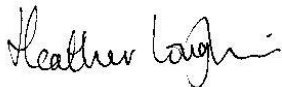


## Annual Environmental Report

**Name:** Molaisín Compost Limited  
**Address:** Kilmolash, Cappoquin, Co Waterford  
**Waste Licence:** W0245-01  
**Reporting Period:** January 1<sup>st</sup> 2014 – December 31<sup>st</sup> 2014

**Signed:**



**Heather Loughlin**  
Environmental Manager

## **Summary:**

Molaisín Compost Limited (Molaisín) commenced waste activities at the facility at Kilmolash, Cappoquin, Co Waterford in 2005. Molaisín operated under a Waterford County Council waste permit up to August 2010. Since August 10<sup>th</sup> Molaisín has operated under EPA Waste Licence W0245-01.

Molaisín specializes in the composting of non-hazardous industrial and sewage sludges, and other non-hazardous biodegradable materials. Molaisín will compost any biodegradable material provided it meets stringent regulatory requirements as well as Molaisín's own waste acceptance criteria.

Molaisín specialises in the recovery of biodegradable materials through the process of industrial composting. Molaisín operate the industrial composting facilities using a controlled static pile, forced aeration system. The process takes place completely indoors. The incoming wastes are mixed with dry finished compost and other dry amendments. The Molaisín method is based on a scientific enhancement of the natural composting process that creates and maintains an environment conducive to the proliferation of specific microbial populations. These microbes are responsible for biodegradation and, when provided with the right balance of moisture, temperature, and oxygen are able to affect the rapid decay of organic material.

The composting of non-hazardous industrial sludges and biosolids produces a very valuable end product from material that was previously considered a waste. The finished product adds an important micronutrient and humus-rich stable material to soil. The compost produced by Molaisín is a class 1 compost. All compost produced on site is sent for Agricultural and Horticultural use.

The attached Environmental Report covers the period 1<sup>st</sup> January 2014 to 31<sup>st</sup> December 2014.

### **1.0 Waste activities carried out at the facility and quantity/composition of waste received, disposed of and recovered during the reporting period:**

Molaisín Compost Limited accepted waste during the reporting period for composting. Molaisín operate an industrial composting facility using a controlled static pile, forced aeration system. The process takes place completely indoors. The incoming wastes are mixed with dry finished compost and other dry amendments.

Attached are summary sheets with details of:

All wastes accepted during the year – no Animal By Products Material is accepted on site

All amendments accepted during the year

All compost moved off site during the reporting period

A weighbridge log is available with details of all loads

*See Attachment 1*

### **2.0 Emissions from the facility:**

There were no emissions from the facility during the reporting period. Air is extracted from the facility through a biofiltration system. The biofilter was monitored during the reporting period both independently and by Molaisín Compost Limited and there were no emissions noted.

*See Attachment 2*

### **3.0 Resource consumption summary**

**Diesel Usage:** 29,955 litres of diesel was used during the reporting period to operate equipment in the facility.

**Electricity Usage:** From Electricity Bills McGill have used approximately 377600 Kwh of electricity at the facility during the reporting period.

#### **4.0 Complaint Summary**

There were no complaints during the reporting period.

#### **5.0 Schedule of Environmental Objectives and Targets**

*See Attachment 3*

#### **6.0 Environmental Management Programme**

*See Attachment 4*

#### **7.0 Noise Monitoring Report Summary**

Noise monitoring was conducted on site by KD Environmental on 23<sup>rd</sup> October 2014. Daytime noise levels were within the permitted day time noise level of 55dB(A) at three noise measurement locations – N1, N2 and N3. Noise levels were above 55dB(A) at N4 due to off site road traffic and not as a result of noise from site activities.

Evening time noise levels were within the permitted evening time noise level of 50 dB(A) at ) at three noise measurement locations – N1, N2 and N3. The noise reading at N4 was above the permitted evening time noise limit but this was due to site traffic on the adjacent road.

There was no significant tonal or impulsive noise from activities during daytime and evening noise monitoring.

The full noise monitoring report is available.

