

Bottlehill Landfill Site Burnfort, Mallow, Co. Cork.

EPA Licence W0161-02

Annual Environmental Report 1st January 2012 – 31 December 2012

Prepared By:

Cork County Council, Waste & Energy Operations,

March 2013.

TABLE OF CONTENTS

1.0 INTRODUCTION	4
2.0 SUMMARY REPORT ON EMISSIONS	5
2.1 BASELINE GAS	6
2.1.1 General	6
2.1.2 Interpretation of Results	6
3.0 INTERPRETATION OF ENVIRONMENTAL MONITORING	
3.1 General	
3.2 Surface Water	
3.2.1 General	
3.2.2 Interpretation of Results.	8
3.2.3 Ecological Assessment.	
3.3 Groundwater Quality	
3.3.1 Interpretation of Results	
3.3.2 Interpretation of Annual List I/II Results	
3.3.3 Interpretation of private ground water Results	
4.0 DEVELOPMENT WORKS.	
4.1 Construction/Development 2012	14
5.0 ENVIRONMENTAL INCIDENTS, NON-COMPLIANCES AND COMPLAINTS	
6.0 ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT	
6.1 Financial Provision	16
6.2 Environmental Monitoring Committee.	16
6.3 Annual Fund for Local Environment	
Table 1: Landfill Gas results 2012	6
Table 2: Surface water location sites	7
Table 3: Surface Water results 2012	
Table 4: Groundwater gradients	9
Table 6:Groundwater Results 2012	
Table 7: Groundwater Results	
Table 8: Managerial Staff	
Table 9: Laboratory Codes	

1.0 <u>INTRODUCTION</u>

1.1 Scope and Purpose of the Report

The Environmental Protection Agency (EPA) issued Cork County Council with a Waste Licence (Waste Licence No. W0161-02) for Bottlehill Landfill site on 6th March 2012. In accordance with the requirement of Condition 11.6.1 of the waste licence,

'The licensee shall submit to the Agency, by the 31st March of each year, an AER covering the previous calendar year.'

The purpose of the Annual Environmental Report is to summarise the interaction of Bottlehill Landfill facility with the local environment. The report has been prepared in accordance with Waste Licence Register No. W0161-02 and the EPA "Integrated Pollution Control Licensing – Guidance for Annual Environmental Reporting". This is the ninth Annual Environmental Report to be produced for Bottlehill Landfill. As the facility is still non operational and currently in an interim operational mode, only items which have effectively changed since the last AER have been included.

1.2 Reporting Period

This, being the ninth Annual Environmental Report, is reporting for the period 1st January 2012 to 31st December 2012.

1.3 Site Location

Bottlehill Landfill is situated approximately 10 km from Mallow and 3.3 km south west of Burnfort Village and also 3.65 km east of the N20, the main Cork to Mallow road. The National Grid Reference of the centre of Landfill operations is E163750, N090250.

The facility address is:

Bottlehill Landfill, Bottlehill, Burnfort, Mallow, Co. Cork.

2.0 SUMMARY REPORT ON EMISSIONS

On the 4th July 2012, Cork County Council was granted a reduction in Environmental Monitoring by the EPA (EPA Reference W0161-02/AK02CN). The following arrangement for Environmental monitoring was granted by the EPA.

- 1. Under schedule D5. Ground Water will be monitored annually. This includes annual parameters and list I/II organics.
- 2. Under schedule D5. Surface Water will be monitored annually. This includes quarterly parameters only.
- 3. Weekly visual inspection of surface water is reduced to annually.
- 4. Monthly monitoring of perimeter gas wells reduced to annually.
- 5. Cancellation of annual Dust monitoring until further notice
- 6. Cancellation of annual noise survey until further notice
- 7. Annual Ecological monitoring is reduced to bi-annual. This will be carried out in 2013.
- 8. Quarterly reports are reduced. Annual Environmental Report still applies.

2.1 Baseline Gas

2.1.1 General

Table 1: Landfill Gas results 2012 (15/3/2012)

Site	Temp °C	Mb	CH₄ %	CO ₂	O ₂ %	N ₂ %
LFG1	10.0	1022	0.0	1.4	18.4	80.0
LFG2	10.0	1022	0.0	1.6	15.0	84.1
LFG3	10.0	1022	0.0	3.0	18.6	76.9
LFG4	10.0	1022	0.0	4.7	17.2	79.2
LFG5	10.0	1022	0.0	3.0	16.0	82.0
LFG6	10.0	1022	0.0	0.9	17.6	82.0
LFG7	10.0	1022	0.0	1.2	18.9	81.0
LFG8	10.0	1022	0.0	3.6	16.1	78.9
LFG9	10.0	1022	0.0	2.0	17.4	79.1
LFG10	10.0	1022	0.0	1.8	18.2	79.2
LFG11	10.0	1022	0.0	1.5	18.6	80.4
LFG12	10.0	1022	0.0	0.1	19.1	80.1
LFG13	10.0	1022	0.0	0.2	18.0	80.9
LFGa	10.0	1022	0.0	0.4	17.1	82.2
LFGb	10.0	1022	0.0	0.0	19.4	87.3
LFGc	10.0	1022	0.0	0.1	21.1	79.0
LFGd	10.0	1022	1.2	2.0	3.6	94.0

2.1.2 Interpretation of Results

Baseline Gas monitoring was carried out monthly throughout the year. The results of this monitoring show variable amounts of CO_2 throughout the site. Methane was found in wells **LFG d** at 1.2%.

3.0 INTERPRETATION OF ENVIRONMENTAL MONITORING

3.1 General

The following media have been sampled in accordance with the reduced Environment monitoring licence requirements:

- Annual Groundwater
- Annual Surface water

The facility is not accepting waste so the following media which are byproducts of waste degradation, have not been generated.

- Landfill gas
- Leachate

Baseline gas monitoring continues to be carried out, and has been reviewed in section 2.3 of this report.

3.2.0 Surface Water

3.2.1 General

Surface water monitoring was carried out at the 8 no. locations (SW1 and SW1A to SW7) outlined in Table 2.1. The results of the monitoring are presented in table 3.

Table 2: Surface water location sites

Monitoring Point	Northing	Easting	Location
SW1A	162853	089744	Upstream of the site, Leap ford Stream tributary
SW1	163297	089629	Within site boundary, outside proposed landfill footprint, on tributary to Coom
SW2	163766	090482	Within site boundary outside proposed landfill footprint, on tributary to Toor
SW3	164572	089044	Within site boundary, on tributary to Coom
SW4	165056	090479	Upstream of site on tributary to Toor
SW5	165560	089574	Downstream on Toor River
SW6	165481	088811	Downstream on tributary to Coom River it merges with Toor into Coom
SW7	167272	089084	Downstream on Coom River after Toor joins the Coom

27/02/2012 Date Location Temp DO Hq Conductivity Chloride NH4 **BOD** COD **TSS** mg/IN mg/l us/cm mg/l mg/l mg/l mg/l SW1A 92.0 9.40 10.41 6.8 14.00 0.05 <2 20.00 SW1 85.0 9.80 11.38 6.9 17.99 0.06 <2 16.00 6 SW2 72.0 9.30 10.95 20.49 0.04 24.00 4 6.2 <2 SW3 95.0 9.80 11.33 5.5 17.99 0.24 <2 17.00 8 SW4 132.0 9.10 10.11 5.8 19.99 0.04 <2 24.00 12 SW5 132.0 9.50 11.43 5.9 15.50 0.07 <2 9.00 6 SW6 10.50 95.0 3 10.08 6.2 16.99 80.0 <2 10.00 SW7 9.40 11.58 5.8 120.0 17.99 0.12 <2 9.00 6

Table 3: Surface Water results 2012

3.2.2 Interpretation of Results.

All results are within limits specified by the Waste Licence. As the main construction work of the facility is now complete and the main operation of the facility has not commenced, no disruptive work is being carried out and land disturbed during construction is now more stable. This reduces the risk of heavy rain producing runoff high in suspended solids.

3.2.3 Ecological Assessment.

Ecological minting is reduced to bi-annual monitoring. Ecological monitoring will be carried out in 2013

3.3 Groundwater Quality

3.3.1 General

Groundwater monitoring is carried out at 16 locations in and around the site. The locations of these monitoring wells are outlined in Table below.

Table 4: Groundwater gradients

Borehole	Location
MW2D	Up gradient of proposed landfill
MW2S	Up gradient
MW4D	Up gradient
MW4S	Up gradient
MW11D	Down gradient
MW11S	Down gradient
MW12D-A	Down gradient
MW12S-A	Down gradient
MW13S	Down gradient
MW13 D	Down Gradient
MW14D	Down gradient
MW15S	Down gradient
MW15D	Down gradient
MW16S	Down gradient
MW16D	Down gradient

Ground water levels are displayed in table 5.

The quality of ground water in these wells, as sampled on an annual basis, in accordance with W0161-01, is shown in Table 6. The results of the bacteriological analysis of ground water wells are shown in Table 7.

Table 5: Groundwater Levels (23/5/2012)

Point	Depth (M)
MW2S	3.54
MW2D	2.00
MW4S	1.02
MW4D	2.00
MW11S	2.63
MW11D	0.87
MW12S	1.10
MW12D	21.0
MW13S	DRY
MW13D	18.80
MW14S	DRY
MW14D	10.82
MW15S	4.15
MW15D	0.9
MW16S	DRY
MW16D	18.0

All measurements in metres below ground level

Table 6: Groundwater Results 2012

Dates		23/5/2012					
Parameters	Temp	Do	рН	Conductivity Chlorides		NH4	TOC
	(°C)	mg/l		uS/cm	mg/l	mg/IN	mg/l
MW2S	11.10	10.22	6	61.90	18.00	<0.05	0
MW2D	11.90	10.35	7.7	134.2	16.5	<0.05	0
MW4S	14.30	11.24	6.8	63.80	21.00	<0.05	2.3
MW4D	9.90	11.58	6.7	102.5	18	<0.05	0.7
MW11S	9.10	11.76	6.7	162.10	15.00	<0.05	1.3
MW11D	11.50	10.14	6.7	106.5	21	<0.05	2.6
MW12SA	10.00	10.64	6.5	102.00	23.00	<0.05	5.8
MW12DA	9.50	10.44	6.5	80.2	23	<0.05	1.8
MW13S	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW13D	11.50	10.31	6.4	66.4	13	<0.05	5.8
MW14S	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW14D	10.00	10.41	6.3	72.6	15	<0.05	1.8
MW15S	10.00	9.71	6.2	98.7	38	<0.05	3.3
MW15D	8.80	10.74	6.3	150.4	18	<0.05	2.9
MW16S	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW16D	8.90	8.94	5.5	79	15.5	<0.05	2.7

Table 7: Groundwater Bacteria Results

	Date 4/9	9/2012
Parameter	Total Coliforms (mpn/ml)	Faecal Coliforms (mpn/ml)
MW2S	<3	<3
MW2D	<3	<3
MW4S	<3	<3
MW4D	<3	<3
MW11S	<3	<3
MW11D	<3	<3
MW12S-A	<3	<3
MW12D-A	<3	<3
MW13S	Dry	
MW13D	<3	<3
MW14S	Dry	
MW14D	<3	<3
MW15S	<3	<3
MW15D	<3	<3
MW16S	<3	<3
MW16D	<3	<3
BWHS01	<3	<3
BWHS02	<3	<3

No Faecal Coliforms were present at private well s BHWS01 and BWHS02.

3.3.2 Interpretation of Results

The groundwater results have been compared with the Interim Guideline Values (IGV) as set out in the EPA report "Towards Setting Guideline Values for the Protection of Groundwater in Ireland, Interim Report.

(1) pH

Many of the pH levels at all sample locations and for each sampling event are low. They are in many cases below the Parametric Value as per Drinking Water Regulations 2000 however it should be noted that these sampling points are not for human consumption. These values are baseline values and are naturally derived, typical of Devonian Sandstone Waters, as reported in the baseline investigations for the EIS.

(2)Conductivity

Conductivity levels measured at a number of monitoring wells inside the landfill perimeter are low. This is a characteristic of the Devonian Sandstone.

(3) Nutrients/ Chlorides

All results for Ammoniacal Nitrogen and Chloride were below their specific IGV limits in the EPA Interim Report.

(4)Metals

The majority of metals (iron, manganese, boron, cadmium, copper, lead, magnesium, mercury, potassium and sodium) were within the limits set down in the EPA interim reports for EQS for Surface Waters. Ground water well 11D result (3.92 mg/l) exceeded the limit of 0.2 mg/l for Iron. No groundwater wells exceeded limits for total cyanide and total chromium at all ground water wells. Exceedance in iron and manganese is attributed to the geology of the area.

(5)Microbiology

The majority of groundwater wells did not exceed the total and faecal coliforms limits of (0/100ml of sample). Groundwater well 15S total coliforms result (21/100ml of sample) exceeded the limit. No faecal coliforms were detected in the sample. Total Coliforms are naturally occurring bacteria. The presence of total Coliforms in a well does not necessarily indicate fouling of a borehole. Total Coliforms can be present due to normal conditions, where a well is not regularly disinfected. The levels of total coliforms are very low in this case.

3.3.3 Interpretation of Annual List I/II Results

No exceedences were detected in Volatile Organic Carbons, Semi Volatile Organic Carbons. All results were below the limit of detection for groundwater wells.

3.3.4 Interpretation of private ground water Results

No exceedences were detected in (iron, manganese, boron, cadmium, copper, lead, magnesium, mercury, potassium and sodium) under the EPA EQS limits. Total and faecal coliforms were below the limit of detection of both wells. The householders were sent results for 2012 monitoring.

4.0 DEVELOPMENT WORKS.

4.1 Construction/Development 2012

No further development works took place during 2012.

5.0 ENVIRONMENTAL INCIDENTS, NON-COMPLIANCES AND COMPLAINTS

5.1 Incidents

No incidents occurred during the reporting period

5.2 Non-Compliances

No non-compliances were issued by the Environmental Protection Agency during the reporting period.

5.3 Complaints

No Complaints were received during the reporting period.

6.0 ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

6.1 Management and Staffing Structure of the Facility.

As the facility is not yet operational, no further operational staffs were allocated to the facility. The Facility Manager, and/or Deputy Facility Manager are periodically present on site during working hours. Managerial staff for the facility is shown in Table 14 below.

Table 8: Managerial Staff

Position	Employee Contact Details
	Cork County Council,
Director of Services,	Environment Dept
Environment	Inniscarra, Co. Cork.
Ms. Sharon Corcoran.	Telephone No: 021-4532600
	Fax No: 021-4285118
	Cork County Council,
Senior Engineer,	Waste & Energy Services
Environment	Inniscarra, Co. Cork.
Mr. Liam Singleton.	Telephone No: 021-4285286
	Fax No: 021-4285118
	Cork County Council,
A/Senior Executive Engineer,	Bottlehill Landfill, Burnfort,
Facility Manager,	Mallow, Co. Cork.
Mr. Niall O Callaghan.	Tel: 022-58100, Fax: 022-58116
	Mobile No. 086-1716043
	Cork County Council,
Environmental Technician,	Bottlehill Landfill, Burnfort,
Facility Scientist	Mallow, Co. Cork.
Marie Mortell.	Tel: 022-58100, Fax: 022-58116
	Mobile No. 086-6039755

6.2 Financial Provision

Cork County Council has the ability to meet any financial commitments or liabilities incurred by the carrying out of the disposal activities relating to Bottlehill Landfill. These commitments include compliance with the Waste Management Licence (No.W0161-02) and restoration and aftercare of the site as specified in Condition 4 of the licence.

Under Section 38 of the Waste Management Act, 1996 to 2003, Cork County Council "shall provide and operate, or arrange for, such facilities as may be necessary for the recovery and disposal of household waste arising within the functional area". Compliance with Section 38 and all other relevant sections of the Waste Management Act, 1996 to 2003 is a statutory obligation of Cork County Council. Cork County Council annually, in the preparation of the Book of Estimates' and the passing of these estimates, shall make provision for any capital works and maintenance works required to fulfil conditions of the waste licence for Bottlehill Landfill.

6.3 Environmental Monitoring Committee.

The number of Environmental Committee meetings were reduced in 2012, by agreement of all those on the Environmental Committee. A meeting will be held in 2013 to update the committee on any licence changes.

6.4 Annual Fund for Local Environment.

As per condition 12.4 of the Waste Licence, a fund will be provided for local environmental and community initiatives from the date of commencement of waste disposal. The facility is currently non operational so no fund has been made available thus far. The committee is presently preparing a set of application forms and guidelines which will evaluate any proposal which will be received in relation to the environmental fund. The fund is set at the annual amount of €150,000 during each year the facility accepts waste. This fund is index linked from June 2004.

