Block D nprising the following:
At basement level -002, the relocation of 24 no. car ıces from under Block D to under Block B; retail storage l be reduced from permitted c.3,009 sq.m to c.1,957 m by this and relocation of permitted cinema; plant area l be reduced from permitted c.2,927 sq.m to c.1,737 m;
At basement level -003, the relocation of 42 no. spaces m under Block D to under Block B with consequential luction of permitted retail storage area from c.1,792 sq.m c.234 sq.m.
is results in an increase of c.753 sq.m of retail floorspace d a reduction of c.582 sq.m to the permitted restaurant. e overall floor area of Block B remains unaltered.
Block C:
Provision of an events ticket kiosk (c.9 sq.m) at ground or level;
Proposed use of permitted Cocktail Bar and service rridor (c.368 sq.m) at 1st floor level as retail floorspace .368 sq.m);
Proposed use of permitted cinema (c.1,135 sq.m) at 2nd ɔor level with retail floorspace of (c.866 sq.m);
Provision of cinema access foyer at ground floor level;
Proposed use of use of cinema lounge as part of panded hotel conference area (c.358 sq.m).
otal increase in retail floorspace in Block C is c.1,234 .m, with an increase in hotel floor area of c.71 sq.m. The erall floor area of Block C remains unaltered.
Block D (part thereof):
Provision of a double height cinema at basement levels 02 and -003 (c.1,326 sq.m of new cinema floorspace) in eu of permitted 2 no. levels of car and bicycle parking, talling c. 2,652 sq.m;
At basement level -001 provision of lift and stair core to ew cinema.
herefore, the overall floor area of Block D remains naltered;
he total floor area of permitted Blocks A, B,C and D (and 3 o. basement levels) will increase from c.134,922 sq.m to .137,600 sq m, a net increase of c.2,678 sq.m.
he application site incorporates Protected Structures at lo's 7-15 Henry Street; 94-96 Middle Abbey Street; and buts rear of 87-90 (Independent House, a Protected tructure) Middle Abbey Street.
he planning application may be inspected or purchased at fee not exceeding the reasonable cost of making a copy, at ie offices of the Planning Authority (Dublin City Council, lanning Department, Block 4, Ground Floor, Civic Offices, Vood Quay, Dublin 8) during its public opening hours 9.00 a.m. - 4.30 p.m. Monday to Friday). A submission or bservation in relation to the application may be made in vriting to Dublin City Council on payment of the prescribed ee of €20 within the period of 5 weeks beginning on the late of receipt by the authority of the application.

DUBLIN CITY COUNCIL: I Paul O Reilly am applying for permission for construction of a mixed use development at the former "Powers" shop site, Old Naas Road, Bluebell, Dublin 12. The redevelopment proposal entails demolition of the existing part 2 storey/ part single storey shop and restaurant structure and construction of a new 5 storey over lower ground floor and basement structure comprising car-parking/ Plant areas at basement level, office units at rear lower ground & ground, 1st to 3rd and set back 4th floor levels (total area 3689m²); Restaurant (295m²) & Retail (101.1m²) uses at part ground & lower ground floor levels together with dedicated vehicular entrance & exit points access from Old Naas Road, vehicle set down area, ancillary site works and landscaping. Dublin City Council. This application may be inspected or purchased at a fee not exceeding the reasonable cost of making a copy at the offices of Dublin City Council during its public opening hours and a submission or observation in relation to the application may be made to the Authority in writing and on payment of the prescribed fee (€20.00) within the period of 5 weeks beginning on the date of receipt by the Authority of the application.

DUBLIN CITY COUNCIL: Planning permission is sought by Stephen Cloonan for the demolition of existing commercial car sales and repair garages on Church Gardens and demolition of non-commercial garage on Church Avenue and construction of 6 No. 3 storey over basement terraced houses with first floor terraces to rear, each with off street parking accessed from Church Gardens, construction of a new vehicular access road off Church Avenue, infill and repair to existing stone wall to Church Avenue, together with associated site development and landscaping works for the entire development. The application may be inspected or purchased at a fee not exceeding the reasonable cost of making a copy at the offices of Dublin City Council – Block 4, Civic Offices, Wood Quay, Dublin 8 during its public opening hours, and a submission or observation in relation to the application may be made to the authority in writing on payment of the prescribed fee (€20), within the period of 5 weeks beginning on the date of receipt by the authority of the application.