#### **8.0 Ambient Monitoring Summary**

All monitoring conducted during the year is reported in Attachment 2

## **9.0 Emissions and results of environmental monitoring.**

- Compost Analysis summary reports for metals and pathogens are attached
- Sludge Analysis Report is attached. All sludges were analysed on a quarterly basis.
- McGill conducted dust monitoring on site for four different 30 day periods during 2014. The results of these are attached.
- Odour Monitoring Ireland (OMI) conducted quarterly Odour Monitoring on site. Bioaerosol and PM10 monitoring was conducted on two occasions in 2014. The results of these visits showed that there were no significant odours or bioaerosol impacts in the vicinity of the facility and the ambient air concentration levels of PM10 were below the statutory 24-hour average ambient air concentration level of 50ug m<sup>3</sup>.
- Biofilter sampling was conducted as per the licence requirement and a summary sheet and full methodology is attached. There were no environmental concerns with the results.
- Groundwater sampling was conducted as per the licence requirement and a summary sheet is attached. There were no environmental concerns with the results.
- Surfacewater sampling was conducted as per the licence requirement and a summary sheet is attached. There were no environmental concerns with the results.

*See Attachment 2*

## **10.0 Tank and pipeline testing and inspection report**

A report on pipeline testing showing that there are no leaks or spills, this report was submitted to the Agency on completion.

## **11.0 Reported Incidents Summary**

There were no reportable incidents during the reporting year.

## **12.0 Energy Efficiency audit report summary**

Molaisín Compost are using an average of 52KwH electricity and 4.14 litres of diesel per tonne of biosolids accepted at the facility. This is an increase in the usage of diesel when compared to 2013, but is less than the amount used in 2012.

The same amount of electricity was used in 2013 and 2014.

## **13.0 Report on the assessment of the efficiency of the use of raw materials in processes and the reduction in waste generated.**

Amendments for the composting process are the only raw materials used on site at Molaisín Compost Limited. The ratio of amendments to waste used during the reporting period was 0.16 tonnes amendment: 1 tonne waste, this figure is slightly higher than in 2013 but less than in 2012, showing a general downward trend.

There was a 36% reduction in the volume of waste accepted versus compost produced.

## **14.0 Report on progress made and proposals being developed to minimise water demand and the volume of trade effluent discharges**

There are no effluent discharges from the process or facility at Molaisín Compost. Water is not added to the process, the only water used is for the cleaning of delivery trucks and equipment to ensure that no waste is carried from the facility out onto the site. The amount of water used cannot be reduced without compromising the cleanliness of the vehicles, equipment, and the site.

## **15.0 Development/Infrastructural works summary**

There were no development works carried out in 2014.

## **16.0 Management and Staffing Structure**

*See Attachment 5*

## **17.0 Public Information Programme**

*See Attachment 6*

## **18.0 Review of Decommissioning management plan / Closure, restoration and aftercare management plan and Statement of measures in relation to Prevention of Environmental Damage and remedial Actions (Environmental Liabilities)**

The Environmental Liabilities Risk Assessment and Decommissioning Plan was reviewed and submitted to the Agency in January 2014.

## **19.0 Review of Nuisance Controls**

A daily check takes place for Vermin, Birds, Flies, Mud, Dust, Odour, Surface Water, and Biofilter Odour.

## **20.0 Volume of trade effluent / leachate produced and transported off site**

There was no trade effluent or leachate produced on site during the reporting period.

# **Attachment 1**

## **Waste Figures**



**Waste Licence W0245-01**

**Reporting Period January 1st 2014 - 31st December 2014**

**Incoming Waste Material**

<b>Material</b>	<b>EWC</b>	<b>Quantity</b>
wastes from the preparation and processing of meat, fish etc - Sludges from on-site effluent treatment	02 02 04	590.58
Materials unsuitable for consumption or processing	02 03 04	4.06
Wastes from sugar processing	02 04 99	2.54
Waste from the dairy industry - sludges from on-site effluent treatment	02 05 02	380.10
Waste from the drinks industry	02 07 05	40.60
Waste from the paper industry	03 03 05	12.78
wastes from the MFSU of pharmaceuticals - Waste hawthorn leaves	07 05 14	56.90
wastes from the MFSU of pharmaceuticals - Waste leaves & lipids	07 05 99	1,872.44
Sludges from onsite effluent treatment	07 05 12	355.28
Wastes from cosmetics manufacture	07 06 99	28.34
Waste water treatment plant sludges	19 08 05	3,574.52
Sludges from treatment of Industrial waste water	19 08 14	32.92
Edible oils and fats	20 01 25	217.20
garden & park waste	20 02 01	24.50
Septic tank sludge	20 03 04	43.58
	<b>TOTAL</b>	<b>7,236.34</b>

**Incoming Amendment**

<b>Amendment</b>	<b>Quantity</b>
Wood	506.78
Sawdust	800.12
Peat	25.4
	<b>TOTAL</b>
	<b>1,332.3</b>