Appendix 1

Table 9: Laboratory Codes for Annual Sampling

Laboratory Code
B470/12
B471/12
B468/12
B469/12
B472/12
B473/12
B474/12
B475/12
DRY
B477/12
DRY
B479/12
B480/12
B481/12
B482/12
B483/12
B478/12
B476/12

60211 - 1

60211/001

05/09/2012 05/09/2012

17/09/2012

Ground Waters

Hand

Good





ENVIRONMENTAL LABORATORY SERVICES

Acom Business Campus Mahon Industrial Park, Blackrock, Cork

Ireland Tel: +353 21 453 6141

Fax: +353 21 453 6149 www.irishwatertesting.com



Contact Name Marie Mortell Address

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill, 022-58102

Tel No Fax No

Customer PO

1035938

Quotation No QN001139 **Customer Ref** B468/12

Report Number Sample Number Date of Receipt Date Started

Received or Collected Condition on Receipt **Date of Report** Sample Type

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1								
Nitrate (as N)		EW154M	0.120		0.12	mg/l N	INAB	
Nitrite (as N)		EW154M	0.013		<0.013	mg/l N	INAB	
TON (as N)(Cale)		EW154M	0.138		<0.138	mg/l N	INAB	
Phosphate-Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2								
Sulphate		EW154M-1	1.000		3.5	mg/L	INAB	
Ion Chromatography								
Fluoride		EW137	0.10		<0.10	mg/L	INAB	
Metals-Dissolved								
Iron-Dissolved		EM130	20.0		50.2	ug/L	INAB	
Manganese-Dissolved		EM130	1.0		22.3	ug/L	INAB	
Boron-Dissolved		EM130	0.02		<0.02	mg/L	INAB	
Cadmium-Dissolved		EM130	0.1		<0.1	ug/L	INAB	
Calcium-Dissolved		EM130	1.0		<1.0	mg/L	INAB	
Copper-Dissolved		EM130	0.003		<0.003	mg/L	INAB	
Lead-Dissolved		EM130	0.3		0.3	ug/L	INAB	
Magnesium-Dissolved		EM130	0.3		1.2	mg/L	INAB	
Nickel-Dissolved		EM130	0.5		1.1	ug/L	INAB	
Zinc-Dissolved		EM130	1.0		12.0	ug/L	INAB	
Mercury-Dissolved		EM130	0.02		0.03	ug/L	INAB	
Potassium-Dissolved		EM130	0.2		1.5	mg/L	INAB	
Sodium-Dissolved		EM130	0.5		8.6	mg/L	INAB	
Metals-Total								
Chromium-Total		EM130	1.0		7.0	ug/L		
Micro -Total & Faecal (Sub 1)								
Total Coliforms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coliforms	*	Default	3		<3	MPN/100ml		
Titralab								
Alkalinity Total (R2 pH4.5)		EW153	10.000		<10.0	mg/L CaCO3	INAB	
Total Cyanide High (Sub)								
Total Cyanide High	*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS)								
Total Dissolved Solids (TDS)		EW046	15		38	mg/L	INAB	
						_		

Total Phosphorus-TP

Frencan 1

Technical Manager (or Deputy): **Brendan Murray**

NOTES

Signed:

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- 2.SPEC= Allowable limit or parametric value
- 3.OOS=Result which is outside specification highlighted as OOS
- 4.LOQ=Limit of Quantification or lowest value that can be reported for the test
- 5.ACCRED=Indicates matrix accreditation for the test,a blank field indicates not accredited

Page 1 of 11

17/09/2012



Customer Ref

B468/12



ENVIRONMENTAL LABORATORY SERVICES Acom Business Campus Mahon Industrial Park,

Blackrock, Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149 www.irishwatertesting.com



Contact Name Marie Mortell Report Number 60211 - 1 Cork CC(Landfill Bottle Hill) Sample Number 60211/001 Address Date of Receipt Bottlehill Landfill, 05/09/2012 Bottlehill, 05/09/2012 Date Started 022-58102 Tel No Received or Collected Hand Condition on Receipt Good Fax No Customer PO 1035938 Date of Report 17/09/2012 QN001139 **Ground Waters Quotation No** Sample Type

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
Total Ph	osphorus-TP								
Total P	hosphorus-TP		EW146	0.01		0.38	mg/l P	INAB	

Signed:

Technical Manager (or Deputy):

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Page 2 of 11

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17/09/2012

Page 20 Cork County Council



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B469/12



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Contact Name Address	Marie Mortell Cork CC(Landfill Bottle Hill) Bottlehill Landfill, Bottlehill,	Report Number Sample Number Date of Receipt Date Started	60211 - 1 60211/002 05/09/2012 05/09/2012
Tel No Fax No Customer PO Quotation No	022-58102 1035938 QN001139	Received or Collected Condition on Receipt Date of Report Sample Type	Hand Good 17/09/2012 Ground Waters

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1								
Nitrate (as N)		EW154M	0.120		0.43	mg/1 N	INAB	
Nitrite (as N)		EW154M	0.013		<0.013	mg/1 N	INAB	
TON (as N)(Calc)		EW154M	0.138		0.434	mg/1 N	INAB	
Phosphate-Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2								
Sulphate		EW154M-1	1.000		3.5	mg/L	INAB	
Ion Chromatography								
Fluoride		EW137	0.10		<0.10	mg/L	INAB	
Metals-Dissolved								
Iron-Dissolved		EM130	20.0		<20.0	ug/L	INAB	
Manganese-Dissolved		EM130	1.0		1.2	ug/L	INAB	
Boron-Dissolved		EM130	0.02		<0.02	mg/L	INAB	
Cadmium-Dissolved		EM130	0.1		<0.1	ug/L	INAB	
Calcium-Dissolved		EM130	1.0		12.0	mg/L	INAB	
Copper-Dissolved		EM130	0.003		<0.003	mg/L	INAB	
Lead-Dissolved		EM130	0.3		<0.3	ug/L	INAB	
Magnesium-Dissolved		EM130	0.3		2.2	mg/L	INAB	
Nickel-Dissolved		EM130	0.5		0.6	ug/L	INAB	
Zinc-Dissolved		EM130	1.0		8.8	ug/L	INAB	
Mercury-Dissolved		EM130	0.02		<0.02	ug/L	INAB	
Potassium-Dissolved		EM130	0.2		1.6	mg/L	INAB	
Sodium-Dissolved		EM130	0.5		8.2	mg/L	INAB	
Metals-Total								
Chromium-Total		EM130	1.0		1.2	ug/L		
Micro -Total & Faecal (Sub 1)								
Total Coliforms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coliforms	*	Default	3		<3	MPN/100ml		
Titralab								
Alkalinity Total (R2 pH4.5)		EW153	10.000		37.8	mg/L CaCO3	INAB	
Total Cyanide High (Sub)								
Total Cyanide High	*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS)								
Total Dissolved Solids (TDS)		EW046	15		63	mg/L	INAB	
Total Phosphorus-TP								
Total Phosphorus-TP		EW146	0.01		0.68	mg/l P	INAB	
- viii - avopaveto		2	0.01		0.00		2012	

Signed:

17/09/2012

Technical Manager (or Deputy): Brendan Murray

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Page 3 of 11



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Ireland

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Marie Mortell Report Number 60211 - 1 **Contact Name** Cork CC(Landfill Bottle Hill) 60211/003 Sample Number Address Bottlehill Landfill, Date of Receipt 05/09/2012 05/09/2012 Bottlehill, Date Started 022-58102 Hand Tel No Received or Collected Good Fax No Condition on Receipt 17/09/2012 **Customer PO** 1035938 **Date of Report Quotation No** QN001139 Sample Type **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1									
Nitrate (as	N)		EW154M	0.120		0.41	mg/l N	INAB	
Nitrite (as l	N)		EW154M	0.013		<0.013	mg/l N	INAB	
TON (as N)(Cale)		EW154M	0.138		0.408	mg/lN	INAB	
Phosphate-	Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2									
Sulphate			EW154M-1	1.000		7.6	mg/L	INAB	
Ion Chroma	atography								
Fluoride			EW137	0.10		<0.10	mg/L	INAB	
Metals-Diss	olved								
Iron-Disso	lved		EM130	20.0		37.6	ug/L	INAB	
Manganese	-Dissolved		EM130	1.0		42.8	ug/L	INAB	
Boron-Diss			EM130	0.02		<0.02	mg/L	INAB	
Cadmium-	Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-D	issolved		EM130	1.0		4.1	mg/L	INAB	
Copper-Di	ssolved		EM130	0.003		< 0.003	mg/L	INAB	
Lead-Disso	olved		EM130	0.3		0.3	ug/L	INAB	
Magnesiun	n-Dissolved		EM130	0.3		0.9	mg/L	INAB	
Nickel-Dis	solved		EM130	0.5		0.8	ug/L	INAB	
Zinc-Disso	lved		EM130	1.0		10.4	ug/L	INAB	
Mercury-D	issolved		EM130	0.02		<0.02	ug/L	INAB	
Potassium-	Dissolved		EM130	0.2		1.7	mg/L	INAB	
Sodium-Di	ssolved		EM130	0.5		10.4	mg/L	INAB	
Metals-Tota	al								
Chromium	-Total		EM130	1.0		2.7	ug/L		
Micro -Tota	al & Faecal (Sub 1)								
	orms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coli	forms	*	Default	3		<3	MPN/100ml		
Titralab									
Alkalinity	Total (R2 pH4.5)		EW153	10.000		15.2	mg/L CaCO3	INAB	
Total Cyan	ide High (Sub)								
Total Cyan		*	Default	10.00		<10.00	ug/L	YES	
Total Disso	lved Solids (TDS)								
	olved Solids (TDS)		EW046	15		57	mg/L	INAB	
Total Phosp									
Total Phos			EW146	0.01		0.03	mg/l P	INAB	

Signed: _______17/09/2012

Technical Manager (or Deputy):

Brendan Murray

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Page 4 of 11





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Contact Name	Marie Mortell	Report Number	60211 - 1
Address	Cork CC(Landfill Bottle Hill)	Sample Number	60211/004
	Bottlehill Landfill,	Date of Receipt	05/09/2012
	Bottlehill,	Date Started	05/09/2012
Tel No	022-58102	Received or Collected	Hand
Fax No		Condition on Receipt	Good
Customer PO	1035938	Date of Report	17/09/2012
Quotation No	QN001139	Sample Type	Ground Waters
Customer Ref	B471/12		

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1									
Nitrate (as	N)		EW154M	0.120		0.24	mg/1N	INAB	
Nitrite (as	N)		EW154M	0.013		<0.013	mg/l N	INAB	
TON (as N	I)(Cale)		EW154M	0.138		0.244	mg/l N	INAB	
Phosphate	-Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2									
Sulphate			EW154M-1	1.000		2.7	mg/L	INAB	
Ion Chrom	atography								
Fluoride			EW137	0.10		<0.10	mg/L	INAB	
Metals-Dis	solved						-		
Iron-Disso	lved		EM130	20.0		<20.0	ug/L	INAB	
Manganes	e-Dissolved		EM130	1.0		5.1	ug/L	INAB	
Boron-Dis			EM130	0.02		<0.02	mg/L	INAB	
Cadmium-	Dissolved		EM130	0.1		<0.1	ug/L	INAB	
Calcium-I	Dissolved		EM130	1.0		16.4	mg/L	INAB	
Copper-Di	ssolved		EM130	0.003		<0.003	mg/L	INAB	
Lead-Diss	olved		EM130	0.3		<0.3	ug/L	INAB	
Magnesiu	n-Dissolved		EM130	0.3		2.9	mg/L	INAB	
Nickel-Di	ssolved		EM130	0.5		0.6	ug/L	INAB	
Zinc-Disso	olved		EM130	1.0		15.1	ug/L	INAB	
Mercury-I	Dissolved		EM130	0.02		<0.02	ug/L	INAB	
Potassium	-Dissolved		EM130	0.2		2.0	mg/L	INAB	
Sodium-D	issolved		EM130	0.5		8.3	mg/L	INAB	
Metals-Tot	al								
Chromium	ı-Total		EM130	1.0		1.2	ug/L		
Micro -Tot	al & Faecal (Sub 1)								
	forms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal col	iforms	*	Default	3		<3	MPN/100ml		
Titralab									
Alkalinity	Total (R2 pH4.5)		EW153	10.000		73.3	mg/L CaCO3	INAB	
Total Cyan	ide High (Sub)								
Total Cyan		*	Default	10.00		<10.00	ug/L	YES	
	lved Solids (TDS)								
	olved Solids (TDS)		EW046	15		97	mg/L	INAB	
Total Phos	. ,		2					21.12	
	phorus-TP		EW146	0.01		0.06	mg/l P	INAB	
Total Filos	photo-11		EW140	0.01		0.00	mg/1F	INAD	

Signed: ______ 17/09/2012

Technical Manager (or Deputy): Brendan Murray

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Page 5 of 11

60211 - 1

60211/005

05/09/2012

05/09/2012





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Contact Name Marie Mortell
Address Marie Mortell
Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill, 022-58102

Tel No Fax No

 Customer PO
 1035938

 Quotation No
 QN001139

 Customer Ref
 B472/12

Report Number Sample Number Date of Receipt Date Started Received or Collected

Received or Collected Hand
Condition on Receipt Good
Date of Report 17/09/2012
Sample Type Ground Waters

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1									
Nitrate (as	; N)		EW154M	0.120		<0.12	mg/l N	INAB	
Nitrite (as	N)		EW154M	0.013		< 0.013	mg/l N	INAB	
TON (as 1	N)(Cale)		EW154M	0.138		<0.138	mg/l N	INAB	
Phosphate	-Ortho(as P)		EW154M	0.009		0.047	mg/l P	INAB	
AQ2-UP2									
Sulphate			EW154M-1	1.000		4.2	mg/L	INAB	
Ion Chrom	atography								
Fluoride	and a second		EW137	0.10		<0.10	mg/L	INAB	
Metals-Dis	solved						_		
Iron-Disso	olved		EM130	20.0		134.3	ug/L	INAB	
Manganes	e-Dissolved		EM130	1.0		557.4	ug/L	INAB	
Boron-Dis	solved		EM130	0.02		<0.02	mg/L	INAB	
Cadmium	-Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-I	Dissolved		EM130	1.0		10.8	mg/L	INAB	
Copper-D	issolved		EM130	0.003		<0.003	mg/L	INAB	
Lead-Diss	olved		EM130	0.3		<0.3	ug/L	INAB	
Magnesiu	m-Dissolved		EM130	0.3		6.6	mg/L	INAB	
Nickel-Di	ssolved		EM130	0.5		6.4	ug/L	INAB	
Zinc-Diss	olved		EM130	1.0		8.3	ug/L	INAB	
Mercury-l	Dissolved		EM130	0.02		<0.02	ug/L	INAB	
Potassium	-Dissolved		EM130	0.2		2.6	mg/L	INAB	
Sodium-D	issolved		EM130	0.5		11.8	mg/L	INAB	
Metals-Tot	tal								
Chromiun	a-Total		EM130	1.0		1.0	ug/L		
Micro -Tot	al & Faecal (Sub 1)								
Total Coli	forms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal col	iforms	*	Default	3		<3	MPN/100ml		
Titralab									
Alkalinity	Total (R2 pH4.5)		EW153	10.000		53.4	mg/L CaCO3	INAB	
Total Cvar	nide High (Sub)								
Total Cya		*	Default	10.00		<10.00	ug/L	YES	
Total Disso	olved Solids (TDS)								
	solved Solids (TDS)		EW046	15		128	mg/L	INAB	
Total Phos									
	sphorus-TP		EW146	0.01		2.92	mg/l P	INAB	
201111110			2	2.01		2.72			

Signed:

17/09/2012

Technical Manager (or Deputy):

Brendan Murray

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Page 6 of 11



Customer PO

Quotation No

Customer Ref

1035938

B473/12

QN001139



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Report Number Marie Mortell 60211 - 1 **Contact Name** 60211/006 Address Cork CC(Landfill Bottle Hill) Sample Number Bottlehill Landfill, Date of Receipt 05/09/2012 05/09/2012 Bottlehill, Date Started 022-58102 Hand Tel No Received or Collected Fax No

Condition on Receipt Good
Date of Report 17/09/2012
Sample Type Ground Waters

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	008
AQ2-UP1								
Nitrate (as N)		EW154M	0.120		<0.12	mg/l N	INAB	
Nitrite (as N)		EW154M	0.013		< 0.013	mg/l N	INAB	
TON (as N)(Calc)		EW154M	0.138		<0.138	mg/l N	INAB	
Phosphate-Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2								
Sulphate		EW154M-1	1.000		8.0	mg/L	INAB	
Ion Chromatography								
Fluoride		EW137	0.10		<0.10	mg/L	INAB	
Metals-Dissolved								
Iron-Dissolved		EM130	20.0		3921.4	ug/L	INAB	
Manganese-Dissolved		EM130	1.0		139.2	ug/L	INAB	
Boron-Dissolved		EM130	0.02		<0.02	mg/L	INAB	
Cadmium-Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-Dissolved		EM130	1.0		3.1	mg/L	INAB	
Copper-Dissolved		EM130	0.003		< 0.003	mg/L	INAB	
Lead-Dissolved		EM130	0.3		<0.3	ug/L	INAB	
Magnesium-Dissolved		EM130	0.3		2.3	mg/L	INAB	
Nickel-Dissolved		EM130	0.5		2.1	ug/L	INAB	
Zinc-Dissolved		EM130	1.0		6.9	ug/L	INAB	
Mercury-Dissolved		EM130	0.02		<0.02	ug/L	INAB	
Potassium-Dissolved		EM130	0.2		2.1	mg/L	INAB	
Sodium-Dissolved		EM130	0.5		11.4	mg/L	INAB	
Metals-Total								
Chromium-Total		EM130	1.0		8.1	ug/L		
Micro -Total & Faecal (Sub 1)								
Total Coliforms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coliforms	*	Default	3		<3	MPN/100ml		
Titralab								
Alkalinity Total (R2 pH4.5)		EW153	10.000		18.6	mg/L CaCO3	INAB	
Total Cyanide High (Sub)								
Total Cyanide High	*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS)								
Total Dissolved Solids (TDS)		EW046	15		66	mg/L	INAB	
Total Phosphorus-TP								
Total Phosphorus-TP		EW146	0.01		0.17	mg/l P	INAB	

Signed:

17/09/2012

Technical Manager (or Deputy):

Brendan Murray

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Marie Mortell **Contact Name** Report Number 60211 - 1 60211/007 Address Cork CC(Landfill Bottle Hill) Sample Number Bottlehill Landfill, Date of Receipt 05/09/2012 05/09/2012 Bottlehill, Date Started 022-58102 Hand Tel No Received or Collected Good Fax No **Condition on Receipt Customer PO** 1035938 Date of Report 17/09/2012 QN001139 Sample Type **Ground Waters** Quotation No B474/12

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1									
Nitrate (a	is N)		EW154M	0.120		0.13	mg/l N	INAB	
Nitrite (a	s N)		EW154M	0.013		<0.013	mg/lN	INAB	
TON (as	N)(Cale)		EW154M	0.138		<0.138	mg/l N	INAB	
Phosphat	e-Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2									
Sulphate			EW154M-1	1.000		5.4	mg/L	INAB	
Ion Chron	natography								
Fluoride	,		EW137	0.10		<0.10	mg/L	INAB	
Metals-Di	ssolved								
Iron-Diss	olved		EM130	20.0		48.5	ug/L	INAB	
Mangane	se-Dissolved		EM130	1.0		7.5	ug/L	INAB	
Boron-Di	issolved		EM130	0.02		<0.02	mg/L	INAB	
Cadmiun	n-Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-	Dissolved		EM130	1.0		7.9	mg/L	INAB	
Copper-I	Dissolved		EM130	0.003		< 0.003	mg/L	INAB	
Lead-Dis	solved		EM130	0.3		<0.3	ug/L	INAB	
Magnesia	ım-Dissolved		EM130	0.3		1.5	mg/L	INAB	
Nickel-D	issolved		EM130	0.5		1.0	ug/L	INAB	
Zinc-Dis	solved		EM130	1.0		7.6	ug/L	INAB	
Mercury-	Dissolved		EM130	0.02		<0.02	ug/L	INAB	
	n-Dissolved		EM130	0.2		1.7	mg/L	INAB	
Sodium-l	Dissolved		EM130	0.5		11.8	mg/L	INAB	
Metals-To	tal								
Chromiu	m-Total		EM130	1.0		6.1	ug/L		
Micro -To	tal & Faecal (Sub 1)								
Total Col	liforms (Coliform Count)	*	Default	3		9	MPN/100ml		
Faecal co	liforms	*	Default	3		<3	MPN/100ml		
Γitralab									
Alkalinit	y Total (R2 pH4.5)		EW153	10.000		23.4	mg/L CaCO3	INAB	
Total Cya	nide High (Sub)								
Total Cy	anide High	*	Default	10.00		<10.00	ug/L	YES	
Γotal Diss	olved Solids (TDS)								
	solved Solids (TDS)		EW046	15		99	mg/L	INAB	
Total Pho	sphorus-TP								
	osphorus-TP		EW146	0.01		0.03	mg/l P	INAB	
	•						2		

Signed:

Brendan Murray Technical Manager (or Deputy):

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17/09/2012

Customer Ref



B475/12



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60211 - 1 Contact Name Report Number 60211/008 Cork CC(Landfill Bottle Hill) Sample Number Address Bottlehill Landfill, **Date of Receipt** 05/09/2012 Bottlehill, Date Started 05/09/2012 022-58102 Hand Tel No Received or Collected Fax No **Condition on Receipt** Good Date of Report Customer PO 1035938 17/09/2012 QN001139 **Ground Waters** Quotation No Sample Type