FINGAL COUNTY COUNCIL: Permission sought for retention of sub-division of existing dwelling into 5 separate units, 1 no. 2 storey, 4 bedroom dwelling and 2 no. 2 bedroom units and 2 no. studio units 27 Castlefield Woods, Clonsilla, Dublin 15. For James Jordan. This planning application may be inspected or purchased at a fee not exceeding the reasonable cost of making a copy at the offices of the planning authority during its public opening hours and a submission or observation may be made to the authority in writing on payment of the prescribed fee (€20) within the period of 5 weeks beginning on the date of receipt by the authority of this application.

WEXFORD COUNTY COUNCIL: I hereby give notice of an application to Wexford County Council for permission for (a) the proposed erection of a fully serviced dwelling house and domestic garage and (b) re-alignment of existing entrance from public road, together with (c) all associated site works and ancillary services at Ballyseskin, (E.D. Kilmore), Co. Wexford. This application can be inspected or purchased at a fee not exceeding the reasonable cost of making a copy at the offices of the

KERRY COUNTY COUNCIL: Further information has been submitted for Planning Reference No. POS/1224, permission is sought for the demolition of existing structures, walls and a dwelling house and construction of a 2&3 storey terrace, of 4 dwellings with garages (2 four house bed and 2 two bed), one retail unit at ground floor, redevelopment of sea wall and provision of a boardwalk, new road and site layout incorporating car parking spaces at site entrance and ancillary works at former Daly's Seaweed Baths, Ladies Strand, Ballybunion, County Kerry, by Mr. John Walsh. Significant further information in relation to the application has been furnished to the Planning Authority and is available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy, at the offices of the Authority during its public opening hours, and a submission or observation in relation to the further information or revised plans may be made in writing to the Planning Authority on payment of the prescribed fee, not later than 2 weeks after the receipt of the newspaper notice and site notice by the Planning Authority, or in the case of a planning application accompanied by an EIS, within 5 weeks of receipt of such notices by the Planning Authority.

Public Notices

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE LICENCE
Acorn Recycling Limited, Kilcherstown Industrial Estate, Thurles, Co. Tipperary, intends to apply to the Environmental Protection Agency for a Waste Licence for a waste management facility (consisting of aerobic treatment of biodegradable waste, including composting) at Ballybeg, Littleton, Co. Tipperary - National grid reference (6188, 6520). The facility will have the capacity to process up to 45,000 tonnes of non-hazardous biodegradable waste per annum.
The principal class of activity to be carried out at the facility, as specified in the Fourth Schedule of the Waste Management Acts 1996 to 2003 is as follows: Paragraph 2: Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes).
Other activities to be carried out at the facility are as follows: Under the Third Schedule of the Waste Management Acts 1996-2003; Paragraph 6: Biological treatment not referred to elsewhere in this schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 5 or paragraphs 7 to 10 of this schedule, and Paragraph 13. Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
Under the Fourth Schedule of the Waste Management Acts 1996-2003; Paragraph 13: Storage of waste intended for submission to any activity referred to in a preceding paragraph of this schedule, other than temporary storage, pending collection, on the premises where such waste is produced.
An Environmental Impact Statement will be submitted to the Agency along with the Waste Licence Application. A copy of the Waste Licence Application, the Environmental Impact Statement, and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application, will, as soon as practicable after receipt by the agency, be available for inspection or purchase at the headquarters of the Agency.

Acknowledgments | Acknowledgments

Mary Ellen Cronin

MOULAGOW, DRINAGH, CO. CORK
ACKNOWLEDGEMENT AND FIRST ANNIVERSARY

On this, MARY ELLEN'S First Anniversary, her children Donal, Pat-Joe, Majella, Calie, Regina, Rosie and T.J. and her extended family would like to express our sincere gratitude to all those who sympathised and supported us on our sad loss. Thanks to all those who paid their respects at her home in Moulagow and those who attended the Mass and Burial. We appreciate all the Mass cards, perpetual enrolments, letters of sympathy and floral tributes. Deepest gratitude to Fr. Jim O'Donovan, who was a great friend to Mammy during his time in Drinagh, and for his great support to the family during the funeral. Sincere thanks to Cannon Mícheál O'Dálaigh who with Fr. Jim celebrated her Mass. Sincere thanks also to the many neighbours and friends who helped us over the course of the funeral. As it would be impossible to thank everybody individually please accept this acknowledgement as a token of our sincere appreciation. The Holy Sacrifice of the Mass has been offered for your intentions.