**Compost Removed from Site**

<b>Use</b>	<b>Quantity</b>
Horticulture	2610.28
	<b>TOTAL</b>
	<b>2,610.28</b>

## **Attachment 2**

### **Lab Analysis**

## Compost Metal Results

Molaisin Reference	Lab Reference	% Organic matter	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
			g/kg						
		Class I Standard	0.7	100	100	100	0.5	50	200
		Class II Standard	1.5	150	150	150	1	75	400
MCL Mar 14	0360/351/03	89.39	0.038	3.578	45.425	97.513	0.55	32.12	210
Normalised to 30% organic matter			<b>0.013</b>	<b>1.201</b>	<b>15.245</b>	<b>32.726</b>	<b>0.185</b>	<b>10.780</b>	<b>70.478</b>
MCL Q2-14	0360/362/01	87.52	0.236	3.759	54.23	71.43	0.103	3.178	107.5
Normalised to 30% organic matter			<b>0.081</b>	<b>1.289</b>	<b>18.589</b>	<b>24.485</b>	<b>0.035</b>	<b>1.089</b>	<b>36.849</b>
MCL Q3-14	0360/371/01	89.67	0.174	4.727	6.644	22.234	0.211	3.165	123.08
Normalised to 30% organic matter			<b>0.058</b>	<b>1.581</b>	<b>2.223</b>	<b>7.439</b>	<b>0.071</b>	<b>1.059</b>	<b>41.178</b>
MCL Q4-14	0360/398/01	88.64	153.37	3.734	58.718	13.675	116.3	3.395	126.161
Normalised to 30% organic matter			<b>51.908</b>	<b>1.264</b>	<b>19.873</b>	<b>4.628</b>	<b>39.361</b>	<b>1.149</b>	<b>42.699</b>

All compost was tested by Fitz Scientific, Drogheda, Co. Louth

## Compost Pathogen Results

Molaisin Reference:	Lab Ref:	Result Faecal Coliforms no/100ml	Result Salmonella per 25g
MCL Jan 2014-1	0360/344/02	<10	
MCL Jan 2014-2	0360/344/03	<10	
MCL Jan 2014-3	0360/344/04	<10	
MCL Jan 2014-4	0360/344/05	<10	
MCL Jan 2014-5	0360/344/06	<10	
MCL Jan 2014-1	77/69803		Not Detected
MCL Jan 2014-2	77/69804		Not Detected
MCL Jan 2014-3	77/69805		Not Detected
MCL Jan 2014-4	77/69806		Not Detected
MCL Jan 2014-5	77/69807		Not Detected
MCL Feb 2014-1	0360/346/01	<10	
MCL Feb 2014-2	0360/346/02	<10	
MCL Feb 2014-3	0360/346/03	<10	
MCL Feb 2014-4	0360/346/04	<10	
MCL Feb 2014-5	0360/346/05	<10	
MCL Feb 14-1	79/43511		Not Detected
MCL Feb 14-2	79/43512		Not Detected
MCL Feb 14-3	79/43513		Not Detected
MCL Feb 14-4	79/43514		Not Detected
MCL Feb 14-5	79/43515		Not Detected

<b>Molaisin Reference:</b>	<b>Lab Ref:</b>	<b>Result Faecal Coliforms no/100ml</b>	<b>Result Salmonella per 25g</b>
MCL March 1	036/350/01	<10	
MCL March 2	036/350/02	<10	
MCL March 3	036/350/03	<10	
MCL March 4	036/350/04	<10	
MCL March 5	036/350/05	<10	
MCL March 1	79/66641		Not Detected
MCL March 2	79/66642		Not Detected
MCL March 3	79/66643		Not Detected
MCL March 4	79/66644		Not Detected
MCL March 5	79/66645		Not Detected
MCL Q2-14 Sample 1	82/26726		Not Detected
MCL Q2-14 Sample 2	82/26727		Not Detected
MCL Q2-14 Sample 3	82/26728		Not Detected
MCL Q2-14 Sample 4	82/26729		Not Detected
MCL Q2-14 Sample 5	82/26730		Not Detected
MCL Q2-14 Sample 1	0360/363/01	<10	
MCL Q2-14 Sample 2	0360/363/02	<10	
MCL Q2-14 Sample 3	0360/363/03	<10	
MCL Q2-14 Sample 4	0360/363/04	<10	
MCL Q2-14 Sample 5	0360/363/05	<10	
MCLQ3-14 Sample 1	0360/375/01		Not Detected
MCLQ3-14 Sample 2	0360/375/02		Not Detected
MCLQ3-14 Sample 3	0360/375/03		Not Detected
MCLQ3-14 Sample 4	0360/375/04		Not Detected
MCLQ3-14 Sample 5	0360/375/05		Not Detected
MCLQ4-2014 Sample 1	MCGI-199291214	<10	
MCLQ4-2014 Sample 2	MCGI-199291215	<10	
MCLQ4-2014 Sample 3	MCGI-199291216	<10	
MCLQ4-2014 Sample 4	MCGI-199291217	150	
MCLQ4-2014 Sample 5	MCGI-199291218	<10	
MCLQ4-2014 Sample 1	0360/404/09		Not Detected
MCLQ4-2014 Sample 2	0360/404/10		Not Detected
MCLQ4-2014 Sample 3	0360/404/11		Not Detected
MCLQ4-2014 Sample 4	0360/404/12		Not Detected
MCLQ4-2014 Sample 5	0360/404/13		Not Detected