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1									
Nitrate (as	N)		EW154M	0.120		0.23	mg/l N	INAB	
Nitrite (as	N)		EW154M	0.013		<0.013	mg/l N	INAB	
TON (as N	(Calc)		EW154M	0.138		0.230	mg/l N	INAB	
Phosphate	Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2									
Sulphate			EW154M-1	1.000		3.1	mg/L	INAB	
Ion Chrom	atography								
Fluoride			EW137	0.10		<0.10	mg/L	INAB	
Metals-Dis	solved								
Iron-Disso	lved		EM130	20.0		<20.0	ug/L	INAB	
Manganes	e-Dissolved		EM130	1.0		27.4	ug/L	INAB	
Boron-Dis	solved		EM130	0.02		<0.02	mg/L	INAB	
Cadmium-	Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-E	issolved		EM130	1.0		<1.0	mg/L	INAB	
Copper-Di	ssolved		EM130	0.003		<0.003	mg/L	INAB	
Lead-Diss	olved		EM130	0.3		<0.3	ug/L	INAB	
Magnesiur	n-Dissolved		EM130	0.3		1.7	mg/L	INAB	
Nickel-Dis	solved		EM130	0.5		2.6	ug/L	INAB	
Zinc-Disso	lved		EM130	1.0		7.7	ug/L	INAB	
Mercury-I	Dissolved		EM130	0.02		<0.02	ug/L	INAB	
Potassium	-Dissolved		EM130	0.2		1.6	mg/L	INAB	
Sodium-D	issolved		EM130	0.5		11.6	mg/L	INAB	
Metals-Tot	al								
Chromium	-Total		EM130	1.0		2.6	ug/L		
Micro -Tot	al & Faecal (Sub 1)								
	forms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coli	forms	*	Default	3		<3	MPN/100ml		
Titralab									
	Total (R2 pH4.5)		EW153	10.000		13.2	mg/L CaCO3	INAB	
Total Cyan	ide High (Sub)								
Total Cyar		*	Default	10.00		<10.00	ug/L	YES	
	lved Solids (TDS)								
	olved Solids (TDS)		EW046	15		56	mg/L	INAB	
Total Phos									
Total Phos			EW146	0.01		0.06	mg/l P	INAB	
201112 1103			2	v.v.		0.00			

Signed: ______ 17/09/2012

Technical Manager (or Deputy): Brendan Murray

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Ground Waters



Quotation No

Customer Ref

QN001139

B480/12



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Contact Name Marie Mortell Report Number 60211 - 1 Cork CC(Landfill Bottle Hill) Sample Number 60211/009 Address Bottlehill Landfill, Date of Receipt 05/09/2012 Bottlehill, 05/09/2012 Date Started 022-58102 Received or Collected Hand Tel No Good **Condition on Receipt** Fax No 17/09/2012 1035938 Customer PO Date of Report

CERTIFICATE OF ANALYSIS

Sample Type

	CERTIFICATE OF ANALYSIS										
TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos		
AQ2-UP1											
Nitrate (as N)		EW154M	0.120		<0.12	mg/l N	INAB			
Nitrite (a	ıs N)		EW154M	0.013		< 0.013	mg/l N	INAB			
TON (as	N)(Cale)		EW154M	0.138		<0.138	mg/l N	INAB			
Phosphat	te-Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB			
AQ2-UP2											
Sulphate			EW154M-1	1.000		1.6	mg/L	INAB			
Ion Chron	natography										
Fluoride			EW137	0.10		<0.10	mg/L	INAB			
Metals-Di	ssolved										
Iron-Dis	solved		EM130	20.0		420.3	ug/L	INAB			
Mangane	ese-Dissolved		EM130	1.0		451.4	ug/L	INAB			
Boron-D	issolved		EM130	0.02		<0.02	mg/L	INAB			
Cadmiur	n-Dissolved		EM130	0.1		0.2	ug/L	INAB			
Calcium	-Dissolved		EM130	1.0		2.6	mg/L	INAB			
Copper-I	Dissolved		EM130	0.003		< 0.003	mg/L	INAB			
Lead-Dis	ssolved		EM130	0.3		0.5	ug/L	INAB			
Magnesi	um-Dissolved		EM130	0.3		4.0	mg/L	INAB			
Nickel-D	Dissolved		EM130	0.5		4.8	ug/L	INAB			
Zinc-Dis	solved		EM130	1.0		13.2	ug/L	INAB			
Mercury	-Dissolved		EM130	0.02		<0.02	ug/L	INAB			
Potassiu	m-Dissolved		EM130	0.2		1.9	mg/L	INAB			
Sodium-	Dissolved		EM130	0.5		8.8	mg/L	INAB			
Metals-To	otal										
Chromiu	m-Total		EM130	1.0		<1.0	ug/L				
Micro -To	otal & Faecal (Sub 1)										
	liforms (Coliform Count)	*	Default	3		21	MPN/100ml				
Faecal co	,	*	Default	3		⊲3	MPN/100ml				
Titralab											
	v Total (R2 pH4.5)		EW153	10.000		27.2	mg/L CaCO3	INAB			
	nide High (Sub)										
	anide High	*	Default	10.00		<10.00	ug/L	YES			
	olved Solids (TDS)										
	solved Solids (TDS)		EW046	15		51	mg/L	INAB			
			EW040	.,		51	mg/L	INAD			
	sphorus-TP		D1171.46	0.01		0.02	1 D	DIAD			
Lotal Ph	osphorus-TP		EW146	0.01		0.03	mg/l P	INAB			

Signed:

Technical Manager (or Deputy):

17/09/2012 Brendan Murray

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Customer Ref

B481/12



ENVIRONMENTAL LABORATORY SERVICES Acorn Business Campus Mahon Industrial Park,

Blackrock, Cork Ireland Tel: +353 21 453 6141

Fax: +353 21 453 6149 www.irishwatertesting.com



Contact Name Address	Marie Mortell Cork CC(Landfill Bottle Hill) Bottlehill Landfill, Bottlehill,	Report Number Sample Number Date of Receipt Date Started	60211 - 1 60211/010 05/09/2012 05/09/2012
Tel No Fax No Customer PO Quotation No	022-58102 1035938 QN001139	Received or Collected Condition on Receipt Date of Report Sample Type	Hand Good 17/09/2012 Ground Waters

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	OC
AQ2-UP1								
Nitrate (as N)		EW154M	0.120		<0.12	mg/l N	INAB	
Nitrite (as N)		EW154M	0.013		< 0.013	mg/l N	INAB	
TON (as N)(Cale)		EW154M	0.138		<0.138	mg/l N	INAB	
Phosphate-Ortho(as P)		EW154M	0.009		0.027	mg/l P	INAB	
AO2-UP2								
Sulphate		EW154M-1	1.000		7.4	mg/L	INAB	
Ion Chromatography								
Fluoride		EW137	0.10		<0.10	mg/L	INAB	
Metals-Dissolved								
Iron-Dissolved		EM130	20.0		80.6	ug/L	INAB	
Manganese-Dissolved		EM130	1.0		54.4	ug/L	INAB	
Boron-Dissolved		EM130	0.02		<0.02	mg/L	INAB	
Cadmium-Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-Dissolved		EM130	1.0		6.0	mg/L	INAB	
Copper-Dissolved		EM130	0.003		< 0.003	mg/L	INAB	
Lead-Dissolved		EM130	0.3		<0.3	ug/L	INAB	
Magnesium-Dissolved		EM130	0.3		6.1	mg/L	INAB	
Nickel-Dissolved		EM130	0.5		9.2	ug/L	INAB	
Zinc-Dissolved		EM130	1.0		5.8	ug/L	INAB	
Mercury-Dissolved		EM130	0.02		<0.02	ug/L	INAB	
Potassium-Dissolved		EM130	0.2		2.9	mg/L	INAB	
Sodium-Dissolved		EM130	0.5		13.9	mg/L	INAB	
Metals-Total								
Chromium-Total		EM130	1.0		9.8	ug/L		
Micro -Total & Faecal (Sub 1)								
Total Coliforms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coliforms	*	Default	3		<3	MPN/100ml		
Titralab								
Alkalinity Total (R2 pH4.5)		EW153	10.000		57.3	mg/L CaCO3	INAB	
Total Cyanide High (Sub)								
Total Cyanide High	*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS)								
Total Dissolved Solids (TDS)		EW046	15		84	mg/L	INAB	
Total Phosphorus-TP		211010				mg 2	22	
Total Phosphorus-TP		EW146	0.01		0.15	mg/l P	INAB	
rotarraosphorus-rr		EW140	0.01		0.15	mg/1 F	INAD	

Signed: _

17/09/2012 **Brendan Murray**

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Customer Ref

B482/12



ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park, Blackrock, Cork Ireland Tel: +353 21 453 6141

Fax: +353 21 453 6149 www.irishwatertesting.com



Contact Name	Marie Mortell	Report Number	60251 - 1
Address	Cork CC(Landfill Bottle Hill)	Sample Number	60251/001
	Bottlehill Landfill,	Date of Receipt	06/09/2012
	Bottlehill,	Date Started	06/09/2012
Tel No	022-58102	Received or Collected	Hand
Fax No		Condition on Receipt	Good
Customer PO	1035938	Date of Report	21/09/2012
Quotation No	QN001139	Sample Type	Ground Waters
	D 400/40		

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1								
Nitrate (as N)		EW154M	0.120		<0.12	mg/l N	INAB	
Nitrite (as N)		EW154M	0.013		< 0.013	mg/l N	INAB	
TON (as N)(Calc)		EW154M	0.138		<0.138	mg/l N	INAB	
Phosphate-Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2								
Sulphate		EW154M-1	1.000		3.8	mg/L	INAB	
Ion Chromatography								
Fluoride		EW137	0.10		<0.10	mg/L	INAB	
Metals-Dissolved								
Iron-Dissolved		EM130	20.0		7422.5	ug/L	INAB	
Manganese-Dissolved		EM130	1.0		234.1	ug/L	INAB	
Boron-Dissolved		EM130	0.02		< 0.02	mg/L	INAB	
Cadmium-Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-Dissolved		EM130	1.0		1.9	mg/L	INAB	
Copper-Dissolved		EM130	0.003		< 0.003	mg/L	INAB	
Lead-Dissolved		EM130	0.3		<0.3	ug/L	INAB	
Magnesium-Dissolved		EM130	0.3		2.0	mg/L	INAB	
Nickel-Dissolved		EM130	0.5		2.0	ug/L	INAB	
Zinc-Dissolved		EM130	1.0		14.7	ug/L	INAB	
Mercury-Dissolved		EM130	0.02		0.03	ug/L	INAB	
Potassium-Dissolved		EM130	0.2		1.4	mg/L	INAB	
Sodium-Dissolved		EM130	0.5		7.1	mg/L	INAB	
Metals-Total								
Chromium-Total		EM130	1.0		2.1	ug/L		
Micro -Total & Faecal (Sub 1)								
Total Coliforms (Coliform Count)		Default	3		<3	MPN/100ml		
Faecal coliforms	*	Default	3		<3	MPN/100ml		
Titralab								
Alkalinity Total (R2 pH4.5)		EW153	10.000		26.0	mg/L CaCO3	INAB	
Total Cyanide High (Sub)								
Total Cyanide High	*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS)						_		
Total Dissolved Solids (TDS)		EW046	15		49	mg/L	INAB	

Total Phosphorus-TP

21/09/2012 Signed:

> Technical Manager (or Deputy): **Brendan Murray**

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Page 1 of 7



Quotation No

Customer Ref

QN001139

B482/12



ENVIRONMENTAL LABORATORY SERVICES

Acom Business Campus Mahon Industrial Park, Blackrock, Cork

Ireland Tel: +353 21 453 6141

Fax: +353 21 453 6149
Web: <u>www.irishwatertesting.com</u>



Ground Waters

Contact Name	Marie Mortell	Report Number	60251 - 1
Address	Cork CC(Landfill Bottle Hill)	Sample Number	60251/001
	Bottlehill Landfill,	Date of Receipt	06/09/2012
	Bottlehill,	Date Started	06/09/2012
Tel No	022-58102	Received or Collected	Hand
Fax No		Condition on Receipt	Good
Customer PO	1035938	Date of Penort	21/09/2012

CERTIFICATE OF ANALYSIS

Sample Type

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	00
Total Pho	osphorus-TP								
Total Ph	noenhorus-TP		FW146	0.01		0.04	mg/I P	INΔB	

Signed: ______ 21/09/2012

Technical Manager (or Deputy): Brendan Murray

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ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park,

Blackrock, Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149 www.irishwatertesting.com



Marie Mortell **Contact Name**

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill. 022-58102

Tel No

Customer Ref

Fax No

Address

Customer PO 1035938 QN001139 **Quotation No** B483/12

Report Number Sample Number **Date of Receipt Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

60251 - 1 60251/002 06/09/2012 06/09/2012

Hand Good 21/09/2012 Ground Waters

CERTIFICATE OF ANALYSIS

Name (as N)	TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
Nittie (as N)	AQ2-UP1								
TON (as N)(Calc)	_		EW154M	0.120		<0.12	mg/l N	INAB	
Phosphate-Ortho(as P)	Nitrite (as N)		EW154M	0.013		0.028	mg/l N	INAB	
Sulplate EW154M-1 1,000 11.2 mg/L INAB INAB INCHOMATOGRAPHY Fluoride EW137 0.10 <0.10 mg/L INAB INAB Metals-Dissolved EM130 20.0 6170.2 ug/L INAB INAB Manganese-Dissolved EM130 1.0 235.7 ug/L INAB INAB Boro-Dissolved EM130 0.02 <0.02 mg/L INAB I	TON (as N)(Calc)		EW154M	0.138		<0.138	mg/l N	INAB	
Sulphate EW154M-1 1.000 11.2 mg/L INAB IOn Chromatography Fluoride EW137 0.10 <0.10 mg/L INAB Metals-Dissolved EM130 20.0 6170.2 ug/L INAB Manganes-Dissolved EM130 1.0 235.7 ug/L INAB Boron-Dissolved EM130 0.02 <0.02 mg/L INAB Boron-Dissolved EM130 0.1 0.1 ug/L INAB Cadmium-Dissolved EM130 0.01 0.1 ug/L INAB Cadmium-Dissolved EM130 0.003 <0.003 mg/L INAB Cadmium-Dissolved EM130 0.003 <0.003 mg/L INAB Copper-Dissolved EM130 0.3 0.5 ug/L INAB Copper-Dissolved EM130 0.3 0.5 ug/L INAB Lead-Dissolved EM130 0.3 0.5 ug/L INAB Magnesium-Dissolved EM130 0.5 3.0 ug/L INAB Nickel-Dissolved EM130 0.5 3.0 ug/L INAB Nickel-Dissolved EM130 0.5 3.0 ug/L INAB Mercury-Dissolved EM130 0.02 0.02 ug/L INAB Mercury-Dissolved EM130 0.02 0.02 ug/L INAB Mercury-Dissolved EM130 0.02 0.02 ug/L INAB Potassium-Dissolved EM130 0.5 8.0 mg/L INAB Mercury-Dissolved EM130 0.5 8.0 mg/L INAB Mercury-Dissolved EM130 0.5 8.0 mg/L INAB Metals-Total	Phosphate-Ortho(as P)		EW154M	0.009		0.071	mg/l P	INAB	
Fluoride	AQ2-UP2								
Fluoride EW137 0.10 c0.10 mg/L DNAB	Sulphate		EW154M-1	1.000		11.2	mg/L	INAB	
Fluoride	Ion Chromatography								
Iron-Dissolved			EW137	0.10		< 0.10	mg/L	INAB	
Manganese-Dissolved	Metals-Dissolved								
Manganese-Dissolved			EM130	20.0		6170.2	ug/L	INAB	
Cadmium-Dissolved	Manganese-Dissolved		EM130	1.0		235.7	-	INAB	
Calcium-Dissolved	Boron-Dissolved		EM130	0.02		< 0.02	mg/L	INAB	
Copper-Dissolved	Cadmium-Dissolved		EM130	0.1		0.1	ug/L	INAB	
Lead-Dissolved	Calcium-Dissolved		EM130	1.0		1.9	mg/L	INAB	
Magnesium-Dissolved EM130 0.3 1.4 mg/L INAB	Copper-Dissolved		EM130	0.003		< 0.003	mg/L	INAB	
Nickel-Dissolved	Lead-Dissolved		EM130	0.3		0.5	ug/L	INAB	
Zinc-Dissolved	Magnesium-Dissolved		EM130	0.3		1.4	mg/L	INAB	
Mercury-Dissolved	Nickel-Dissolved		EM130	0.5		3.0	ug/L	INAB	
Potassium-Dissolved	Zinc-Dissolved		EM130	1.0		14.5	ug/L	INAB	
Sodium-Dissolved	Mercury-Dissolved		EM130	0.02		< 0.02	ug/L	INAB	
Metals-Total Chromium-Total EM130 1.0 10.5 ug/L	Potassium-Dissolved		EM130	0.2		2.3	mg/L	INAB	
Chromium-Total EM130 1.0 10.5 ug/L	Sodium-Dissolved		EM130	0.5		8.0	mg/L	INAB	
Micro - Total & Faecal (Sub 1) Total Coliforms (Coliform Count) * Default 3 3 MPN/100ml Faecal coliforms * Default 3 3 MPN/100ml Faecal coliforms * Default 3 3 MPN/100ml Titralab	Metals-Total								
Total Coliforms (Coliform Count) * Default 3 3 MPN/100ml	Chromium-Total		EM130	1.0		10.5	ug/L		
Faecal coliforms	Micro -Total & Faecal (Sub 1)								
Titralab	Total Coliforms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Alkalinity Total (R2 pH4.5) EW153 10.000 26.3 mg/L CaCO3 INAB Total Cyanide High (Sub) Total Cyanide High * Default 10.00 <10.00 ug/L YES Total Dissolved Solids (TDS) Total Dissolved Solids (TDS) EW046 15 47 mg/L INAB Total Phosphorus-TP	Faecal coliforms	*	Default	3		<3	MPN/100ml		
Total Cyanide High (Sub) Total Cyanide High Default 10.00 <10.00	Titralab								
Total Cyanide High	Alkalinity Total (R2 pH4.5)		EW153	10.000		26.3	mg/L CaCO3	INAB	
Total Cyanide High	Total Cvanide High (Sub)								
Total Dissolved Solids (TDS) EW046 15 47 mg/L INAB Total Phosphorus-TP		*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS) EW046 15 47 mg/L INAB Total Phosphorus-TP	Total Dissolved Solids (TDS)								
Total Phosphorus-TP	` '		EW046	15		47	mg/L	INAB	
•	, ,								
	Total Phosphorus-TP		EW146	0.01		0.58	mg/l P	INAB	

Signed: .