Ar Dheis Dé go raibh a h-anam

Joan Fitzgerald

CRONREA, BALLYDESMOND
ACKNOWLEDGEMENT AND FIRST ANNIVERSARY
October 16, 2007

The husband and family of the late JOAN FITZGERALD wish to thank all those who sympathised with them on the sad loss of a loving wife and mother; those who attended the Rosary, removal and funeral. We thank all those who called to our home, telephoned, sent Mass cards, perpetual enrolments, letters of sympathy and floral tributes. Thank you to those who travelled long distances to be with us. Special thanks to all our relatives, kind neighbours, friends and work colleagues who were a great support to us. Sincere thanks to the doctors and nurses of C.U.H. who attended to Joan. Also to her G.P., Dr. Bertie Daly, Newmarket. Special thanks to Fr. Patrick McCarthy for officiating at the funeral ceremonies. Also to Fr. Jim Kenneally, Fr. Pat Linehan, Fr. Tadgh Fitzgerald and Fr. Joe Murphy and altar servers. Also to the choir for the beautiful singing and music. A special word of thanks to Michael Buckley Undertaker for his professionalism throughout the funeral. Also to the grave digger. Thanks to the management and staff of Bob's Bar, Ballydesmond for the excellent catering on funeral day. Please accept this acknowledgement as a token of our deepest gratitude and appreciation. The Holy Sacrifice of the Mass has been offered for your intentions.

"Gone from home, never to be forgotten"

First Anniversary Mass at 8pm, October 18, in St. Patrick's Church, Ballydesmond.

Mary Josephine (Lealie) McCarthy

MAIN STREET, CASTLEMARTYR, CO.CORK.
ACKNOWLEDGEMENT AND FIRST ANNIVERSARY

Lealie's family would like to sincerely thank all those who sympathized with them at the time of her untimely passing one year ago. We wish to express our appreciation to all of you who came to her Removal and the Requiem Mass and funeral. We want to also thank everybody for the Mass Cards, Sympathy Cards and letters which we received.
We would like especially to acknowledge the particular kindness of her neighbours in Castlemartyr both in her lifetime and after her sad death. A number of people who are unknown to us helped at the scene of the accident and we would like to take this opportunity to express our gratitude to them. We want also to thank the nurses, doctors and chaplain at Cork University Hospital who attended to Lealie in her final hours. We wish to thank very sincerely Fr. J. Cogan PP Castlemartyr for officiating at the Removal and Requiem Mass. As often before Hydes Funeral Directors carried out all that we asked of them with kindness and sensitivity. The Holy Sacrifice of the Mass will be offered for all your intentions.
Lealie will be remembered at Mass marking the 1st Anniversary of her death in St Joseph's Church, Castlemartyr at 11.00am on Sunday October 19th 2008.

Mary Stubbs

ACKNOWLEDGEMENT AND FIRST ANNIVERSARY
October 16, 2007

On this, the first anniversary of our beloved mother's sad passing, we, her daughters, Helen, Katherine, Antoinette and Chris and her devoted grandchildren, wish to thank most sincerely all those who sympathised with us on our sad loss. Thanks to all who attended her removal, funeral, who sent Mass and sympathy cards and donations to the Alzheimer's Society. Our sincere thanks to Fr. Hennessy who celebrated her funeral Mass and to Fr. Mallon, Fr. Ryan and Fr. Roberts. Our thanks to Donal Attridge, O'Connell Funeral Directors for their kindness and professionalism. A special thank you to Dr. Kevin Brennan for his attention, care and friendship to Mammy over the years and during her long illness. Our sincere thanks to the matrons and staff of Fairy Hill and Bridhaven nursing homes for their excellent care of our mother. We would like to acknowledge and thank our extended families, our dear close friend Joy, relations, friends and neighbours for their kindness and support. The Holy Sacrifice of the Mass will be offered for all of your intentions.

Together with her husband, Billy, Mary is now
"Safe in the arms of Jesus"

RYAN, JAMES P (Acknowledgement and First Anniversary): The Family of the late James P Ryan, Mill Bar, Kilfinane, who died on 16 October 2007 wish to thank all those who sympathised with us on the sad loss of our father. We would like to thank all those who attended the removal, funeral Mass and burial.

In Memoriam | In Memoriam

Paddy Mitchell

EIGHT ANNIVERSARY
In loving memory of PADDY, who died October 16, 2000. Remembered with love this day and always. (Sheila & family).