## Surface Water Results

Analytical Technique	Units	Lab Reference	0360/361/01	1596980
		Molaisin Reference	MCL 2014	MCL SW1
Colorimetry	mg/L as N	Ammonia	0.422	1.5
Electrometry	mg/L	BOD	<2	<3
Filtration/Drying @104C	mg/L	Solids (Total Suspended)	<2	<2

All testing was completed by Fitz Scientific, Co Louth and Exova, Cork.

## Sludge Analysis

Lab Reference	Dry Matter	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Molybdenum	Selenium
	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
0360/348/01	5.1	0.007	0.013	0.149	0.015	0.0009	0.029	2.526	<0.005	0.024
0360/348/03	16.76	0.004	0.58	1.265	0.197	0.0006	0.348	288.5	0.042	0.0096
0360/348/04	4.42	0.011	0.333	0.353	0.073	0.002	0.149	4.775	0.0147	0.045
0360/348/05	9.47	0.006	0.017	0.179	0.754	0.0001	0.024	9.85	0.013	0.027
0360/348/06	0.8	0.0048	0.016	0.161	0.013	0.00005	0.013	0.253	<0.005	<.002
0360/348/08	5.59	<0.01	0.56	4.247	34.876	0.014	0.477	24.718	0.361	<0.01
0360/348/09	12.87	<0.01	0.916	4.977	0.621	0.002	0.807	31.597	0.87	<0.01
0360/348/10	12.56	<0.01	0.393	2.936	4.216	0.011	1.413	9.922	0.186	<0.01
0360/348/11	47.28	<0.01	0.17	6.105	2.947	0.002	0.442	4.735	0.061	<0.01
0360/353/01	1.94	<0.01	1.792	12.71	<0.01	0.0035	3.304	32.02	0.474	1.232
0360/353/02	16.47	0.155	4.631	65.372	23.477	0.156	3.46	109	0.882	0.61
0360/353/03	50.42	<0.01	4.244	14.056	5.607	0.637	5.749	251.57	0.787	1.469
0360/353/01	11.01	0.014	0.873	2.477	0.264	0.011	0.738	19.15	0.232	<0.01
0360/360/02	5.05	0.0054	0.0129	0.748	0.0308	0.004	0.043	3.228	0.0075	0.033
0360/360/03	14.49	0.088	3.64	44.99	6.198	0.126	2.764	113.5	1.204	0.728
0360/360/04	13.11	0.014	0.668	16.78	0.47	0.0089	0.658	26.48	0.171	<0.01
0360/360/05	0.34	<0.005	0.0013	0.041	0.0039	0.0015	<0.0022	2.335	<.005	<0.002
0360/360/06	14.52	0.168	2.931	47.5	6.413	0.064	2.334	100.4	0.689	1.39
0360/360/07	7.37	<0.01	0.673	4.478	63.9	0.041	0.785	53.25	0.359	<0.01
0360/360/08	50.57	<0.01	0.127	5.38	0.255	0.015	0.275	14.12	0.038	0.164
0360/360/09	4.01	<0.0005	0.0249	0.439	0.13	0.00016	0.072	1.471	<0.005	<0.002
0360/360/10	15.66	0.147	2.822	30.19	4.764	0.063	1.821	79.13	0.623	<0.01
0360/360/11	12.28	0.028	1.365	6.125	0.382	0.015	1.527	39.77	0.45	0.533
0360/366/01	16.75	<0.01	2.798	46.681	13.897	0.0908	1.825	74.27	1.757	0.396
0360/366/02	18.36	<0.01	2.172	46.979	5.028	0.033	2.488	106.357	0.933	0.296
0360/366/03	0.47	<0.01	0.193	1.65	<0.01	0.0088	0.238	18.83	<0.005	2.295
0360/366/04	14.83	<0.01	6.351	5.318	0.452	0.009	2.162	14.584	0.275	<0.01
0360/377/01	7.92	0.022	0.929	16.084	2.329	0.074	1.218	31.958	0.373	<0.01
0360/377/02	7.59	<0.01	0.726	5.08	88.2	0.957	0.9	42.043	0.853	<0.01
0360/377/03	51.59	<0.01	<0.01	6.506	<0.01	0.046	0.253	4.722	0.119	<0.01
0360/377/04	13.2	0.0959	3.021	51.447	7.111	0.126	2.334	100.875	0.814	1.247
0360/377/05	11.71	0.025	1.555	25.272	3.272	0.102	1.478	68.732	0.569	0.419
0360/377/06	13.89	0.064	2.81	40.843	4.231	0.253	2.028	89.417	1.131	0.894