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21/09/2012





ENVIRONMENTAL LABORATORY SERVICES

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Blackrock, Cork Ireland

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Marie Mortell **Contact Name** Address

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill, Bottlehill,

022-58102 Tel No

Fax No

Customer PO 1035938 QN001139 **Quotation No** B479/12 **Customer Ref**

Report Number Sample Number Date of Receipt **Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

60251 - 1 60251/003 06/09/2012 06/09/2012 Hand

Good 21/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1								
Nitrate (as N)		EW154M	0.120		0.74	mg/l N	INAB	
Nitrite (as N)		EW154M	0.013		<0.013	mg/l N	INAB	
TON (as N)(Calc)		EW154M	0.138		0.742	mg/l N	INAB	
Phosphate-Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2								
Sulphate		EW154M-1	1.000		4.4	mg/L	INAB	
Ion Chromatography								
Fluoride		EW137	0.10		< 0.10	mg/L	INAB	
Metals-Dissolved								
Iron-Dissolved		EM130	20.0		<20.0	ug/L	INAB	
Manganese-Dissolved		EM130	1.0		5.2	ug/L	INAB	
Boron-Dissolved		EM130	0.02		< 0.02	mg/L	INAB	
Cadmium-Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-Dissolved		EM130	1.0		1.8	mg/L	INAB	
Copper-Dissolved		EM130	0.003		0.004	mg/L	INAB	
Lead-Dissolved		EM130	0.3		<0.3	ug/L	INAB	
Magnesium-Dissolved		EM130	0.3		1.8	mg/L	INAB	
Nickel-Dissolved		EM130	0.5		2.7	ug/L	INAB	
Zinc-Dissolved		EM130	1.0		28.8	ug/L	INAB	
Mercury-Dissolved		EM130	0.02		< 0.02	ug/L	INAB	
Potassium-Dissolved		EM130	0.2		2.5	mg/L	INAB	
Sodium-Dissolved		EM130	0.5		8.9	mg/L	INAB	
Metals-Total								
Chromium-Total		EM130	1.0		2.0	ug/L		
Micro -Total & Faecal (Sub 1)								
Total Coliforms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coliforms	*	Default	3		<3	MPN/100ml		
Titralab								
Alkalinity Total (R2 pH4.5)		EW153	10.000		16.0	mg/L CaCO3	INAB	
Total Cyanide High (Sub)								
Total Cyanide High	*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS)								
Total Dissolved Solids (TDS)		EW046	15		48	mg/L	INAB	
Total Phosphorus-TP								
Total Phosphorus-TP		EW146	0.01		0.06	mg/l P	INAB	
Town I mosphorus-11		LWITO	0.01		0.00	111g/11	IIIAD	

Signed: .

Technical Manager (or Deputy): **Brendan Murray**

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21/09/2012

Page 34 Cork County Council



Contact Name

Address

Tel No

Fax No

Customer PO

Quotation No

Marie Mortell

Bottlehill,

022-58102

1035938

B478/12

QN001139

Bottlehill Landfill,

Cork CC(Landfill Bottle Hill)



ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park,

Blackrock, Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149

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Report Number Sample Number Date of Receipt **Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

Good 21/09/2012 **Ground Waters**

Hand

60251/004

06/09/2012 06/09/2012

60251 - 1

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1								
Nitrate (as N)		EW154M	0.120		4.65	mg/l N	INAB	
Nitrite (as N)		EW154M	0.013		< 0.013	mg/l N	INAB	
TON (as N)(Calc)		EW154M	0.138		4.656	mg/l N	INAB	
Phosphate-Ortho(as P)		EW154M	0.009		0.030	mg/l P	INAB	
AQ2-UP2								
Sulphate		EW154M-1	1.000		5.2	mg/L	INAB	
Ion Chromatography								
Fluoride		EW137	0.10		< 0.10	mg/L	INAB	
Metals-Dissolved								
Iron-Dissolved		EM130	20.0		<20.0	ug/L	INAB	
Manganese-Dissolved		EM130	1.0		58.5	ug/L	INAB	
Boron-Dissolved		EM130	0.02		< 0.02	mg/L	INAB	
Cadmium-Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-Dissolved		EM130	1.0		13.7	mg/L	INAB	
Copper-Dissolved		EM130	0.003		0.016	mg/L	INAB	
Lead-Dissolved		EM130	0.3		< 0.3	ug/L	INAB	
Magnesium-Dissolved		EM130	0.3		5.5	mg/L	INAB	
Nickel-Dissolved		EM130	0.5		1.3	ug/L	INAB	
Zinc-Dissolved		EM130	1.0		26.6	ug/L	INAB	
Mercury-Dissolved		EM130	0.02		< 0.02	ug/L	INAB	
Potassium-Dissolved		EM130	0.2		2.1	mg/L	INAB	
Sodium-Dissolved		EM130	0.5		13.0	mg/L	INAB	
Metals-Total								
Chromium-Total		EM130	1.0		<1.0	ug/L		
Micro -Total & Faecal (Sub 1)								
Total Coliforms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coliforms	*	Default	3		<3	MPN/100ml		
Titralab								
Alkalinity Total (R2 pH4.5)		EW153	10.000		36.4	mg/L CaCO3	INAB	
Total Cyanide High (Sub)								
Total Cyanide High	*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS)								
Total Dissolved Solids (TDS)		EW046	15		121	mg/L	INAB	
Total Phosphorus-TP								
Total Phosphorus-TP		EW146	0.01		0.05	mg/l P	INAB	
Tomi I nosphorus II		2	0.01		0.00	g/11	11.110	

Signed: _

Brendan Murray Technical Manager (or Deputy):

NOTES

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Page 5 of 7

21/09/2012



Contact Name

Address

Tel No

Fax No

Customer PO

Quotation No



Marie Mortell

Bottlehill,

022-58102

1035938

B476/12

QN001139

Bottlehill Landfill,

Cork CC(Landfill Bottle Hill)

ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus

Mahon Industrial Park, Blackrock,

Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149

www.irishwatertesting.com

Report Number Sample Number Date of Receipt **Date Started**

Received or Collected Condition on Receipt

Date of Report Sample Type

60251 - 1 60251/005 06/09/2012 06/09/2012

Hand Good 21/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1								
Nitrate (as N)		EW154M	0.120		0.37	mg/l N	INAB	
Nitrite (as N)		EW154M	0.013		< 0.013	mg/l N	INAB	
TON (as N)(Calc)		EW154M	0.138		0.376	mg/l N	INAB	
Phosphate-Ortho(as P)		EW154M	0.009		0.025	mg/l P	INAB	
AQ2-UP2								
Sulphate		EW154M-1	1.000		2.3	mg/L	INAB	
Ion Chromatography								
Fluoride		EW137	0.10		<0.10	mg/L	INAB	
Metals-Dissolved								
Iron-Dissolved		EM130	20.0		<20.0	ug/L	INAB	
Manganese-Dissolved		EM130	1.0		1.7	ug/L	INAB	
Boron-Dissolved		EM130	0.02		< 0.02	mg/L	INAB	
Cadmium-Dissolved		EM130	0.1		<0.1	ug/L	INAB	
Calcium-Dissolved		EM130	1.0		11.5	mg/L	INAB	
Copper-Dissolved		EM130	0.003		<0.003	mg/L	INAB	
Lead-Dissolved		EM130	0.3		< 0.3	ug/L	INAB	
Magnesium-Dissolved		EM130	0.3		2.2	mg/L	INAB	
Nickel-Dissolved		EM130	0.5		0.8	ug/L	INAB	
Zinc-Dissolved		EM130	1.0		7.2	ug/L	INAB	
Mercury-Dissolved		EM130	0.02		< 0.02	ug/L	INAB	
Potassium-Dissolved		EM130	0.2		1.6	mg/L	INAB	
Sodium-Dissolved		EM130	0.5		8.2	mg/L	INAB	
Metals-Total								
Chromium-Total		EM130	1.0		<1.0	ug/L		
Micro -Total & Faecal (Sub 1)								
Total Coliforms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coliforms	*	Default	3		<3	MPN/100ml		
Titralab								
Alkalinity Total (R2 pH4.5)		EW153	10.000		45.2	mg/L CaCO3	INAB	
Total Cyanide High (Sub)								
Total Cyanide High	*	Default	10.00		<10.00	ug/L	YES	
Total Dissolved Solids (TDS)								
Total Dissolved Solids (TDS)		EW046	15		74	mg/L	INAB	
Total Phosphorus-TP								
Total Phosphorus-TP		EW146	0.01		0.43	mg/l P	INAB	
rount resolution ii		LW 140	0.01		0.45	mg/11	IIIAD	

Signed: .

Technical Manager (or Deputy):

Brendan Murray

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Page 6 of 7

21/09/2012





Acorn Business Campus Mahon Industrial Park,

Blackrock, Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149 www.irishwatertesting.com



Marie Mortell **Contact Name** Address

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill, 022-58102

Tel No

Fax No

1035938 **Customer PO** QN001139 **Quotation No** B477/12

Report Number Sample Number Date of Receipt **Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

60251 - 1 60251/006 06/09/2012 06/09/2012

Hand Good 21/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
AQ2-UP1									
Nitrate (as	N)		EW154M	0.120		0.34	mg/l N	INAB	
Nitrite (as	N)		EW154M	0.013		< 0.013	mg/l N	INAB	
TON (as N	(Calc)		EW154M	0.138		0.345	mg/l N	INAB	
Phosphate-	Ortho(as P)		EW154M	0.009		<0.009	mg/l P	INAB	
AQ2-UP2									
Sulphate			EW154M-1	1.000		1.1	mg/L	INAB	
Ion Chrom	atography								
Fluoride	_ · ·		EW137	0.10		< 0.10	mg/L	INAB	
Metals-Dis	solved								
Iron-Disso	lved		EM130	20.0		<20.0	ug/L	INAB	
Manganes	e-Dissolved		EM130	1.0		7.2	ug/L	INAB	
Boron-Dis	solved		EM130	0.02		< 0.02	mg/L	INAB	
Cadmium-	Dissolved		EM130	0.1		0.1	ug/L	INAB	
Calcium-E	issolved		EM130	1.0		<1.0	mg/L	INAB	
Copper-Di	ssolved		EM130	0.003		0.004	mg/L	INAB	
Lead-Diss	olved		EM130	0.3		2.2	ug/L	INAB	
Magnesiur	n-Dissolved		EM130	0.3		1.3	mg/L	INAB	
Nickel-Dis	solved		EM130	0.5		3.3	ug/L	INAB	
Zinc-Disso	lved		EM130	1.0		21.1	ug/L	INAB	
Mercury-D	Dissolved		EM130	0.02		< 0.02	ug/L	INAB	
Potassium	Dissolved		EM130	0.2		1.5	mg/L	INAB	
Sodium-D	issolved		EM130	0.5		10.0	mg/L	INAB	
Metals-Tot	al								
Chromium	-Total		EM130	1.0		<1.0	ug/L		
Micro -Tot	al & Faecal (Sub 1)								
Total Coli	forms (Coliform Count)	*	Default	3		<3	MPN/100ml		
Faecal coli	forms	*	Default	3		<3	MPN/100ml		
Titralab									
Alkalinity	Total (R2 pH4.5)		EW153	10.000		14.1	mg/L CaCO3	INAB	
Total Cyan	ide High (Sub)								
Total Cyar		*	Default	10.00		<10.00	ug/L	YES	
Total Disso	lved Solids (TDS)								_
	olved Solids (TDS)		EW046	15		46	mg/L	INAB	
Total Phos	ohorus-TP						_		
Total Phos			EW146	0.01		0.02	mg/l P	INAB	
	•						3		

Signed: .

Technical Manager (or Deputy):

Brendan Murray

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Page 7 of 7

21/09/2012

Appendix 2



1035938

B482/12

QN001139

Customer PO

Quotation No

Customer Ref



ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park, Blackrock, Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149

Web: www.irishwatertesting.com



Marie Mortell 60252 - 1 **Contact Name Report Number** 60252/001 Address Cork CC(Landfill Bottle Hill) Sample Number Bottlehill Landfill, Date of Receipt 06/09/2012 Bottlehill, **Date Started** 06/09/2012 022-58102 Tel No **Received or Collected** ELS Fax No

Condition on Receipt Good
Date of Report 21/09/2012
Sample Type Ground Waters

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
SVOC (sub)								
1,2,4-Trichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,2-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,3-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,4-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
2,4,5-Trichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4,6-Trichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dimethylphenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dinitrotoluene	*	Default	1.0		<1.0	ug/L	YES	
2,6-Dinitrotoluene	*	Default	1.0		<1.0	ug/L	YES	
2-Chloronaphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Chlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2-Methylnaphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Methylphenol	*	Default	1.0		<1.0	ug/L	YES	
2-Nitrophenol	*	Default	1.0		<1.0	ug/L	YES	
3&4-Methylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Bromophenyl Phenyl Ether	*	Default	1.0		<1.0	ug/L	YES	
4-Chloro-3-methylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Chlorophenyl phenyl ether	*	Default	1.0		<1.0	ug/L	YES	
4-Nitrophenol	*	Default	5.0		<5.0	ug/L	YES	
Acenaphthene	*	Default	1.0		<1.0	ug/L	YES	
Acenaphthylene	*	Default	1.0		<1.0	ug/L	YES	
Anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(b)fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(g,h,i)perylene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(k)fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzyl Butyl Phthalate	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroethoxy)methane	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroethyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroisopropyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-ethylhexyl)phthalate	*	Default	5.0		<5.0	ug/L	YES	
Chrysene	*	Default	1.0		<1.0	ug/L	YES	
Dibenz(a,h)anthracene	*	Default	1.0		<1.0	ug/L	YES	

Signed:

Technical Manager (or Deputy): Brendan Murray

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Page 1 of 8

21/09/2012

60252 - 1

60252/001

06/09/2012

06/09/2012

21/09/2012

Ground Waters

ELS

Good





ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park, Blackrock,

Cork Ireland Tel: +353 21 453 6141 Fax: +353 21 453 6149



Marie Mortell **Contact Name**

Cork CC(Landfill Bottle Hill) Address

Bottlehill Landfill,

Bottlehill,

Tel No Fax No 022-58102

Customer PO Quotation No

Customer Ref

1035938 QN001139 B482/12

Report Number Sample Number Date of Receipt **Date Started**

Received or Collected Condition on Receipt **Date of Report** Sample Type

www.irishwatertesting.com

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC (sub)								
Dibenzofuran	*	Default	1.0		<1.0	ug/L	YES	
Diethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Dimethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
di-n-Butylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Di-n-octylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Diphenylamine	*	Default	1.0		<1.0	ug/L	YES	
Fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Fluorene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobutadiene	*	Default	1.0		<1.0	ug/L	YES	
Hexachloroethane	*	Default	1.0		<1.0	ug/L	YES	
Indeno(1,2,3-c,d)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Isophorone	*	Default	1.0		<1.0	ug/L	YES	
Naphthalene	*	Default	2.0		<2.0	ug/L	YES	
Nitrobenzene	*	Default	1.0		<1.0	ug/L	YES	
n-Nitrosodi-n-propylamine	*	Default	1.0		<1.0	ug/L	YES	
Pentachlorophenol	*	Default	1.0		<1.0	ug/L	YES	
Phenanthrene	*	Default	1.0		<1.0	ug/L	YES	
Phenol	*	Default	1.0		<1.0	ug/L	YES	
Pyrene	*	Default	1.0		<1.0	ug/L	YES	
OC Full Suite								
Dichlorodifluoromethane		EO025	10.0		<10.0	ug/L		
Chloromethane		EO025	0.5		<0.5	ug/L		
Ethyl Chloride/Chloroethane		EO025	0.5		<0.5	ug/L		
Vinyl Chloride		EO025	0.5		<0.5	ug/L		
Bromomethane		EO025	0.500		<0.5	ug/L	INAB	
Trichloromonofluoromethane		EO025	0.5		<0.5	ug/L		
Ethyl Ether/Diethyl Ether		EO025	0.500		<0.5	ug/L	INAB	
11 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
Acetone		EO025	2.0		<2.0	ug/L		
Iodomethane/Methyl Iodide		EO025	0.500		<0.5	ug/L	INAB	
Carbon Disulphide		EO025	0.500		<0.5	ug/L	INAB	
Allyl Chloride		EO025	0.500		<0.5	ug/L	INAB	
Dichloromethane		EO025	5.0		<5.0	ug/L	INAB	
Chlormethyl Cyanide/Chloroacetonitrile		EO025	0.500		<0.5	ug/L	INAB	
Nitrobenzene		EO025	0.5		<0.5	ug/L		

Signed:

Technical Manager (or Deputy):

Brendan Murray

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21/09/2012

Page 40 Cork County Council





Acorn Business Campus Mahon Industrial Park, Blackrock,

Cork Ireland Tel: +353 21 453 6141 Fax: +353 21 453 6149

www.irishwatertesting.com



Contact Name Marie Mortell

Address Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill,

Tel No Fax No 022-58102

Fax No Customer PO

Quotation No

Customer Ref

1035938 QN001139 B482/12 Report Number Sample Number Date of Receipt Date Started

Received or Collected Condition on Receipt Date of Report Sample Type **60252 - 1** 60252/001 06/09/2012 06/09/2012

ELS Good 21/09/2012 Ground Waters

CERTIFICATE OF ANALYSIS

EST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
OC Full Suite								
Propanenitrile		EO025	10.0		<10.0	ug/L		
Hexachlorobutadiene		EO025	0.500		<0.5	ug/L	INAB	
Trans-1,2 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
MtBE		EO025	0.500		<0.5	ug/L	INAB	
1,1-dichloroethane		EO025	0.500		<0.5	ug/L	INAB	
2,2-dichloropropane		EO025	0.500		<0.5	ug/L	INAB	
cis-12 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
2-Butanone		EO025	5.0		<5.0	ug/L		
Methyl Acrylate		EO025	0.500		<0.5	ug/L	INAB	
Bromochloromethane		EO025	0.500		<0.5	ug/L	INAB	
Methacrylonitrile		EO025	5.0		<5.0	ug/L		
Tetrahydrofuran		EO025	0.500		<0.5	ug/L	INAB	
Chloroform		EO025	1.000		<1.0	ug/L	INAB	
1,1,1-trichloroethane		EO025	0.500		<0.5	ug/L	INAB	
1-Chlorobutane		EO025	0.500		<0.5	ug/L	INAB	
Carbon Tetrachloride		EO025	0.500		<0.5	ug/L	INAB	
11 Dichloropropene		EO025	0.500		<0.5	ug/L	INAB	
Benzene		EO025	0.100		<0.1	ug/L	INAB	
1,2 dicloroethane		EO025	0.1		<0.1	ug/L	INAB	
Trichloroethene		EO025	0.100		<0.1	ug/L	INAB	
1,2-dichloropropane		EO025	0.500		<0.5	ug/L	INAB	
Dibromomethane		EO025	0.500		<0.5	ug/L	INAB	
Methyl Methacrylate		EO025	0.500		<0.5	ug/L	INAB	
Bromodichloromethane		EO025	2.000		<2.0	ug/L	INAB	
13 Dichloropropene,cis		EO025	2.000		<2.0	ug/L	INAB	
MIBK/4 Methyl 2 Pentanone		EO025	2.000		<2.0	ug/L	INAB	
Toluene		EO025	0.500		<0.5	ug/L	INAB	
13 Dichloropropene,trans		EO025	2.000		<2.0	ug/L	INAB	
Ethyl Methacrylate		EO025	2.000		<2.0	ug/L	INAB	
112 Trichloroethane		EO025	0.500		<0.5	ug/L	INAB	
Tetrachloroethene		EO025	0.100		<0.1	ug/L	INAB	
1,3-dichloropropane		EO025	0.500		<0.5	ug/L	INAB	
2-Hexanone		EO025	1.000		<1.0	ug/L	INAB	
Dibromochloromethane		EO025	1.000		<1.0	ug/L	INAB	
1,2-dibromoethane		EO025	0.500		<0.5	ug/L	INAB	
Chlorobenzene		EO025	0.500		<0.5	ug/L	INAB	