Michael Murphy

REAROUR, AHERLA
NINTH ANNIVERSARY
In loving memory of MICHAEL, who died on October 16, 1999.
Loved and remembered everyday.
(Sadly missed by his mother, brothers, sisters and family).

Joan O'Callaghan

SECOND ANNIVERSARY
LATE OF KNOCKSCOVANE, MEELIN AND SOUTH TERRACE, CORK
A date that is filled with sadness,
Returns to us today,
To mark the day you left us,
In such a sudden way,
No matter how life changes,
No matter what we do,
There is always a special place Joan,
In our hearts for you.
(Sadly missed by her sister Delia and Paddy, niece Kathleen, Mark and children).

CADOGAN (Ninth Anniversary): In loving memory of a special husband and father DENIS CADOGAN, Market Street, Bantry, who died on October 16, 1999.
Deep in our hearts you will always stay,
Loved and remembered every day.
(Sadly missed by your loving wife May, son, daughters, sons-in-law, daughter-in-law, grandchildren, relatives and friends)

O'CONNELL: In loving memory of VINCENT, Cork Road, Mallow, who passed away on October 16, 2007.
Silent memories keep you near,
As time unfolds another year.
(Always remembered with love by his daughter Edel, son-in-law Ger and grandchildren David and Laura).

Ryan

14TH ANNIVERSARY
In loving memory of MAUREEN, late of Rochestown, who died on October 16, 1994. May she rest in peace.
Sad are the hearts that love you,
Secret tears still fall.
Living our lives without you,
Is the hardest part of all.
(Sadly missed by Tony and family)

HARRINGTON (Keelovanogue, Bantry), (Twentieth Anniversary): On October 10, 1988, MICHAEL.
You left us for a far better place,
We miss you every day,
But knowing that you are at rest is our consolation.
At this time, we take the opportunity again, to thank Mr Mulcahy and the wonderful staff of Bantry Hospital, for taking care of Michael in those last, sad weeks of his life. Mass has been offered for all their intentions this week.
(Remembered with love by John and Laboureé Kelleher and all the family and by his godchild Olive Martin).

McSWEENEY (Fifth Anniversary) In loving memory of DONAL, late of Knockrour, Aghabullogue, who died on October 16, 2003.
Oh Sacred Heart of Jesus,
We place all our trust in You.
(Always remembered and missed by his loving family)

MURPHY: In loving memory of my dear mother MAUREEN, whose anniversary occurs today.
Softly on an October day,
You heard the angels call,
You took the hand of Jesus,
And quietly left us all.
(Lovingly remembered by Michael, Ethna and Eoin).

O'CALLAGHAN (Second Anniversary): In loving memory of our dear sister HANNAH MARY (JOAN), Knockscovane, Meelin and South Terrace, Cork.
A day that's filled with sadness has returned to us today,
To mark the day you left us,
Each day we miss you more.
(Sadly missed by your brothers, sisters and auntie Peggie)

NOTICE TO ADVERTISERS

It is a condition of acceptance of advertisement orders that the proprietors do not guarantee the insertion of any particular advertisement on specified date or at all, although every effort will be made to meet the wishes of that advertiser.

Further, we do not accept liability for any loss or damage caused by an error or inaccuracy in the printing of any advertisement, no matter by whom or where accepted for publication; also to discontinue the publication of any advertisement previously published.

Although every advertisement is carefully checked, occasionally mistakes do occur. We therefore ask advertisers or their agents to check their advertisements carefully and inform us immediately of any errors.

We regret that we cannot accept responsibility for more than ONE INCORRECT insertion and that no re-publication will be granted in the case of typographical or minor changes which do not affect the value of the advertisement.

For a different view Irish Examiner

Deaths

BOLSTER (Schull October 8, 2008, fully, in the excell of the staff at General Hospital, Sadly missed by Be Michael and John, and friends. Specia to matron and all th Skibbereen Residen Centre for their w care and kindness his stay with them. Service at Holy Church, Schull October 17. Buri wards in Schull C Family flowers onl tions, if desired, RNLI.