0360/377/07	13.21	0.199	4.483	71.481	11.991	0.216	2.847	125.487	1.2	1.464
0360/377/08	10.9	0.015	2.348	30.338	4.42	0.197	1.788	64.222	0.538	0.643
0360/377/09	47.3	0.045	1.067	3.888	3.529	0.146	1.591	17.987	0.383	0.237
0360/377/10	7.51	<0.01	1.05	13.124	0.351	0.148	0.723	19.779	0.269	<0.01
0360/397/01	10.77	<10	1.062	16.027	2.384	0.063	0.872	42.155	1.974	<10
0360/397/07	27.26	0.083	1.388	4.001	2.169	<0.002	1.71	27.1	1.447	0.924
0360/397/04	18.45	<0.01	0.901	1.931	<0.01	0.0096	0.661	7.247	0.47	<0.01
0360/397/03	0.8	<0.01	0.033	0.345	0.056	0.002	0.028	1.287	0.069	0.054
0360/397/08	0.31	<0.01	0.072	0.825	0.062	0.049	0.48	2.251	0.068	0.031
0360/397/06	17.76	0.133	3.777	64.273	7.977	0.134	2.566	91.089	1.251	1.61
0360/397/05	8.4	<0.01	0.408	3.84	58.698	0.028	0.632	30.287	0.784	0.279

## Biofilter Monitoring

### Colormetric Indicator Tube Testing

#### Results of Monitoring March 2014

Sample	Ammonia NH <sub>3</sub> (ppm)	Hydrogen Sulfide H <sub>2</sub> S (ppm)	Total Mercaptans
S1	<5	Not detected	Not detected
S2	<5	Not detected	Not detected

Full Monitoring Report is available

#### Results of Monitoring 20<sup>th</sup> November 2014

Sample	Ammonia NH <sub>3</sub> (ppm)	Hydrogen Sulfide H <sub>2</sub> S (ppm)	Total Mercaptans
S1	Not detected	Not detected	Not detected
S2	<5	Not detected	Not detected

Full Monitoring Report is available

#### Lab Analysis of Biofilter

		<b>Lab Reference</b>	<b>0360/364/01</b>	<b>0360/373/01</b>
		<b>Units</b>		
%	Drying at 104c	% Moisture Content	72.32	56.65
mg/Kg as N	Colorimetry	Ammonia (Solid)	8.15	2406
ph Units	Electrometry	pH	4.3	6.3
no/g	Incubation @ 22c/72H	TVC's	125000	60000
no/g	Incubation @ 37c/48H		78000	200000

All lab analysis was conducted by Southern Scientific, Killarney and Fitz Scientific, Drogheda

#### Odour Monitoring

	<b>31.03.2014</b>	<b>23.05.2014</b>	<b>30.9.2015</b>	<b>11.11.2014</b>
Average Inlet Odour Conc (OuE/m3)	23,168	25,022	27,026	25,022
Exhaust Odour Conc (OuE/m3)	1,694	2,298	2,305	2,325
Average Removal Efficiency %	92	91	92	91

All monitoring was carried out by Odour Monitoring Ireland.  
Full reports are available.

#### Particulate Monitoring

<b>Date</b>	<b>Statutory 24 hr average conc.</b>	<b>PM10 (<math>\mu\text{g}/\text{m}^3</math>)</b>
23.4.14	50 $\mu\text{g}/\text{m}^3$ PM10	6
11.11.14	50 $\mu\text{g}/\text{m}^3$ PM10	6.5

All monitoring was carried out by Odour Monitoring Ireland.  
Full reports are available.

#### Bioaerosol Monitoring

<b>23rd April 2014</b>			
<b>LOCATION ID</b>	<b>Average Asperillus fumigatus concentration (CFU m-3) 1</b>	<b>Average Mesophilic Bacteria concentration (CFU m-3) 1</b>	<b>Sample Count</b>
Cappo 1	<15	8	6
Cappo 2	<19	36	6
Cappo 3	<83	90	6

All monitoring was carried out by Odour Monitoring Ireland.  
Full reports are available.