Signed : _______ 21/09/2012

Technical Manager (or Deputy):

NOTES

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Brendan Murray

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Customer Ref

B482/12



ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park, Blackrock, Cork

Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149 www.irishwatertesting.com



Marie Mortell 60252 - 1 **Contact Name** Report Number Cork CC(Landfill Bottle Hill) 60252/001 Address Sample Number Bottlehill Landfill, Date of Receipt 06/09/2012 Bottlehill, 06/09/2012 **Date Started**

022-58102 ELS Tel No Received or Collected Fax No **Condition on Receipt** Good 1035938 21/09/2012 **Customer PO Date of Report** QN001139 **Ground Waters Quotation No** Sample Type

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC Full Suite								
1,1,1,2-tetrachloroethane		EO025	2.000		<2.0	ug/L	INAB	
Ethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
Xylene P&M		EO025	0.500		<0.5	ug/L	INAB	
Xylene -o		EO025	0.500		<0.5	ug/L	INAB	
Styrene		EO025	2.000		<2.0	ug/L	INAB	
Bromoform		EO025	1.000		<1.0	ug/L	INAB	
Isopropylbenzene		EO025	0.500		<0.5	ug/L	INAB	
Bromobenzene		EO025	0.500		<0.5	ug/L	INAB	
1,1,2,2-tetrachloroethane		EO025	0.500		<0.5	ug/L	INAB	
1,2,3-trichloropropane		EO025	2.000		<2.0	ug/L	INAB	
Trans 14 Dichloro 2 Butene, tran		EO025	2.0		<2.0	ug/L		
Propylbenzene		EO025	0.500		<0.5	ug/L	INAB	
2-chlorotoluene		EO025	0.500		<0.5	ug/L	INAB	
4-chlorotoluene		EO025	0.500		<0.5	ug/L	INAB	
1,3,5-trimethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
Tert Butyl Benzene		EO025	0.500		<0.5	ug/L	INAB	
1,2,4-trimethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
sec-butylbenzene		EO025	0.500		<0.5	ug/L	INAB	
1,3-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
P Isopropyltoluene		EO025	0.500		<0.5	ug/L	INAB	
1,4-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
1,2-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
N Butyl Benzene		EO025	0.500		<0.5	ug/L	INAB	
Hexachloroethane		EO025	5.000		<5.0	ug/L	INAB	
1,2-dibromo-3-chloropropane		EO025	2.000		<2.0	ug/L	INAB	
1,2,4-trichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
Naphthalene		EO025	2.0		<2.0	ug/L		
1,2,3-trichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	

21/09/2012 Signed:

> **Brendan Murray** Technical Manager (or Deputy):

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Page 4 of 8

Page 42 Cork County Council





Acorn Business Campus Mahon Industrial Park, Blackrock. Cork Ireland Tel: +353 21 453 6141



Fax: +353 21 453 6149 Web: www.irishwatertesting.com

Contact Name Marie Mortell

Cork CC(Landfill Bottle Hill) Address

Bottlehill Landfill,

Bottlehill,

Tel No Fax No 022-58102

1035938 **Customer PO** QN001139 **Quotation No** B483/12 **Customer Ref**

Report Number Sample Number Date of Receipt **Date Started**

Date of Report

Sample Type

06/09/2012 06/09/2012 ELS **Received or Collected Condition on Receipt** Good

21/09/2012 **Ground Waters**

60252 - 1 60252/002

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
SVOC (sub)								
1,2,4-Trichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,2-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,3-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,4-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
2,4,5-Trichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4,6-Trichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dimethylphenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dinitrotoluene	*	Default	1.0		<1.0	ug/L	YES	
2,6-Dinitrotoluene	*	Default	1.0		<1.0	ug/L	YES	
2-Chloronaphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Chlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2-Methylnaphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Methylphenol	*	Default	1.0		<1.0	ug/L	YES	
2-Nitrophenol	*	Default	1.0		<1.0	ug/L	YES	
3&4-Methylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Bromophenyl Phenyl Ether	*	Default	1.0		<1.0	ug/L	YES	
4-Chloro-3-methylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Chlorophenyl phenyl ether	*	Default	1.0		<1.0	ug/L	YES	
4-Nitrophenol	*	Default	5.0		<5.0	ug/L	YES	
Acenaphthene	*	Default	1.0		<1.0	ug/L	YES	
Acenaphthylene	*	Default	1.0		<1.0	ug/L	YES	
Anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(b)fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(g,h,i)perylene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(k)fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzyl Butyl Phthalate	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroethoxy)methane	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroethyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroisopropyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-ethylhexyl)phthalate	*	Default	5.0		<5.0	ug/L	YES	
Chrysene	*	Default	1.0		<1.0	ug/L	YES	
Dibenz(a,h)anthracene	*	Default	1.0		<1.0	ug/L	YES	
Dibenzofuran	*	Default	1.0		<1.0	ug/L	YES	

Frencan Signed:

> Technical Manager (or Deputy): **Brendan Murray**

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Page 5 of 8

21/09/2012





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Acorn Business Campus
Mahon Industrial Park,
Blackrock,
Cork
Ireland

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Web: <u>www.irishwatertesting.com</u>



 Contact Name
 Marie Mortell
 Report Number
 60252 - 1

 Address
 Cork CC(Landfill Bottle Hill)
 Sample Number
 60252/002

 Bottlehill Landfill,
 Date of Receipt
 06/09/2012

 Bottlehill,
 Date Started
 06/09/2012

 Fax No
 1035938

 Quotation No
 QN001139

 Customer Ref
 B483/12

Tel No

022-58102

Received or Collected ELS
Condition on Receipt Good
Date of Report 21/09/2012
Sample Type Ground Waters

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
SVOC (sub)								
Diethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Dimethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
di-n-Butylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Di-n-octylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Diphenylamine	*	Default	1.0		<1.0	ug/L	YES	
Fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Fluorene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobutadiene	*	Default	1.0		<1.0	ug/L	YES	
Hexachloroethane	*	Default	1.0		<1.0	ug/L	YES	
Indeno(1,2,3-c,d)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Isophorone	*	Default	1.0		<1.0	ug/L	YES	
Naphthalene	*	Default	2.0		<2.0	ug/L	YES	
Nitrobenzene	*	Default	1.0		<1.0	ug/L	YES	
n-Nitrosodi-n-propylamine	*	Default	1.0		<1.0	ug/L	YES	
Pentachlorophenol	*	Default	1.0		<1.0	ug/L	YES	
Phenanthrene	*	Default	1.0		<1.0	ug/L	YES	
Phenol	*	Default	1.0		<1.0	ug/L	YES	
Pyrene	*	Default	1.0		<1.0	ug/L	YES	
VOC Full Suite								
Dichlorodifluoromethane		EO025	10.0		<10.0	ug/L		
Chloromethane		EO025	0.5		<0.5	ug/L		
Ethyl Chloride/Chloroethane		EO025	0.5		<0.5	ug/L		
Vinyl Chloride		EO025	0.5		<0.5	ug/L		
Bromomethane		EO025	0.500		<0.5	ug/L	INAB	
Trichloromonofluoromethane		EO025	0.5		<0.5	ug/L		
Ethyl Ether/Diethyl Ether		EO025	0.500		<0.5	ug/L	INAB	
11 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
Acetone		EO025	2.0		<2.0	ug/L		
Iodomethane/Methyl Iodide		EO025	0.500		<0.5	ug/L	INAB	
Carbon Disulphide		EO025	0.500		<0.5	ug/L	INAB	
Allyl Chloride		EO025	0.500		<0.5	ug/L	INAB	
Dichloromethane		EO025	5.0		<5.0	ug/L	INAB	
Chlormethyl Cyanide/Chloroacetonitrile		EO025	0.500		<0.5	ug/L	INAB	
Nitrobenzene		EO025	0.5		<0.5	ug/L		
Propanenitrile		EO025	10.0		<10.0	ug/L		

Signed: ______ 21/09/2012

Technical Manager (or Deputy): Brendan Murray

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Blackrock,
Cork
Ireland

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Web: <u>www.irishwatertesting.com</u>



Contact Name Marie Mortell Report Number 60252 - 1 Cork CC(Landfill Bottle Hill) 60252/002 Address Sample Number 06/09/2012 Bottlehill Landfill, Date of Receipt Bottlehill, **Date Started** 06/09/2012 022-58102 Tel No

 Fax No
 1035938

 Quotation No
 QN001139

 Customer Ref
 B483/12

Received or Collected ELS
Condition on Receipt Good
Date of Report 21/09/2012
Sample Type Ground Waters

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC Full S	uite								
Hexachloro	butadiene		EO025	0.500		<0.5	ug/L	INAB	
Trans-1,2 I	Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
MtBE			EO025	0.500		<0.5	ug/L	INAB	
1,1-dichlor	oethane		EO025	0.500		<0.5	ug/L	INAB	
2,2-dichlor	opropane		EO025	0.500		< 0.5	ug/L	INAB	
cis-12 Dich	loroethene		EO025	0.500		<0.5	ug/L	INAB	
2-Butanone			EO025	5.0		<5.0	ug/L		
Methyl Act	rylate		EO025	0.500		<0.5	ug/L	INAB	
Bromochlo	romethane		EO025	0.500		<0.5	ug/L	INAB	
Methacrylo	nitrile		EO025	5.0		<5.0	ug/L		
Tetrahydro	furan		EO025	0.500		< 0.5	ug/L	INAB	
Chloroforn	1		EO025	1.000		<1.0	ug/L	INAB	
1,1,1-trichl	oroethane		EO025	0.500		<0.5	ug/L	INAB	
1-Chlorobu	itane		EO025	0.500		<0.5	ug/L	INAB	
Carbon Tet	rachloride		EO025	0.500		<0.5	ug/L	INAB	
11 Dichlore	opropene		EO025	0.500		<0.5	ug/L	INAB	
Benzene			EO025	0.100		<0.1	ug/L	INAB	
1,2 dicloro	ethane		EO025	0.1		<0.1	ug/L	INAB	
Trichloroet	hene		EO025	0.100		<0.1	ug/L	INAB	
1,2-dichlor	opropane		EO025	0.500		< 0.5	ug/L	INAB	
Dibromom	ethane		EO025	0.500		<0.5	ug/L	INAB	
Methyl Me	thacrylate		EO025	0.500		<0.5	ug/L	INAB	
Bromodich	loromethane		EO025	2.000		<2.0	ug/L	INAB	
13 Dichlore	opropene,cis		EO025	2.000		<2.0	ug/L	INAB	
MIBK/4 M	ethyl 2 Pentanone		EO025	2.000		<2.0	ug/L	INAB	
Toluene			EO025	0.500		<0.5	ug/L	INAB	
13 Dichlore	opropene,trans		EO025	2.000		<2.0	ug/L	INAB	
Ethyl Meth	acrylate		EO025	2.000		<2.0	ug/L	INAB	
112 Trichle	proethane		EO025	0.500		< 0.5	ug/L	INAB	
Tetrachloro	pethene		EO025	0.100		<0.1	ug/L	INAB	
1,3-dichlor	opropane		EO025	0.500		<0.5	ug/L	INAB	
2-Hexanon	e		EO025	1.000		<1.0	ug/L	INAB	
Dibromoch	loromethane		EO025	1.000		<1.0	ug/L	INAB	
1,2-dibrom	oethane		EO025	0.500		<0.5	ug/L	INAB	
Chlorobena	zene		EO025	0.500		<0.5	ug/L	INAB	
1,1,1,2-tetr	achloroethane		EO025	2.000		<2.0	ug/L	INAB	

Signed: _______ 21/09/2012

Technical Manager (or Deputy): Brendan Murray

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Page 7 of 8



Contact Name

Address

Tel No

Fax No

Customer PO

Quotation No

Marie Mortell

Bottlehill,

022-58102

1035938

B483/12

QN001139

Bottlehill Landfill,

Cork CC(Landfill Bottle Hill)



ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus

Mahon Industrial Park,

Blackrock, Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149

www.irishwatertesting.com

Report Number

60252 - 1 60252/002

Sample Number Date of Receipt 06/09/2012 06/09/2012 **Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

ELS Good 21/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC Full S	uite								
Ethylbenze	ne		EO025	0.500		<0.5	ug/L	INAB	
Xylene P&	M		EO025	0.500		<0.5	ug/L	INAB	
Xylene -o			EO025	0.500		<0.5	ug/L	INAB	
Styrene			EO025	2.000		<2.0	ug/L	INAB	
Bromoforn	ı		EO025	1.000		<1.0	ug/L	INAB	
Isopropylb	enzene		EO025	0.500		<0.5	ug/L	INAB	
Bromoben	zene		EO025	0.500		<0.5	ug/L	INAB	
1,1,2,2-tetr	achloroethane		EO025	0.500		< 0.5	ug/L	INAB	
1,2,3-trichl	oropropane		EO025	2.000		<2.0	ug/L	INAB	
Trans 14 D	richloro 2 Butene, tran		EO025	2.0		<2.0	ug/L		
Propylbenz	rene		EO025	0.500		<0.5	ug/L	INAB	
2-chlorotol	uene		EO025	0.500		<0.5	ug/L	INAB	
4-chlorotol	uene		EO025	0.500		<0.5	ug/L	INAB	
1,3,5-trime	thylbenzene		EO025	0.500		< 0.5	ug/L	INAB	
Tert Butyl	Benzene		EO025	0.500		<0.5	ug/L	INAB	
1,2,4-trime	thylbenzene		EO025	0.500		< 0.5	ug/L	INAB	
sec-butylbe	enzene		EO025	0.500		<0.5	ug/L	INAB	
1,3-dichlor	obenzene		EO025	0.500		<0.5	ug/L	INAB	
P Isopropy	Itoluene		EO025	0.500		<0.5	ug/L	INAB	
1,4-dichlor	obenzene		EO025	0.500		< 0.5	ug/L	INAB	
1,2-dichlor	obenzene		EO025	0.500		<0.5	ug/L	INAB	
N Butyl Be	enzene		EO025	0.500		<0.5	ug/L	INAB	
Hexachloro	pethane		EO025	5.000		<5.0	ug/L	INAB	
1,2-dibrom	o-3-chloropropane		EO025	2.000		<2.0	ug/L	INAB	
1,2,4-trichl	orobenzene		EO025	0.500		<0.5	ug/L	INAB	
Naphthaler	ne		EO025	2.0		<2.0	ug/L		
1,2,3-trichl	orobenzene		EO025	0.500		<0.5	ug/L	INAB	

21/09/2012 Signed: _

> **Brendan Murray** Technical Manager (or Deputy):

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Customer Ref

B468/12



ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park, Blackrock, Cork

Ireland Tel: +353 21 453 6141 Fax: +353 21 453 6149 www.irishwatertesting.com



Report Number **Contact Name** Marie Mortell 60213 - 1 60213/001 Cork CC(Landfill Bottle Hill) Address Sample Number Bottlehill Landfill, Date of Receipt 05/09/2012 05/09/2012 Bottlehill, **Date Started** Tel No 022-58102 Received or Collected Hand Good Fax No Condition on Receipt 1035938 17/09/2012 Date of Report **Customer PO** QN001139 **Ground Waters Q**uotation No

CERTIFICATE OF ANALYSIS

Sample Type

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
SVOC (su	(b)								
1,2,4-Tri	chlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,2-Dich	lorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,3-Dich	lorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,4-Dich	lorobenzene	*	Default	1.0		<1.0	ug/L	YES	
2,4,5-Tri	chlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4,6-Tri	chlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dich	lorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dime	ethylphenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dinit	rotoluene	*	Default	1.0		<1.0	ug/L	YES	
2,6-Dinit	rotoluene	*	Default	1.0		<1.0	ug/L	YES	
2-Chloro	naphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Chloro	phenol	*	Default	1.0		<1.0	ug/L	YES	
2-Methy	Inaphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Methy	lphenol	*	Default	1.0		<1.0	ug/L	YES	
2-Nitrop	henol	*	Default	1.0		<1.0	ug/L	YES	
3&4-Me	thylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Bromo	phenyl Phenyl Ether	*	Default	1.0		<1.0	ug/L	YES	
4-Chloro	-3-methylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Chloro	phenyl phenyl ether	*	Default	1.0		<1.0	ug/L	YES	
4-Nitrop	henol	*	Default	5.0		<5.0	ug/L	YES	
Acenaph	thene	*	Default	1.0		<1.0	ug/L	YES	
Acenaph	thylene	*	Default	1.0		<1.0	ug/L	YES	
Anthrace	ne	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)	anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)	pyrene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(b)	fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(g,	h,i)perylene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(k)	fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzyl E	Butyl Phthalate	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-ch	loroethoxy)methane		Default	1.0		<1.0	ug/L	YES	
Bis(2-chi	loroethyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-ch	loroisopropyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-eth	nylhexyl)phthalate	*	Default	5.0		<5.0	ug/L	YES	
Chrysene	•	*	Default	1.0		<1.0	ug/L	YES	
Dibenz(a	,h)anthracene	*	Default	1.0		<1.0	ug/L	YES	

17/09/2012 Signed:

Technical Manager (or Deputy): **Brendan Murray**

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Contact Name Address

Marie Mortell Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill, 022-58102

Tel No Fax No

Customer PO 1035938 **Quotation No** QN001139 B468/12 **Customer Ref**

Report Number Sample Number **Date of Receipt Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

05/09/2012 Hand Good 17/09/2012 **Ground Waters**

60213 - 1

60213/001

05/09/2012

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
SVOC (sub)								
Dibenzofu	ran	*	Default	1.0		<1.0	ug/L	YES	
Diethylpht	halate	*	Default	1.0		<1.0	ug/L	YES	
Dimethylp	hthalate	*	Default	1.0		<1.0	ug/L	YES	
di-n-Butyl	phthalate	*	Default	1.0		<1.0	ug/L	YES	
Di-n-octyl	phthalate	*	Default	1.0		<1.0	ug/L	YES	
Diphenyla	mine	*	Default	1.0		<1.0	ug/L	YES	
Fluoranthe	ne	*	Default	1.0		<1.0	ug/L	YES	
Fluorene		*	Default	1.0		<1.0	ug/L	YES	
Hexachlor	obenzene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlor	obutadiene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlor	oethane	*	Default	1.0		<1.0	ug/L	YES	
Indeno(1,2	,3-c,d)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Isophoron	•	*	Default	1.0		<1.0	ug/L	YES	
Naphthale	ne	*	Default	2.0		<2.0	ug/L	YES	
Nitrobenze	ene	*	Default	1.0		<1.0	ug/L	YES	
n-Nitrosod	li-n-propylamine	*	Default	1.0		<1.0	ug/L	YES	
Pentachlor	ophenol	*	Default	1.0		<1.0	ug/L	YES	
Phenanthr	ene	*	Default	1.0		<1.0	ug/L	YES	
Phenol		*	Default	1.0		<1.0	ug/L	YES	
Pyrene		*	Default	1.0		<1.0	ug/L	YES	
VOC Full S	Suite						-		
	fluoromethane		EO025	10.0		<10.0	ug/L		
Chloromet			EO025	0.5		<0.5	ug/L		
Ethyl Chlo	ride/Chloroethane		EQ025	0.5		<0.5	ug/L		
Vinyl Chle			EO025	0.5		<0.5	ug/L		
Bromomet			EO025	0.500		<0.5	ug/L	INAB	
	nonofluoromethane		EO025	0.5		<0.5	ug/L	111111111111111111111111111111111111111	
	r/Diethyl Ether		EO025	0.500		<0.5	ug/L	INAB	
11 Dichlor			EO025	0.500		<0.5	ug/L	INAB	
Acetone			EO025	2.0		<2.0	ug/L		
	ne/Methyl Iodide		EO025	0.500		<0.5	ug/L	INAB	
Carbon Di	*		EO025	0.500		<0.5	ug/L	INAB	
Allyl Chlo			EO025	0.500		<0.5	ug/L	INAB	
Dichloron			EO025	5.0		<5.0	ug/L	INAB	
Dicinoron	yl Cyanide/Chloroacetonitrile		EO025	0.500		<0.5	ug/L	INAB	
Nitrobenze			EO025	0.500		<0.5	ug/L	min	
THEODELIZE			10025	0.5		-0.5	ug/L		