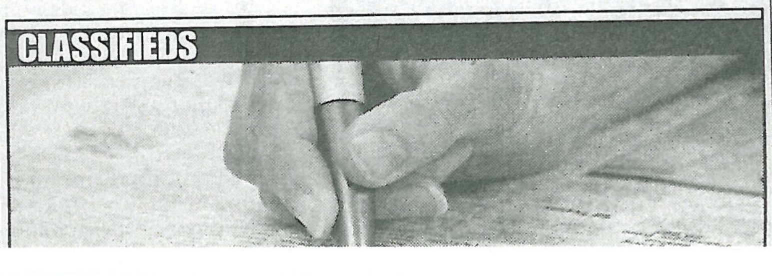
COLLINS (Double Bunalun, Skibbere October 14, 2008 fully, at the Mercy Hospital, SHEIL McCarthy), dear wife of Michael mother of Mich and Julie. Sadly r her loving husban daughter-in-law Dominic, brothe sister Eileen, niece and Jacqueline, law Margaret, neighbours and May she rest i Requiem Mass (Thursday) at 1 St. Patrick's Burial afterward New Cemetery, Ski

KIERNAN (Dub Cork): On Oct 2008, at the Bo Hospital, Cork, Sister of Bon Deeply regretted loving communit Fr. Desmond Kel nieces and neph ins, relatives an Reposing at St. Unit, Bon Secour Cork. Removal (Thursday) ev 7pm to Hospita Requiem Mass (Friday) at 11a afterwards to S Cemetery.
May she rest i

LARKIN (Meent Tournafulla, Co On October unexpectedly, b fully, at his DANIEL (DAN) husband of Ma missed and remembered by daughter Margar sons Timmy, Mi and Patrick, s (Hennessy), Stephen, gra daughters-in-law Teresa and N in-law Pat, si nieces, nephe bours, relatives circle of frien peace. Reposing Funeral Home, on this (Thursd from 6pm, with 8pm to St Patric Tournafulla. Re on tomorrow 12.30pm. Fun wards to the cemetery.

LYDON (Passag October 14, 2 fully, at home, ence of his l PETER, Pemb (late of Pharm dearly loved h best friend o (nee Armstron father of Step and David. Sad his loving wife ters Patricia a brother-in-law Thomas and relatives and a of friends. prayers at 7.3 (Thursday) e Mary's Chur West. Requie 2pm on tomor Funeral after Mary's Cemet West. Family please. Donati to Marymount
May be rest

O'BRIEN (Cu Lissarda): On



APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE LICENCE

Acorn Recycling Limited, Archerstown Industrial Estate, Thurles, Co. Tipperary intends to apply to the Environmental Protection Agency for a Waste Licence for a waste management facility (consisting of aerobic treatment of biodegradable waste, including composting) at Ballybeg, Littleton, Co. Tipperary – National grid reference (6188, 6520). The facility will have the capacity to process up to 45,000 tonnes of non-hazardous biodegradable waste per annum.

The principal class of activity to be carried out at the facility, as specified in the Fourth Schedule of the Waste Management Acts 1996 to 2003 is as follows:

Paragraph 2: Recycling or reclamation of organic substances which are not use as solvents (including composting and other biological processes)

Other activities to be carried out at the facility are as follows:

Under the Third Schedule of the Waste Management Acts 1996-2003

Paragraph 6: Biological treatment not referred to elsewhere in this schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 5 or paragraphs 7 to 10 of this schedule.

Paragraph 13. Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced

Under the Fourth Schedule of the Waste Management Acts 1996-2003

Paragraph 13: Storage of waste intended for submission to any activity referred to in a preceding paragraph of this schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

An Environmental Impact Statement will be submitted to the Agency along with the Waste Licence Application.

A copy of the Waste Licence Application, the Environmental Impact Statement, and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application, will as soon as practicable after receipt by the agency, be available for inspection or purchase at the headquarters of the Agency.

Signed: Niall Beasley

Date of erection of site notice: 15/10/08

Surveyed 1840
Revised 1903
Levelled

Rural PLACE Map

Drawing No. LM-01
Client: Acorn Recycling Ltd.

LOCATION MAP
Scale 1:10,560

LEGEND
- LANDS UNDER APPLICANTS CONTROL OUTLINED IN BLUE
- PROPOSED SITE OUTLINED IN RED

ITM CENTRE PT. COORDS
618715,652135

DESCRIPTION

MAP SHEETS
6 Inch
TY048

SITE NOTICE LOCATED HERE

Produced by National Map Services,
The Coord House Chambers,
27/29 Washington Street,
Cork City, Co. Cork.
On behalf of Ordnance Survey Ireland,
Phoenix Park, Dublin 8.

N

Scale:- 1:10,560
Scála:- 1:10,560

0 200 400 600 800 1,000 Metres

Plan Ref. No. 1041324_2_1
Plotted 18-AUG-2005