## Dust Monitoring

<i>McGill Reference</i>	<i>Lab Reference</i>	<i>Units</i>	<i>Result</i>
MCL DM1 Q1-2014	0360/352/01	mg/m <sup>2</sup> /day	58.71
MCL DM2 Q1-2014	0360/352/02	mg/m <sup>2</sup> /day	65.53
MCL DM3 Q1-2014	0360/352/03	mg/m <sup>2</sup> /day	53.47
MCL DM4 Q1-2014	0360/352/04	mg/m <sup>2</sup> /day	52.95
MCL Q2-14 DM1	0360/365/01	mg/m <sup>2</sup> /day	22.54
MCL Q2-14 DM2	0360/365/02	mg/m <sup>2</sup> /day	55.04
MCL Q2-14 DM3	0360/365/03	mg/m <sup>2</sup> /day	55.04
MCL Q2-14 DM4	0360/365/04	mg/m <sup>2</sup> /day	40.89
MCL Q3-2014 DM1	0360/374/01	mg/m <sup>2</sup> /day	42.75
MCL Q3-2014 DM2	0360/374/02	mg/m <sup>2</sup> /day	38.79
MCL Q3-2014 DM3	0360/374/03	mg/m <sup>2</sup> /day	64.48
MCL Q3-2014 DM4	0360/374/04	mg/m <sup>2</sup> /day	38.27
MCL Q4-2014 DM1	0360/405/01	mg/m <sup>2</sup> /day	34.08
MCL Q4-2014 DM2	0360/405/02	mg/m <sup>2</sup> /day	44.56
MCL Q4-2014 DM3	0360/405/03	mg/m <sup>2</sup> /day	341.8
MCL Q4-2014 DM4	0360/405/04	mg/m <sup>2</sup> /day	37.74

All analysis was conducted by Fitz Scientific, Drogheda, Co Louth

## Groundwater monitoring

	<b>Units</b>	<b>GW1</b>	<b>GW2</b>	<b>GW3</b>
Ammonia Nitrogen (as N)	mg/l	<0.05	<0.05	5.4
Nitrate Nitrogen (as N)	mg/l	4.9	3.5	16.8
Conductivity	uS/cm	274	309	305
pH Value	pH unit	6.6	6.6	6.3
Chloride	mg/l	19	17	16
Total Nitrogen	mg/l	4.5	3.4	22
Total Coliforms	MPN/100ml	<3	23	9
Faecal Coliforms	MPN/100ml	<3	23	9
Phenol (w)	µg/l	<1	<1	<1
Bis(2-chloroethyl)ether (w)	µg/l	<1	<1	<1
2-Chlorophenol (w)	µg/l	<1	<1	<1
1,2-Dichlorobenzene (SVOC) (w)	µg/l	<1	<1	<1
Bis(2-chloroisopropyl)ether (w)	µg/l	<1	<1	<1