Signed:

Technical Manager (or Deputy): **Brendan Murray**

NOTES

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Page 2 of 16

17/09/2012



Customer Ref

B468/12



ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park,

ahon Industrial Blackrock, Cork Ireland

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Veb: www.irishwatertesting.com



Contact Name Address	Marie Mortell Cork CC(Landfill Bottle Hill) Bottlehill Landfill, Bottlehill,	Report Number Sample Number Date of Receipt Date Started	60213 - 1 60213/001 05/09/2012 05/09/2012
Tel No Fax No Customer PO Quotation No	022-58102 1035938 QN001139	Received or Collected Condition on Receipt Date of Report Sample Type	Hand Good 17/09/2012 Ground Waters

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC Full Suite								
Propanenitrile		EO025	10.0		<10.0	ug/L		
Hexachlorobutadiene		EO025	0.500		<0.5	ug/L	INAB	
Trans-1,2 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
MtBE		EO025	0.500		<0.5	ug/L	INAB	
1,1-dichloroethane		EO025	0.500		<0.5	ug/L	INAB	
2,2-dichloropropane		EO025	0.500		<0.5	ug/L	INAB	
cis-12 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
2-Butanone		EO025	5.0		<5.0	ug/L		
Methyl Acrylate		EO025	0.500		<0.5	ug/L	INAB	
Bromochloromethane		EO025	0.500		<0.5	ug/L	INAB	
Methacrylonitrile		EO025	5.0		<5.0	ug/L		
Tetrahydrofuran		EO025	0.500		<0.5	ug/L	INAB	
Chloroform		EO025	1.000		1.3	ug/L	INAB	
1,1,1-trichloroethane		EO025	0.500		<0.5	ug/L	INAB	
1-Chlorobutane		EO025	0.500		<0.5	ug/L	INAB	
Carbon Tetrachloride		EO025	0.500		<0.5	ug/L	INAB	
11 Dichloropropene		EO025	0.500		<0.5	ug/L	INAB	
Benzene		EO025	0.100		<0.1	ug/L	INAB	
1,2 dicloroethane		EO025	0.1		<0.1	ug/L	INAB	
Trichloroethene		EO025	0.100		<0.1	ug/L	INAB	
1,2-dichloropropane		EO025	0.500		< 0.5	ug/L	INAB	
Dibromomethane		EO025	0.500		<0.5	ug/L	INAB	
Methyl Methacrylate		EO025	0.500		<0.5	ug/L	INAB	
Bromodichloromethane		EO025	2.000		<2.0	ug/L	INAB	
13 Dichloropropene,cis		EO025	2.000		<2.0	ug/L	INAB	
MIBK/4 Methyl 2 Pentanone		EO025	2.000		<2.0	ug/L	INAB	
Toluene		EO025	0.500		< 0.5	ug/L	INAB	
13 Dichloropropene,trans		EO025	2.000		<2.0	ug/L	INAB	
Ethyl Methacrylate		EO025	2.000		<2.0	ug/L	INAB	
112 Trichloroethane		EO025	0.500		<0.5	ug/L	INAB	
Tetrachloroethene		EO025	0.100		<0.1	ug/L	INAB	
1,3-dichloropropane		EO025	0.500		<0.5	ug/L	INAB	
2-Hexanone		EO025	1.000		<1.0	ug/L	INAB	
Dibromochloromethane		EO025	1.000		<1.0	ug/L	INAB	
1,2-dibromoethane		EO025	0.500		<0.5	ug/L	INAB	
Chlorobenzene		EO025	0.500		<0.5	ug/L	INAB	

Signed: _______ 17/09/2012

Technical Manager (or Deputy): Brendan Murray

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Page 3 of 16



Customer Ref

B468/12



ENVIRONMENTAL ABORATORY SERVICES

LABORATORY SERVICES Acorn Business Campus

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Blackrock,
Cork

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Fax: +353 21 453 6149

Web: www.irishwatertesting.com



Contact Name Address	Marie Mortell Cork CC(Landfill Bottle Hill) Bottlehill Landfill, Bottlehill,	Report Number Sample Number Date of Receipt Date Started	60213 - 1 60213/001 05/09/2012 05/09/2012
Tel No Fax No Customer PO Quotation No	022-58102 1035938 QN001139	Received or Collected Condition on Receipt Date of Report Sample Type	Hand Good 17/09/2012 Ground Waters

CERTIFICATE OF ANALYSIS

EST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	008
OC Full	Suite								
1,1,1,2-te	trachloroethane		EO025	2.000		<2.0	ug/L	INAB	
Ethylben	zene		EO025	0.500		<0.5	ug/L	INAB	
Xylene P	&M		EO025	0.500		<0.5	ug/L	INAB	
Xylene -)		EO025	0.500		<0.5	ug/L	INAB	
Styrene			EO025	2.000		<2.0	ug/L	INAB	
Bromofo	rm		EO025	1.000		<1.0	ug/L	INAB	
Isopropy	benzene		EO025	0.500		<0.5	ug/L	INAB	
Bromobe	nzene		EO025	0.500		<0.5	ug/L	INAB	
1,1,2,2-te	trachloroethane		EO025	0.500		<0.5	ug/L	INAB	
1,2,3-tric	hloropropane		EO025	2.000		<2.0	ug/L	INAB	
Trans 14	Dichloro 2 Butene, tran		EO025	2.0		<2.0	ug/L		
Propylbe	nzene		EO025	0.500		<0.5	ug/L	INAB	
2-chlorot	oluene		EO025	0.500		<0.5	ug/L	INAB	
4-chlorot	oluene		EO025	0.500		<0.5	ug/L	INAB	
1,3,5-trin	nethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
Tert Buty	l Benzene		EO025	0.500		<0.5	ug/L	INAB	
1,2,4-trin	nethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
sec-butyl	benzene		EO025	0.500		<0.5	ug/L	INAB	
1,3-dichl	orobenzene		EO025	0.500		<0.5	ug/L	INAB	
P Isoprop	yltoluene		EO025	0.500		<0.5	ug/L	INAB	
1,4-dichl	orobenzene		EO025	0.500		<0.5	ug/L	INAB	
1,2-dichl	orobenzene		EO025	0.500		<0.5	ug/L	INAB	
N Butyl I	Benzene		EO025	0.500		<0.5	ug/L	INAB	
Hexachlo	roethane		EO025	5.000		<5.0	ug/L	INAB	
1,2-dibro	mo-3-chloropropane		EO025	2.000		<2.0	ug/L	INAB	
1,2,4-tric	hlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
Naphthal	ene		EO025	2.0		<2.0	ug/L		
1.2.3-tric	hlorobenzene		EO025	0.500		<0.5	ug/L	INAB	

Signed: ______ 17/09/2012

Technical Manager (or Deputy): Brendan Murray

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Page 4 of 16





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Blackrock, Cork Ireland

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Contact Name Address

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill, 022-58102

Marie Mortell

Tel No

Fax No **Customer PO**

Customer Ref

1035938 QN001139 **Quotation No** B469/12

Report Number Sample Number **Date of Receipt Date Started**

Received or Collected **Condition on Receipt Date of Report** Sample Type

60213 - 1 60213/002 05/09/2012 05/09/2012 Hand

Good 17/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

1.24-Inchlorobenzene	TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
1,2-Dichlorobenzene	SVOC (sub)								
1.3-Dichlorobenzene Default 1.0 -1.0 ug/L YES 1.4-Dichlorobenzene Default 1.0 -1.0 ug/L YES 2.4.5-Trichlorophenol Default 1.0 -1.0 ug/L YES 2.4.6-Trichlorophenol Default 1.0 -1.0 ug/L YES 2.4.6-Trichlorophenol Default 1.0 -1.0 ug/L YES 2.4-Dimethylphenol Default 1.0 -1.0 ug/L YES 2.6-Dimitrotoluene Default 1.0 -1.0 ug/L YES 3.6-Methylphenol Default 1.0 -1.0 ug/L YES 4.6-Dicrophenyl Phenyl Ether Default 1.0 -1.0 ug/L YES 4.6-Dicrophenyl Ph	1,2,4-Trichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1.4-Dichlorobenzene Default 1.0 1.0 ug/L YES 2.4.5-Trichlorophenol Default 1.0 1.0 ug/L YES 2.4.5-Dinitrotoluene Default 1.0 1.0 ug/L YES 2.4.5-Dinitrotoluene Default 1.0 1.0 ug/L YES 2.4.5-Dinitrotoluene Default 1.0 1.0 ug/L YES 2.5-Dinitrotoluene Default 1.0 1.0 ug/L YES 3.5-Dinitrotoluene Default 1.0 1.0 ug/L YES 3.5-Dinitrotoluene Default 1.0 1.0 ug/L YES 3.5-Dinitrotoluene Default 1.0 1.0 ug/L YES 4-Dinoro-3-methylphenol Default 1.0 1.0 ug/L YES 5-Default 1.0 1.0 ug/L YES 5-Default 1.0 1.0 ug/	1,2-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1.45-Thichtoropened - Default 1.0 -1.0 ug/L YES	1,3-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
2.4,6-Trichlorophenol Default 1.0 1.0 ug/L YES 2.4-Dimethylphenol Default 1.0 1.0 ug/L YES 2.4-Dimethylphenol Default 1.0 1.0 ug/L YES 2.4-Dimethylphenol Default 1.0 1.0 ug/L YES 2.4-Dimitrotoluene Default 1.0 1.0 ug/L YES 2.4-Dimitrotoluene Default 1.0 1.0 ug/L YES 2.5-Dimitrotoluene Default 1.0 1.0 ug/L YES 2.5-Chloropaphthalene Default 1.0 1.0 ug/L YES 2.5-Chloropaphthalene Default 1.0 1.0 ug/L YES 2.5-Chlorophenol Default 1.0 1.0 ug/L YES 2.5-Methylphenol Default 1.0 1.0 ug/L YES 2.5-Methylphenol Default 1.0 1.0 ug/L YES 2.5-Methylphenol Default 1.0 1.0 ug/L YES 3.8-1-Methylphenol Default 1.0 1.0 ug/L YES 3.8-1-Methylphenol Default 1.0 1.0 ug/L YES 4.5-Bromophenyl Phenyl Ether Default 1.0 1.0 ug/L YES 4.5-Bromophenyl Phenyl Ether Default 1.0 1.0 ug/L YES 4.5-Chloro-3-methylphenol Default 1.0 1.0 ug/L YES 4.5-Chlorophenyl phenyl ether Default 1.0 1.0 ug/L YES 5.5-Chlorophenyl ether Default 1.0 1.0 ug/L Y	1,4-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dichrophenol Default 10	2,4,5-Trichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dimethylphenol Default 1.0 <1.0 ug/L YES 2,4-Dimitrotoluene Default 1.0 <1.0 ug/L YES 2,6-Dimitrotoluene Default 1.0 <1.0 ug/L YES 2,6-Dimitrotoluene Default 1.0 <1.0 ug/L YES 2-Chloronaphthalene Default 1.0 <1.0 ug/L YES 2-Chlorophenol Default 1.0 <1.0 ug/L YES 2-Methylnaphthalene Default 1.0 <1.0 ug/L YES 2-Methylphenol Default 1.0 <1.0 ug/L YES 2-Nitrophenol Default 1.0 <1.0 ug/L YES 2-Nitrophenol Default 1.0 <1.0 ug/L YES 3&-Methylphenol Default 1.0 <1.0 ug/L YES 3-Methylphenol Default 1.0 <1.0 ug/L YES 4-Methylphenol Default 1.0 <1.0 ug/L YES 4-Chloro-3-methylphenol Default 1.0 <1.0 ug/L YES 4-Chloro-4-methylphenol	2,4,6-Trichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2.4-Dintrotoluene	2,4-Dichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,6-Dimitrollene Default 1.0 1.0 ug/L YES	2,4-Dimethylphenol	*	Default	1.0		<1.0	ug/L	YES	
Default 1.0 4.10 ug/L YES	2,4-Dinitrotoluene	*	Default	1.0		<1.0	ug/L	YES	
2-Chilorophenol Default 1.0	2,6-Dinitrotoluene	*	Default	1.0		<1.0	ug/L	YES	
2-Methylaphthalene	2-Chloronaphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Methylphenol	2-Chlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2-Nitrophenol	2-Methylnaphthalene	*	Default	1.0		<1.0	ug/L	YES	
Section Sect	2-Methylphenol	*	Default	1.0		<1.0	ug/L	YES	
## A-Bromophenyl Phenyl Ether ## Befault 1.0 4.10 ug/L YES ## Chloro-3-methylphenol * Default 1.0 4.10 ug/L YES ## Chlorophenyl phenyl ether * Default 1.0 4.10 ug/L YES ## Chlorophenyl phenyl ether * Default 1.0 4.10 ug/L YES ## A-Nitrophenol * Default 5.0 45.0 ug/L YES ## Acenaphthene * Default 1.0 4.10 ug/L YES ## Acenaphthylene * Default 1.0 4.10 ug/L YES ## Acenaphthylene * Default 1.0 4.10 ug/L YES ## Benzo(a)anthracene * Default 1.0 4.10 ug/L YES ## Benzo(a)anthracene * Default 1.0 4.10 ug/L YES ## Benzo(b)fluoranthene * Default 1.0 4.10 ug/L YES ## Benzo(g,hi.)perylene * Default 1.0 4.10 ug/L YES ## Bis(2-chloroethysy)methane * Default 1.0 4.10 ug/L YES ## Bis(2-chloroethysy)methane * Default 1.0 4.10 ug/L YES ## Bis(2-chloroethysy)hether * Default 1.0 4.10 ug/L YES ## Bis(2-chloroethysy)hethalate * Default 1.0 4.10 ug/L YES ## Bis(2-chloroethysy)hethalat	2-Nitrophenol	*	Default	1.0		<1.0	ug/L	YES	
#-Chloro-3-methylphenol	3&4-Methylphenol	*	Default	1.0		<1.0	ug/L	YES	
A-Chlorophenyl plenyl ether * Default 1.0 <1.0 ug/L YES	4-Bromophenyl Phenyl Ether	*	Default	1.0		<1.0	ug/L	YES	
4-Nitrophenyl pintyl tutal 5.0 <5.0 ug/L YES Acenaphthene * Default 1.0 <1.0 ug/L YES Anthracene * Default 1.0 <1.0 ug/L YES Benzo(a)anthracene * Default 1.0 <1.0 ug/L YES Benzo(a)pyrene * Default 1.0 <1.0 ug/L YES Benzo(b)fluoranthene * Default 1.0 <1.0 ug/L YES Bis(2-chloroethoxy)methane * Default 1.0 <1.0 ug/L YES Bis(2-chloroethyl)ether * Default 1.0 <1.0 ug/L YES Dibenz(a,h)anthracene * Default 1.0 <1.0 ug/L YES Dibenz(a,h)anthracene * Default 1.0 <1.0 ug/L YES	4-Chloro-3-methylphenol	*	Default	1.0		<1.0	ug/L	YES	
Acenaphthene	4-Chlorophenyl phenyl ether	*	Default	1.0		<1.0	ug/L	YES	
Acenaphthylene	4-Nitrophenol	*	Default	5.0		<5.0	ug/L	YES	
Anthracene	Acenaphthene	*	Default	1.0		<1.0	ug/L	YES	
Default 1.0	Acenaphthylene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)pyrene * Default 1.0 <1.0 ug/L YES	Anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)pyrene	Benzo(a)anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(g,h,i)perylene * Default 1.0 <1.0 ug/L YES	Benzo(a)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(k)fluoranthen	Benzo(b)fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzyl Buryl Phthalate	Benzo(g,h,i)perylene	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chlorosethys)methane * Default 1.0 <1.0 ug/L YES	Benzo(k)fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chlorosthyl)richiant Pefault 1.0	Benzyl Butyl Phthalate	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroisopropyl)ether * Default 1.0 <1.0 ug/L YES Bis(2-ethylhexyl)phthalate * Default 5.0 <5.0	Bis(2-chloroethoxy)methane	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-thiotisophytylethet Default 1.0	Bis(2-chloroethyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Default 1.0	Bis(2-chloroisopropyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Chrysene * Default 1.0 <1.0 ug/L YES Dibenz(a,h)anthracene * Default 1.0 <1.0	Bis(2-ethylhexyl)phthalate	*	Default	5.0		<5.0	ug/L	YES	
Dioenz(a,n)anunacene Detaut 1.0 \land 1.0 ug/L 1.ES	Chrysene	*	Default	1.0		<1.0		YES	
	Dibenz(a,h)anthracene	*	Default	1.0		<1.0	-	YES	
		*	Default	1.0		<1.0		YES	

Signed:

17/09/2012

Technical Manager (or Deputy):

Brendan Murray

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Page 51 Cork County Council





Acorn Business Campus Mahon Industrial Park, Blackrock. Cork Ireland

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Marie Mortell **Contact Name**

Address Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill,

Tel No Fax No **Customer PO** 022-58102 1035938

QN001139 **Quotation No** B469/12 **Customer Ref**

Report Number Sample Number Date of Receipt **Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

05/09/2012 05/09/2012 Hand Good 17/09/2012 Ground Waters

60213 - 1

60213/002

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC (sub)								
Diethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Dimethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
di-n-Butylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Di-n-octylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Diphenylamine	*	Default	1.0		<1.0	ug/L	YES	
Fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Fluorene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobutadiene	*	Default	1.0		<1.0	ug/L	YES	
Hexachloroethane	*	Default	1.0		<1.0	ug/L	YES	
Indeno(1,2,3-c,d)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Isophorone	*	Default	1.0		<1.0	ug/L	YES	
Naphthalene	*	Default	2.0		<2.0	ug/L	YES	
Nitrobenzene	*	Default	1.0		<1.0	ug/L	YES	
n-Nitrosodi-n-propylamine	*	Default	1.0		<1.0	ug/L	YES	
Pentachlorophenol	*	Default	1.0		<1.0	ug/L	YES	
Phenanthrene	*	Default	1.0		<1.0	ug/L	YES	
Phenol	*	Default	1.0		<1.0	ug/L	YES	
Pyrene	*	Default	1.0		<1.0	ug/L	YES	
VOC Full Suite								
Dichlorodifluoromethane		EO025	10.0		<10.0	ug/L		
Chloromethane		EO025	0.5		<0.5	ug/L		
Ethyl Chloride/Chloroethane		EO025	0.5		<0.5	ug/L		
Vinyl Chloride		EO025	0.5		<0.5	ug/L		
Bromomethane		EO025	0.500		<0.5	ug/L	INAB	
Trichloromonofluoromethane		EO025	0.5		<0.5	ug/L		
Ethyl Ether/Diethyl Ether		EO025	0.500		<0.5	ug/L	INAB	
11 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
Acetone		EO025	2.0		<2.0	ug/L		
Iodomethane/Methyl Iodide		EO025	0.500		<0.5	ug/L	INAB	
Carbon Disulphide		EO025	0.500		<0.5	ug/L	INAB	
Allyl Chloride		EO025	0.500		<0.5	ug/L	INAB	
Dichloromethane		EO025	5.0		<5.0	ug/L	INAB	
Chlormethyl Cyanide/Chloroacetonitrile		EO025	0.500		<0.5	ug/L	INAB	
Nitrobenzene		EO025	0.5		<0.5	ug/L		
Propanenitrile		EO025	10.0		<10.0	ug/L		

Signed:

_ 17/09/2012

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Page 6 of 16

Brendan Murray

Page 52 Cork County Council





ENVIRONMENTAL LABORATORY SERVICES Acorn Business Campus Mahon Industrial Park, Blackrock, Cork Ireland Tel: +353 21 453 6141

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Contact Name Marie Mortell Report Number 60213 - 1 Cork CC(Landfill Bottle Hill) 60213/002 Address Sample Number Bottlehill Landfill, 05/09/2012 Date of Receipt Bottlehill, Date Started 05/09/2012 022-58102 Tel No **Received or Collected** Hand Fax No Condition on Receipt Good **Customer PO** 1035938 Date of Report 17/09/2012 QN001139 **Ground Waters** Quotation No Customer Ref Sample Type B469/12

CERTIFICATE OF ANALYSIS

	EST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
Trans-1,2 Dichloroethene	OC Full St	uite								
MtBE E0025 0.500 -0.5 ug/L INAB 1,1-dichlorochane E0025 0.500 -0.5 ug/L INAB 2,2-dichlorocpopane E0025 0.500 -0.5 ug/L INAB cis-12 Dichlorochene E0025 0.500 -0.5 ug/L INAB 2-Butanone E0025 5.0 -5.0 ug/L INAB Bromochloromethane E0025 0.500 -0.5 ug/L INAB Methacylate E0025 0.500 -0.5 ug/L INAB Methacylonitrile E0025 0.500 -0.5 ug/L INAB Chloroform E0025 0.50 -0.5 ug/L INAB Chloroform E0025 0.500 -0.5	Hexachlorol	butadiene		EO025	0.500		<0.5	ug/L	INAB	
1,1-dichloroethane	Trans-1,2 D	ichloroethene		EO025	0.500		<0.5	ug/L	INAB	
2.2-dichloropropane	MtBE			EO025	0.500		<0.5	ug/L	INAB	
cis-12 Dichloroethene E0025 0.500 <0.5 ug/L NAB 2-Butanone E0025 5.0 <5.0	1,1-dichloro	ethane		EO025	0.500		<0.5	ug/L	INAB	
Description	2,2-dichloro	ppropane		EO025	0.500		<0.5	ug/L	INAB	
Methyl Acrylate E0025 0.500 -0.5 ug/L INAB Bromochloromethane E0025 0.500 -0.5 ug/L INAB Methacrylonitrile E0025 5.0 <0.5	cis-12 Dichl	loroethene		EO025	0.500		<0.5	ug/L	INAB	
Bromochloromethane E0025 0.500 <0.5 ug/L NAB Methacrylonitrile E0025 5.0 <5.0	2-Butanone			EO025	5.0		<5.0	ug/L		
Methacrylonitrile EO025 5.0 <5.0 ug/L Tettalydrofuran EO025 0.500 <0.5	Methyl Acry	ylate		EO025	0.500		<0.5	ug/L	INAB	
Tetrahydrofuran	Bromochlor	omethane		EO025	0.500		< 0.5	ug/L	INAB	
Chloroform E0025 1.000 <1.0 ug/L NAB 1.1.1 richloroethane E0025 0.500 <0.5	Methacrylor	nitrile		EO025	5.0		<5.0	ug/L		
1.1.1-trichloroethane E0025 0.500 <0.5 ug/L NAB 1-Chlorobutane E0025 0.500 <0.5 ug/L NAB 1-Chlorobutane E0025 0.500 <0.5 ug/L NAB 1-Chloroptopene E0025 0.100 <0.1 ug/L NAB 1-Chloroethane E0025 0.100 <0.1 ug/L NAB 1-Chloroethane E0025 0.100 <0.1 ug/L NAB 1-Chloroethane E0025 0.100 <0.1 ug/L NAB 1-Chloroptopane E0025 0.500 <0.5 ug/L NAB 1-Chloroptopane E0025 0	Tetrahydrof	uran		EO025	0.500		<0.5	ug/L	INAB	
Chlorobutane E0025 0.500 -0.5 ug/L NAB	Chloroform			EO025	1.000		<1.0	ug/L	INAB	
Carbon Tetrachloride EO025 0.500 <0.5 ug/L NAB 11 Dichloropropene EO025 0.500 <0.5	1,1,1-trichlo	proethane		EO025	0.500		< 0.5	ug/L	INAB	
11 Dichloropropene	1-Chlorobut	tane		EO025	0.500		<0.5	ug/L	INAB	
Benzene E0025 0.100 <0.1 ug/L NAB 1.2 dicloroethane E0025 0.1 <0.1 ug/L NAB 1.2 dicloroethane E0025 0.100 <0.1 ug/L NAB 1.2-dicloropane E0025 0.500 <0.5 ug/L NAB 1.3 Dibromomethane E0025 0.500 <0.5 ug/L NAB 1.3 Dichloropropene.cis E0025 2.000 <0.2 ug/L NAB 1.3 Dichloropropene.cis E0025 2.000 <0.2 ug/L NAB 1.3 Dichloropropene.trano E0025 2.000 <0.2 ug/L NAB 1.3 Dichloropropene.trano E0025 2.000 <0.5 ug/L NAB 1.3 Dichloropropene.trano E0025 0.500 <0.5 ug/L NAB 1.3 Dichloropropene	Carbon Tetr	achloride		EO025	0.500		<0.5	ug/L	INAB	
1,2 dicloroethane E0025 0.1 <0.1 ug/L NAB Trichloroethene E0025 0.100 <0.1	11 Dichloro	propene		EO025	0.500		<0.5	ug/L	INAB	
Trichloroethene EO025 0.100 <0.1 ug/L NAB 1,2-dichloropropane EO025 0.500 <0.5	Benzene			EO025	0.100		<0.1	ug/L	INAB	
1,2-dichloropropane E0025 0.500 <0.5 ug/L INAB Dibromomethane E0025 0.500 <0.5	1,2 dicloroe	thane		EO025	0.1		<0.1	ug/L	INAB	
Dibromomethane EO025 0.500 <0.5 ug/L NAB Methyl Methacrylate EO025 0.500 <0.5	Trichloroeth	nene		EO025	0.100		<0.1	ug/L	INAB	
Methyl Methacrylate E0025 0.500 <0.5 ug/L INAB Bromodichloromethane E0025 2.000 <2.0	1,2-dichloro	ppropane		EO025	0.500		<0.5	ug/L	INAB	
Bromodichloromethane EO025 2.000 <2.0 ug/L NAB 13 Dichloropropene.cis EO025 2.000 <2.0	Dibromome	thane		EO025	0.500		<0.5	ug/L	INAB	
13 Dichloropropene,cis E0025 2,000 <2.0 ug/L NAB MIBK/4 Methyl 2 Pentanone E0025 2,000 <2.0 ug/L NAB Toluene E0025 0,500 <0.5 ug/L NAB 13 Dichloropropene,trans E0025 2,000 <2.0 ug/L NAB 13 Dichloropropene,trans E0025 2,000 <2.0 ug/L NAB 14 Trichloroethane E0025 2,000 <2.0 ug/L NAB 112 Trichloroethane E0025 0,500 <0.5 ug/L NAB 112 Trichloroethane E0025 0,500 <0.5 ug/L NAB 14.3-dichloropropane E0025 0,500 <0.5 ug/L NAB 1.3-dichloropropane E0025 1,000 <0.1 ug/L NAB 2-Hexanone E0025 1,000 <1.0 ug/L NAB 1.2-dibromoethane E0025 1,000 <1.0 ug/L NAB 1.2-dibromoethane E0025 0,500 <0.5 ug/L NAB 1.3-dibromoethane E0025 0,500 <0.5 ug/L NAB	Methyl Met	hacrylate		EO025	0.500		<0.5	ug/L	INAB	
MIBK/4 Methyl 2 Pentanone E0025 2.000 <2.0 ug/L NAB Toluene E0025 0.500 <0.5	Bromodichl	oromethane		EO025	2.000		<2.0	ug/L	INAB	
Toluene E0025 0.500 <0.5 ug/L NAB 13 Dichloropropene,trans E0025 2.000 <2.0	13 Dichloro	propene,cis		EO025	2.000		<2.0	ug/L	INAB	
13 Dichloropropene,trans E0025 2.000 <2.0 ug/L INAB	MIBK/4 Me	ethyl 2 Pentanone		EO025	2.000		<2.0	ug/L	INAB	
Ethyl Methacrylate E0025 2.000 <2.0 ug/L INAB 112 Trichloroethane E0025 0.500 <0.5	Toluene			EO025	0.500		<0.5	ug/L	INAB	
112 Trichloroethane EO025 0.500 <0.5 ug/L NAB Tetrachloroethene EO025 0.100 <0.1	13 Dichloro	propene,trans		EO025	2.000		<2.0	ug/L	INAB	
Tetrachloroethene	Ethyl Metha	acrylate		EO025	2.000		<2.0	ug/L	INAB	
1.3-dichloropropane EO025 0.500 <0.5 ug/L INAB 2-Hexanone EO025 1.000 <1.0	112 Trichlor	roethane		EO025	0.500		< 0.5	ug/L	INAB	
2-Hexanone EO025 1.000 <1.0 ug/L INAB Dibromochloromethane EO025 1.000 <1.0	Tetrachloroe	ethene		EO025	0.100		<0.1	ug/L	INAB	
Dibromochloromethane EO025 1.000 <1.0 ug/L INAB 1,2-dibromoethane EO025 0.500 <0.5	1,3-dichloro	ppropane		EO025	0.500		<0.5	ug/L	INAB	
1,2-dibromeethane EO025 0.500 <0.5 ug/L INAB Chlorobenzene EO025 0.500 <0.5	2-Hexanone			EO025	1.000		<1.0	ug/L	INAB	
Chlorobenzene EO025 0.500 <0.5 ug/L INAB	Dibromochl	oromethane		EO025	1.000		<1.0	ug/L	INAB	
	1,2-dibromo	pethane		EO025	0.500		<0.5	ug/L	INAB	
1,1,1,2-tetrachloroethane EO025 2.000 <2.0 ug/L INAB	Chlorobenze	ene		EO025	0.500		<0.5	ug/L	INAB	
	1,1,1,2-tetra	chloroethane		EO025	2.000		<2.0	ug/L	INAB	

17/09/2012

Technical Manager (or Deputy): **Brendan Murray**

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Page 7 of 16

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Acorn Business Campus Mahon Industrial Park, Blackrock, Cork Ireland

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Marie Mortell **Contact Name** Address

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill, Bottlehill,

022-58102

Tel No Fax No

Customer PO 1035938 **Quotation No** QN001139 B469/12

Report Number Sample Number Date of Receipt **Date Started**

Received or Collected **Condition on Receipt** Date of Report Sample Type

60213 - 1 60213/002 05/09/2012 05/09/2012

Hand Good 17/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

EST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	009
OC Full Suite								
Ethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
Xylene P&M		EO025	0.500		<0.5	ug/L	INAB	
Xylene -o		EO025	0.500		<0.5	ug/L	INAB	
Styrene		EO025	2.000		<2.0	ug/L	INAB	
Bromoform		EO025	1.000		<1.0	ug/L	INAB	
Isopropylbenzene		EO025	0.500		<0.5	ug/L	INAB	
Bromobenzene		EO025	0.500		<0.5	ug/L	INAB	
1,1,2,2-tetrachloroethane		EO025	0.500		<0.5	ug/L	INAB	
1,2,3-trichloropropane		EO025	2.000		<2.0	ug/L	INAB	
Trans 14 Dichloro 2 Butene, tran		EO025	2.0		<2.0	ug/L		
Propylbenzene		EO025	0.500		<0.5	ug/L	INAB	
2-chlorotoluene		EO025	0.500		<0.5	ug/L	INAB	
4-chlorotoluene		EO025	0.500		<0.5	ug/L	INAB	
1,3,5-trimethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
Tert Butyl Benzene		EO025	0.500		<0.5	ug/L	INAB	
1,2,4-trimethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
sec-butylbenzene		EO025	0.500		<0.5	ug/L	INAB	
1,3-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
P Isopropyltoluene		EO025	0.500		<0.5	ug/L	INAB	
1,4-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
1,2-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
N Butyl Benzene		EO025	0.500		<0.5	ug/L	INAB	
Hexachloroethane		EO025	5.000		<5.0	ug/L	INAB	
1,2-dibromo-3-chloropropane		EO025	2.000		<2.0	ug/L	INAB	
1,2,4-trichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
Naphthalene		EO025	2.0		<2.0	ug/L		
1.2.3-trichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	

Signed: 17/09/2012

Technical Manager (or Deputy):

Brendan Murray

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Page 8 of 16

Page 54 Cork County Council





ENVIRONMENTAL

LABORATORY SERVICES Acorn Business Campus Mahon Industrial Park, Blackrock,

Cork Ireland

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www.irishwatertesting.com



Contact Name Address

Marie Mortell

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill,

Tel No Fax No 022-58102

Customer PO 1035938 QN001139 **Quotation No** B480/12 **Customer Ref**

Report Number Sample Number Date of Receipt **Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

60213 - 1 60213/003 05/09/2012 05/09/2012 Hand

Good 17/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
SVOC (sub)								
1,2,4-Trichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,2-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,3-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,4-Dichlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
2,4,5-Trichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4,6-Trichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dichlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dimethylphenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dinitrotoluene	*	Default	1.0		<1.0	ug/L	YES	
2,6-Dinitrotoluene	*	Default	1.0		<1.0	ug/L	YES	
2-Chloronaphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Chlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2-Methylnaphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Methylphenol	*	Default	1.0		<1.0	ug/L	YES	
2-Nitrophenol	*	Default	1.0		<1.0	ug/L	YES	
3&4-Methylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Bromophenyl Phenyl Ether	*	Default	1.0		<1.0	ug/L	YES	
4-Chloro-3-methylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Chlorophenyl phenyl ether	*	Default	1.0		<1.0	ug/L	YES	
4-Nitrophenol	*	Default	5.0		<5.0	ug/L	YES	
Acenaphthene	*	Default	1.0		<1.0	ug/L	YES	
Acenaphthylene	*	Default	1.0		<1.0	ug/L	YES	
Anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(b)fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(g,h,i)perylene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(k)fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzyl Butyl Phthalate	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroethoxy)methane	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroethyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chloroisopropyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-ethylhexyl)phthalate	*	Default	5.0		<5.0	ug/L	YES	
Chrysene	*	Default	1.0		<1.0	ug/L	YES	
Dibenz(a,h)anthracene	*	Default	1.0		<1.0	ug/L	YES	
Dibenzofuran	*	Default	1.0		<1.0	ug/L	YES	

Signed:

Brendan Murray Technical Manager (or Deputy):

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Page 9 of 16

17/09/2012

Page 55 Cork County Council





ENVIRONMENTAL

LABORATORY SERVICES Acorn Business Campus Mahon Industrial Park, Blackrock, Cork Ireland Tel: +353 21 453 6141

Fax: +353 21 453 6149 www.irishwatertesting.com



Contact Name Marie Mortell Address

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill,

022-58102 Tel No

Fax No

Customer PO

1035938 **Quotation No** QN001139 **Customer Ref** B480/12

Report Number Sample Number Date of Receipt **Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

60213 - 1 60213/003 05/09/2012 05/09/2012

Hand Good 17/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
SVOC (sub)								
Diethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Dimethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
di-n-Butylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Di-n-octylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Diphenylamine	*	Default	1.0		<1.0	ug/L	YES	
Fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Fluorene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobutadiene	*	Default	1.0		<1.0	ug/L	YES	
Hexachloroethane	*	Default	1.0		<1.0	ug/L	YES	
Indeno(1,2,3-c,d)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Isophorone	*	Default	1.0		<1.0	ug/L	YES	
Naphthalene	*	Default	2.0		<2.0	ug/L	YES	
Nitrobenzene	*	Default	1.0		<1.0	ug/L	YES	
n-Nitrosodi-n-propylamine	*	Default	1.0		<1.0	ug/L	YES	
Pentachlorophenol	*	Default	1.0		<1.0	ug/L	YES	
Phenanthrene	*	Default	1.0		<1.0	ug/L	YES	
Pheno1	*	Default	1.0		<1.0	ug/L	YES	
Pyrene	*	Default	1.0		<1.0	ug/L	YES	
VOC Full Suite								
Dichlorodifluoromethane		EO025	10.0		<10.0	ug/L		
Chloromethane		EO025	0.5		<0.5	ug/L		
Ethyl Chloride/Chloroethane		EO025	0.5		<0.5	ug/L		
Vinyl Chloride		EO025	0.5		<0.5	ug/L		
Bromomethane		EO025	0.500		<0.5	ug/L	INAB	
Trichloromonofluoromethane		EO025	0.5		<0.5	ug/L		
Ethyl Ether/Diethyl Ether		EO025	0.500		<0.5	ug/L	INAB	
11 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
Acetone		EO025	2.0		<2.0	ug/L		
Iodomethane/Methyl Iodide		EO025	0.500		<0.5	ug/L	INAB	
Carbon Disulphide		EO025	0.500		<0.5	ug/L	INAB	
Allyl Chloride		EO025	0.500		<0.5	ug/L	INAB	
Dichloromethane		EO025	5.0		<5.0	ug/L	INAB	
Chlormethyl Cyanide/Chloroacetonitrile		EO025	0.500		<0.5	ug/L	INAB	
Nitrobenzene		EO025	0.5		<0.5	ug/L		
Propanenitrile		EO025	10.0		<10.0	ug/L		

Frencan No

17/09/2012

Signed:

Technical Manager (or Deputy):

Brendan Murray

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Page 10 of 16

Page 56 Cork County Council





Acorn Business Campus Mahon Industrial Park,

Blackrock, Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149

 $\underline{www.irishwatertesting.com}$



Contact Name	Marie Mortell	Report Number	60213 - 1
Address	Cork CC(Landfill Bottle Hill)	Sample Number	60213/003
	Bottlehill Landfill,	Date of Receipt	05/09/2012
	Bottlehill,	Date Started	05/09/2012
Tel No	022-58102	Received or Collected	Hand
Fax No		Condition on Receipt	Good
Customer PO	1035938	Date of Report	17/09/2012
Quotation No	QN001139	Sample Type	Ground Waters
Customer Ref	B480/12		