	Units	GW1	GW2	GW3
2-Methylphenol (w)	µg/l	<1	<1	<1
N-nitrosodi-n-propylamine (w)	µg/l	<1	<1	<1
Hexachloroethane (w)	µg/l	<1	<1	<1
4-Methylphenol (w)	µg/l	<1	<1	<1
Nitrobenzene (w)	µg/l	<1	<1	<1
Isophorone (w)	µg/l	<1	<1	<1
2-Nitrophenol (w)	µg/l	<1	<1	<1
2,4-Dimethylphenol (w)	µg/l	<1	<1	<1
Bis(2-chloroethoxy)methane (w)	µg/l	<1	<1	<1
2,4-Dichlorophenol (w)	µg/l	<1	<1	<1
1,2,4-Trichlorobenzene (SVOC) (w)	µg/l	<1	<1	<1
naphthalene (SVOC) (w)	µg/l	<1	<1	<1
Hexa chlorobutadiene (w)	µg/l	<1	<1	<1
4-Chloro-3-Methylphenol (w)	µg/l	<1	<1	<1
2-methylnaphthalene (w)	µg/l	<1	<1	<1
2,4,5-Trichlorophenol (w)	µg/l	<1	<1	<1
2-chloronaphthalene (w)	µg/l	<1	<1	<1
Acenaphthylene (SVOC) (w)	µg/l	<1	<1	<1
Dimethyl phthalate (w)	µg/l	<5	<5	<5
2,6-dinitrotoluene (w)	µg/l	<5	<5	<5
Acenaphthene (SVOC) (w)	µg/l	<1	<1	<1
Dibenzofuran (w)	µg/l	<1	<1	<1
2,4-dinitrotoluene (w)	µg/l	<5	<5	<5
4-Nitrophenol (w)	µg/l	<10	<10	<10
Fluorene (SVOC) (w)	µg/l	<1	<1	<1
Diethylphthalate (w)	µg/l	<5	<5	<5
4-chlorophenyl-phenylether (w)	µg/l	<1	<1	<1
N-nitrosodiphenylamine (w)	µg/l	<1	<1	<1
4-Bromophenyl-phenyl ether (w)	µg/l	<1	<1	<1
Hexachlorobenzene (w)	µg/l	<1	<1	<1
Pentachlorophenol (w)	µg/l	<5	<5	<5
Phenanthrene (SVOC) (w)	µg/l	<1	<1	<1
Anthracene (SVOC) (w)	µg/l	<1	<1	<1
Carbazole (w)	µg/l	<1	<1	<1
Di-n-butylphthalate (w)	µg/l	<5	<5	<5
Fluoranthene (SVOC) (w)	µg/l	<1	<1	<1
Pyrene (SVOC) (w)	µg/l	<1	<1	<1
Benzyl butyl phthalate (w)	µg/l	<5	<5	<5
Benzo(a)anthracene (SVOC) (w)	µg/l	<1	<1	<1
Chrysene (SVOC) (w)	µg/l	<1	<1	<1
bis(2-ethylhexyl) phthalate (w)	µg/l	<5	<5	<5
Di-n-octyl phthalate (w)	µg/l	<5	<5	<5
Benzo(b)fluoranthene (SVOC) (w)	µg/l	<1	<1	1

	Units	GW1	GW2	GW3
Benzo(k)fluoranthene (SVOC) (w)	µg/l	<1	<1	<1
Benzo(a)pyrene (SVOC) (w)	µg/l	<1	<1	2
Indeno(1,2,3-cd)pyrene (SVOC) (w)	µg/l	<1	<1	1
Dibenzo(a,h)anthracene (SVOC) (w)	µg/l	<1	<1	<1
1,3-Dichlorobenzene (SVOC) (w)	µg/l	<1	<1	<1
1,4-Dichlorobenzene (SVOC) (w)	µg/l	<1	<1	<1
2,4,6-Trichlorophenol (w)	µg/l	<1	<1	<1
4,6-Dinitro-2-Methylphenol (w)	µg/l	<10	<10	<10
Benzo(g,h,i)perylene (SVOC) (w)	µg/l	<1	<1	1
Vinyl Chloride (w)	µg/l	<5	<5	<5
Bromomethane (w)	µg/l	<5	<5	<5
Trichlorofluoromethane (w)	µg/l	<5	<5	<5
1,1-Dichloroethane (w)	µg/l	<5	<5	<5
2,2-Dichloropropane (w)	µg/l	<5	<5	<5
Bromochloromethane (w)	µg/l	<5	<5	<5
Chloroform (w)	µg/l	<5	<5	<5
1,1,1-Trichloroethane (w)	µg/l	<5	<5	<5
Carbon tetrachloride (w)	µg/l	<5	<5	<5
1,1-Dichloropropene (w)	µg/l	<5	<5	<5
Benzene (w) AN15 µg/l	µg/l	<5	<5	<5
1,2-Dichloroethane (w)	µg/l	<5	<5	<5
Trichloroethylene (w)	µg/l	<5	<5	<5
1,2-Dichloropropane (w)	µg/l	<5	<5	<5
Dibromomethane (w)	µg/l	<5	<5	<5
Bromodichloromethane (w)	µg/l	<5	<5	<5
cis-1,3-Dichloropropene (w)	µg/l	<5	<5	<5
Toluene (w)	µg/l	<5	<5	<5
trans-1,3-Dichloropropene	µg/l	<5	<5	<5
1,1,2-Trichloroethane (w)	µg/l	<5	<5	<5
Tetrachloroethylene (w)	µg/l	<5	<5	<5
1,3-Dichloropropane (w)	µg/l	<5	<5	<5
1,2-Dibromoethane (w)	µg/l	<5	<5	<5
Chlorobenzene (w)	µg/l	<5	<5	<5
1,1,1,2-Tetrachloroethane (w)	µg/l	<5	<5	<5
Ethylbenzene (w)	µg/l	<5	<5	<5
m,p-Xylene (w)	µg/l	<5	<5	<5
o-Xylene (w)	µg/l	<5	<5	<5
Styrene (w)	µg/l	<5	<5	<5
Bromoform (w)	µg/l	<5	<5	<5
iso-Propylbenzene (w)	µg/l	<5	<5	<5
Bromobenzene (w)	µg/l	<5	<5	<5
1,2,3-Trichloropropane (w)	µg/l	<5	<5	<5
n-Propylbenzene (w)	µg/l	<5	<5	<5