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	00
OC Full Suite								
Hexachlorobutadiene		EO025	0.500		<0.5	ug/L	INAB	
Trans-1,2 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
MtBE		EO025	0.500		<0.5	ug/L	INAB	
1,1-dichloroethane		EO025	0.500		<0.5	ug/L	INAB	
2,2-dichloropropane		EO025	0.500		<0.5	ug/L	INAB	
cis-12 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
2-Butanone		EO025	5.0		<5.0	ug/L		
Methyl Acrylate		EO025	0.500		<0.5	ug/L	INAB	
Bromochloromethane		EO025	0.500		<0.5	ug/L	INAB	
Methacrylonitrile		EO025	5.0		<5.0	ug/L		
Tetrahydrofuran		EO025	0.500		<0.5	ug/L	INAB	
Chloroform		EO025	1.000		<1.0	ug/L	INAB	
1,1,1-trichloroethane		EO025	0.500		<0.5	ug/L	INAB	
1-Chlorobutane		EO025	0.500		<0.5	ug/L	INAB	
Carbon Tetrachloride		EO025	0.500		<0.5	ug/L	INAB	
11 Dichloropropene		EO025	0.500		<0.5	ug/L	INAB	
Benzene		EO025	0.100		<0.1	ug/L	INAB	
1,2 dicloroethane		EO025	0.1		<0.1	ug/L	INAB	
Trichloroethene		EO025	0.100		<0.1	ug/L	INAB	
1,2-dichloropropane		EO025	0.500		<0.5	ug/L	INAB	
Dibromomethane		EO025	0.500		<0.5	ug/L	INAB	
Methyl Methacrylate		EO025	0.500		<0.5	ug/L	INAB	
Bromodichloromethane		EO025	2.000		<2.0	ug/L	INAB	
13 Dichloropropene,cis		EO025	2.000		<2.0	ug/L	INAB	
MIBK/4 Methyl 2 Pentanone		EO025	2.000		<2.0	ug/L	INAB	
Toluene		EO025	0.500		<0.5	ug/L	INAB	
13 Dichloropropene,trans		EO025	2.000		<2.0	ug/L	INAB	
Ethyl Methacrylate		EO025	2.000		<2.0	ug/L	INAB	
112 Trichloroethane		EO025	0.500		<0.5	ug/L	INAB	
Tetrachloroethene		EO025	0.100		<0.1	ug/L	INAB	
1,3-dichloropropane		EO025	0.500		<0.5	ug/L	INAB	
2-Hexanone		EO025	1.000		<1.0	ug/L	INAB	
Dibromochloromethane		EO025	1.000		<1.0	ug/L	INAB	
1,2-dibromoethane		EO025	0.500		<0.5	ug/L	INAB	
Chlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
1,1,1,2-tetrachloroethane		EO025	2.000		<2.0	ug/L	INAB	

17/09/2012 Signed:

> **Brendan Murray** Technical Manager (or Deputy):

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Page 11 of 16





Acorn Business Campus

Mahon Industrial Park, Blackrock,

Cork

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Fax: +353 21 453 6149

Web: www.irishwatertesting.com



Contact Name Marie Mortell

Address Cork CC(Landfill Bottle Hill)

Bottlehill Landfill, Bottlehill,

022-58102

Tel No Fax No

Customer PO

1035938 QN001139

Quotation No QN00113 Customer Ref B480/12 Report Number Sample Number Date of Receipt Date Started

Received or Collected Condition on Receipt Date of Report Sample Type 60213 - 1 60213/003 05/09/2012 05/09/2012 Hand Good

Good 17/09/2012 Ground Waters

CERTIFICATE OF ANALYSIS

				· / // // /-					
TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC Full	Suite								
Ethylbena	tene		EO025	0.500		<0.5	ug/L	INAB	
Xylene P	&M		EO025	0.500		<0.5	ug/L	INAB	
Xylene -c			EO025	0.500		<0.5	ug/L	INAB	
Styrene			EO025	2.000		<2.0	ug/L	INAB	
Bromofor	m		EO025	1.000		<1.0	ug/L	INAB	
Isopropyl	benzene		EO025	0.500		<0.5	ug/L	INAB	
Bromobe	nzene		EO025	0.500		<0.5	ug/L	INAB	
1,1,2,2-te	trachloroethane		EO025	0.500		<0.5	ug/L	INAB	
1,2,3-tricl	ıloropropane		EO025	2.000		<2.0	ug/L	INAB	
Trans 14	Dichloro 2 Butene, tran		EO025	2.0		<2.0	ug/L		
Propylber	nzene		EO025	0.500		<0.5	ug/L	INAB	
2-chlorote	bluene		EO025	0.500		<0.5	ug/L	INAB	
4-chlorote	oluene		EO025	0.500		<0.5	ug/L	INAB	
1,3,5-trin	ethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
Tert Buty	l Benzene		EO025	0.500		< 0.5	ug/L	INAB	
1,2,4-trin	ethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
sec-butyl	penzene		EO025	0.500		<0.5	ug/L	INAB	
1,3-dichlo	probenzene		EO025	0.500		<0.5	ug/L	INAB	
P Isoprop	yltoluene		EO025	0.500		<0.5	ug/L	INAB	
1,4-dichlo	robenzene		EO025	0.500		<0.5	ug/L	INAB	
1,2-dichlo	robenzene		EO025	0.500		<0.5	ug/L	INAB	
N Butyl E	Benzene		EO025	0.500		<0.5	ug/L	INAB	
Hexachlo	roethane		EO025	5.000		<5.0	ug/L	INAB	
1,2-dibro	no-3-chloropropane		EO025	2.000		<2.0	ug/L	INAB	
1,2,4-tricl	ilorobenzene		EO025	0.500		<0.5	ug/L	INAB	
Naphthale	ene		EO025	2.0		<2.0	ug/L		
1.2.3-tricl	lorobenzene		EO025	0.500		<0.5	ug/L	INAB	

Signed: _______ 17/09/2012

Technical Manager (or Deputy): Brendan Murray

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Page 12 of 16





ENVIRONMENTAL

LABORATORY SERVICES Mahon Industrial Park, Blackrock, Cork

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www.irishwatertesting.com



Contact Name Address

Marie Mortell

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill,

Tel No **Fax No** 022-58102

Customer PO Quotation No Customer Ref

1035938 QN001139 B481/12

Report Number Sample Number **Date of Receipt Date Started**

Received or Collected Condition on Receipt Date of Report Sample Type

60213 - 1 60213/004 05/09/2012 05/09/2012

Hand Good 17/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	008
SVOC (su	b)								
1,2,4-Tri	chlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,2-Dichl	orobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,3-Dichl	orobenzene	*	Default	1.0		<1.0	ug/L	YES	
1,4-Dichl	orobenzene	*	Default	1.0		<1.0	ug/L	YES	
2,4,5-Trie	chlorophenol		Default	1.0		<1.0	ug/L	YES	
2,4,6-Trie	chlorophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dichl	orophenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dime	thylphenol	*	Default	1.0		<1.0	ug/L	YES	
2,4-Dinit	rotoluene	*	Default	1.0		<1.0	ug/L	YES	
2,6-Dinit	rotoluene	*	Default	1.0		<1.0	ug/L	YES	
2-Chloro	naphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Chloro	phenol	*	Default	1.0		<1.0	ug/L	YES	
2-Methyl	naphthalene	*	Default	1.0		<1.0	ug/L	YES	
2-Methyl	phenol	*	Default	1.0		<1.0	ug/L	YES	
2-Nitroph	ienol	*	Default	1.0		<1.0	ug/L	YES	
3&4-Met	hylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Bromo	phenyl Phenyl Ether	*	Default	1.0		<1.0	ug/L	YES	
4-Chloro	-3-methylphenol	*	Default	1.0		<1.0	ug/L	YES	
4-Chloro	phenyl phenyl ether	*	Default	1.0		<1.0	ug/L	YES	
4-Nitroph	nenol	*	Default	5.0		<5.0	ug/L	YES	
Acenapht	thene	*	Default	1.0		<1.0	ug/L	YES	
Acenapht	hylene	*	Default	1.0		<1.0	ug/L	YES	
Anthrace	ne	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)	anthracene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(a)	pyrene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(b)	fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(g,	h,i)perylene	*	Default	1.0		<1.0	ug/L	YES	
Benzo(k)	fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Benzyl B	utyl Phthalate	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chl	oroethoxy)methane	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chl	oroethyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-chl	oroisopropyl)ether	*	Default	1.0		<1.0	ug/L	YES	
Bis(2-eth	ylhexyl)phthalate	*	Default	5.0		<5.0	ug/L	YES	
Chrysene	·	*	Default	1.0		<1.0	ug/L	YES	
-	h)anthracene	*	Default	1.0		<1.0	ug/L	YES	
Dibenzof	iıran	*	Default	1.0		<1.0	ug/L	YES	

Signed: .

Technical Manager (or Deputy):

17/09/2012

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Brendan Murray

Page 59 Cork County Council





Acorn Business Campus Mahon Industrial Park,

Blackrock, Cork Ireland

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Contact Name Marie Mortell **Address**

Cork CC(Landfill Bottle Hill)

Bottlehill Landfill,

Bottlehill, 022-58102

Tel No

Fax No

Customer PO 1035938 **Quotation No** QN001139 Customer Ref B481/12

Report Number Sample Number **Date of Receipt Date Started**

Received or Collected **Condition on Receipt** Date of Report Sample Type

60213 - 1 60213/004 05/09/2012 05/09/2012 Hand

Good 17/09/2012 **Ground Waters**

CERTIFICATE OF ANALYSIS

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
SVOC (sub)								
Diethylphthalate		Default	1.0		<1.0	ug/L	YES	
Dimethylphthalate	*	Default	1.0		<1.0	ug/L	YES	
di-n-Butylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Di-n-octylphthalate	*	Default	1.0		<1.0	ug/L	YES	
Diphenylamine	*	Default	1.0		<1.0	ug/L	YES	
Fluoranthene	*	Default	1.0		<1.0	ug/L	YES	
Fluorene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobenzene	*	Default	1.0		<1.0	ug/L	YES	
Hexachlorobutadiene	*	Default	1.0		<1.0	ug/L	YES	
Hexachloroethane	*	Default	1.0		<1.0	ug/L	YES	
Indeno(1,2,3-c,d)pyrene	*	Default	1.0		<1.0	ug/L	YES	
Isophorone	*	Default	1.0		<1.0	ug/L	YES	
Naphthalene	*	Default	2.0		<2.0	ug/L	YES	
Nitrobenzene	*	Default	1.0		<1.0	ug/L	YES	
n-Nitrosodi-n-propylamine	*	Default	1.0		<1.0	ug/L	YES	
Pentachlorophenol	*	Default	1.0		<1.0	ug/L	YES	
Phenanthrene	*	Default	1.0		<1.0	ug/L	YES	
Phenol	*	Default	1.0		<1.0	ug/L	YES	
Pyrene	*	Default	1.0		<1.0	ug/L	YES	
VOC Full Suite								
Dichlorodifluoromethane		EO025	10.0		<10.0	ug/L		
Chloromethane		EO025	0.5		<0.5	ug/L		
Ethyl Chloride/Chloroethane		EO025	0.5		<0.5	ug/L		
Vinyl Chloride		EO025	0.5		<0.5	ug/L		
Bromomethane		EO025	0.500		<0.5	ug/L	INAB	
Trichloromonofluoromethane		EO025	0.5		<0.5	ug/L		
Ethyl Ether/Diethyl Ether		EO025	0.500		<0.5	ug/L	INAB	
11 Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
Acetone		EO025	2.0		<2.0	ug/L		
Iodomethane/Methyl Iodide		EO025	0.500		<0.5	ug/L	INAB	
Carbon Disulphide		EO025	0.500		0.9	ug/L	INAB	
Allyl Chloride		EO025	0.500		<0.5	ug/L	INAB	
Dichloromethane		EO025	5.0		<5.0	ug/L	INAB	
Chlormethyl Cyanide/Chloroacetonitrile		EO025	0.500		<0.5	ug/L	INAB	
Nitrobenzene		EO025	0.5		<0.5	ug/L		
Propanenitrile		EO025	10.0		<10.0	ug/L		

Signed:

17/09/2012

Technical Manager (or Deputy):

Brendan Murray

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AGORA TORY SERVICE:
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Mahon Industrial Park,
Blackrock,

Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149 eb: <u>www.irishwatertesting.com</u>



Contact Name Marie Mortell 60213 - 1 Report Number Cork CC(Landfill Bottle Hill) 60213/004 Address Sample Number Bottlehill Landfill, Date of Receipt 05/09/2012 05/09/2012 Bottlehill. **Date Started** 022-58102 Tel No Received or Collected

 Fax No
 Condition on Receipt
 Good

 Customer PO
 1035938
 Date of Report
 17/09/2012

 Quotation No
 QN001139
 Sample Type
 Ground Waters

 Customer Ref
 B481/12

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC Full	Suite								
Hexachlo	obutadiene		EO025	0.500		<0.5	ug/L	INAB	
Trans-1,2	Dichloroethene		EO025	0.500		<0.5	ug/L	INAB	
MtBE			EO025	0.500		< 0.5	ug/L	INAB	
1,1-dichle	roethane		EO025	0.500		<0.5	ug/L	INAB	
2,2-dichlo	ropropane		EO025	0.500		<0.5	ug/L	INAB	
cis-12 Dio	hloroethene		EO025	0.500		<0.5	ug/L	INAB	
2-Butanor	ie		EO025	5.0		<5.0	ug/L		
Methyl A	crylate		EO025	0.500		<0.5	ug/L	INAB	
Bromochl	oromethane		EO025	0.500		<0.5	ug/L	INAB	
Methacry	onitrile		EO025	5.0		<5.0	ug/L		
Tetrahydr	ofuran		EO025	0.500		<0.5	ug/L	INAB	
Chlorofor	m		EO025	1.000		<1.0	ug/L	INAB	
1,1,1-trich	lloroethane		EO025	0.500		<0.5	ug/L	INAB	
1-Chlorob	utane		EO025	0.500		<0.5	ug/L	INAB	
Carbon To	etrachloride		EO025	0.500		<0.5	ug/L	INAB	
11 Dichlo	ropropene		EO025	0.500		<0.5	ug/L	INAB	
Benzene			EO025	0.100		<0.1	ug/L	INAB	
1,2 diclore	oethane		EO025	0.1		<0.1	ug/L	INAB	
Trichloro	thene		EO025	0.100		<0.1	ug/L	INAB	
1,2-dichlo	ropropane		EO025	0.500		<0.5	ug/L	INAB	
Dibromor	nethane		EO025	0.500		<0.5	ug/L	INAB	
Methyl M	ethacrylate		EO025	0.500		<0.5	ug/L	INAB	
Bromodic	hloromethane		EO025	2.000		<2.0	ug/L	INAB	
13 Dichlo	ropropene,cis		EO025	2.000		<2.0	ug/L	INAB	
MIBK/4 N	Methyl 2 Pentanone		EO025	2.000		<2.0	ug/L	INAB	
Toluene			EO025	0.500		<0.5	ug/L	INAB	
13 Dichlo	ropropene,trans		EO025	2.000		<2.0	ug/L	INAB	
Ethyl Met	hacrylate		EO025	2.000		<2.0	ug/L	INAB	
112 Trich	loroethane		EO025	0.500		<0.5	ug/L	INAB	
Tetrachlo	oethene		EO025	0.100		<0.1	ug/L	INAB	
1,3-dichlo	ropropane		EO025	0.500		<0.5	ug/L	INAB	
2-Hexano	ne		EO025	1.000		<1.0	ug/L	INAB	
Dibromoo	hloromethane		EO025	1.000		<1.0	ug/L	INAB	
1,2-dibror	noethane		EO025	0.500		<0.5	ug/L	INAB	
Chlorober	nzene		EO025	0.500		<0.5	ug/L	INAB	
1,1,1,2-tet	rachloroethane		EO025	2.000		<2.0	ug/L	INAB	

Signed: _______ 17/09/2012

Technical Manager (or Deputy):

Brendan Murray

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Page 15 of 16

Ground Waters



Quotation No

Customer Ref

QN001139

B481/12



ENVIRONMENTAL LABORATORY SERVICES

Acorn Business Campus Mahon Industrial Park,

Blackrock, Cork Ireland

Tel: +353 21 453 6141 Fax: +353 21 453 6149 www.irishwatertesting.com



Contact Name Address	Marie Mortell Cork CC(Landfill Bottle Hill) Bottlehill Landfill, Bottlehill,	Report Number Sample Number Date of Receipt Date Started	60213 - 1 60213/004 05/09/2012 05/09/2012
Tel No Fax No	022-58102	Received or Collected Condition on Receipt	Hand Good
Customer PO	1035938	Date of Report	17/09/2012

CERTIFICATE OF ANALYSIS

Sample Type

TEST ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	oos
VOC Full Suite								
Ethylbenzene		EO025	0.500		22.5	ug/L	INAB	
Xylene P&M		EO025	0.500		20.7	ug/L	INAB	
Xylene -o		EO025	0.500		<0.5	ug/L	INAB	
Styrene		EO025	2.000		2.4	ug/L	INAB	
Bromoform		EO025	1.000		<1.0	ug/L	INAB	
Isopropylbenzene		EO025	0.500		0.9	ug/L	INAB	
Bromobenzene		EO025	0.500		<0.5	ug/L	INAB	
1,1,2,2-tetrachloroethane		EO025	0.500		<0.5	ug/L	INAB	
1,2,3-trichloropropane		EO025	2.000		<2.0	ug/L	INAB	
Trans 14 Dichloro 2 Butene, tran		EO025	2.0		<2.0	ug/L		
Propylbenzene		EO025	0.500		<0.5	ug/L	INAB	
2-chlorotoluene		EO025	0.500		<0.5	ug/L	INAB	
4-chlorotoluene		EO025	0.500		<0.5	ug/L	INAB	
1,3,5-trimethylbenzene		EO025	0.500		< 0.5	ug/L	INAB	
Tert Butyl Benzene		EO025	0.500		<0.5	ug/L	INAB	
1,2,4-trimethylbenzene		EO025	0.500		<0.5	ug/L	INAB	
sec-butylbenzene		EO025	0.500		<0.5	ug/L	INAB	
1,3-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
P Isopropyltoluene		EO025	0.500		< 0.5	ug/L	INAB	
1,4-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
1,2-dichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
N Butyl Benzene		EO025	0.500		<0.5	ug/L	INAB	
Hexachloroethane		EO025	5.000		<5.0	ug/L	INAB	
1,2-dibromo-3-chloropropane		EO025	2.000		<2.0	ug/L	INAB	
1,2,4-trichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	
Naphthalene		EO025	2.0		<2.0	ug/L		
1,2,3-trichlorobenzene		EO025	0.500		<0.5	ug/L	INAB	

	Technical Manager (or Deputy):	Brendan Murray	
Signed :	Frencan A	<i>L</i> .	17/09/2012

NOTES

1.This Report shall not be Reproduced except in full, without the permission of the laboratory and only relates to the items tested. 2.SPEC= Allowable limit or parametric value

- 3.00S=Result which is outside specification highlighted as 00S
- 4.LOQ=Limit of Quantification or lowest value that can be reported for the test
- $5. A CCRED = Indicates\ matrix\ accreditation\ for\ the\ test, a\ blank\ field\ indicates\ not\ accredited$

Page 16 of 16