	Units	GW1	GW2	GW3
2-Chlorotoluene (w)	µg/l	<5	<5	<5
1,3,5-Trimethylbenzene (w)	µg/l	<5	<5	<5
4-Chlorotoluene (w)	µg/l	<5	<5	<5
tert-Butylbenzene (w)	µg/l	<5	<5	<5
1,2,4-Trimethylbenzene (w)	µg/l	<5	<5	<5
sec-Butylbenzene (w)	µg/l	<5	<5	<5
1,3-Dichlorobenzene (VOC) (w)	µg/l	<5	<5	<5
1,4-Dichlorobenzene (VOC) (w)	µg/l	<5	<5	<5
n-Butylbenzene (w)	µg/l	<5	<5	<5
1,2-Dichlorobenzene (VOC) (w)	µg/l	<5	<5	<5
1,2-Dibromo-3-chloro-propane (w)	µg/l	<5	<5	<5
1,2,4-Trichlorobenzene (VOC) (w)	µg/l	<5	<5	<5
Hexachlorobutadiene (w)	µg/l	<5	<5	<5
1,2,3-Trichlorobenzene (w)	µg/l	<5	<5	<5
1,1,2,2-Tetrachloroethane (w)	µg/l	<5	<5	<5
1,1-Dichloroethylene (w)	µg/l	<5	<5	<5
4-isopropyltoluene (w)	µg/l	<5	<5	<5
Chlorodibromomethane (w)	µg/l	<5	<5	<5
cis-1,2-Dichloroethylene (w)	µg/l	<5	<5	<5
Naphthalene (VOC) (w)	µg/l	<5	<5	<5
trans-1,2-Dichloroethylene (w)	µg/l	<5	<5	<5

All analysis was conducted by Exova, Cork

## **Attachment 3**

# **Environmental Objectives and Targets**

**MCL7 Objectives and Targets**

<b>Objective</b>	<b>Target</b>
Biofilter Maintenance	<ol style="list-style-type: none"> <li>1. Biofilter to be monitored on a weekly basis, and dug and reseeded as required</li> </ol>
Develop written procedures	<ol style="list-style-type: none"> <li>1. Standard operating procedures are in place, these need to be upgraded to include every aspect of the process</li> </ol>
Training	<ol style="list-style-type: none"> <li>1. On-going training required for all staff in updated health and safety and operational issues</li> </ol>
Monitoring	<ol style="list-style-type: none"> <li>1. Follow schedule based on licence requirements</li> <li>2. List of consultants in place to conduct monitoring</li> </ol>
Staff	<ol style="list-style-type: none"> <li>1. Adequate cover if an employee is on holidays or away from the facility</li> <li>2. Training in advance notification of absence</li> </ol>
Raw Material Usage	<ol style="list-style-type: none"> <li>1. Monitor Raw Material usage and analyse results</li> <li>2. Put procedures in place to maximise efficiency of raw material usage</li> </ol>
Energy Audit	<ol style="list-style-type: none"> <li>1. Reduce Energy consumption on site</li> <li>2. Review Energy Suppliers</li> </ol>

## **Attachment 4**

# **Environmental Management Programme**

## **MCL8 Environmental Management Programme**

The responsibility of implementing the Environmental Management System lies with the appointed Environmental Team:

Heather Loughlin Environmental Manager

Lucinda Blyth Administration Manager

Noel Lyons General Manager

Niall Carroll Facilities Manager

Yevgeniy Chizhikov Factory Manager

The Environmental Management Programme (EMP) for Molaisín Compost Ltd. will be updated periodically.

The EMP for Molaisín Compost Ltd. is as follows:

<b>Environmental Management Plan</b>	<b>Responsibility</b>	<b>Target Date</b>
Onsite Training of Operators	Niall Carroll	Ongoing
Carry out review of EMS and identify areas for improvement	Heather Loughlin	July 2015
Investigate potential for reducing monitoring requirements due to proven track record	Heather Loughlin	December 2015
Monitor energy usage and identify opportunities for reductions	Heather Loughlin	December 2015

## **Attachment 5**

# **Management Structure**



## **MCL5            Structure and Responsibility**

### **Roles and Qualifications**

**James H. McGill, Chief Scientific Advisor and founder of McGill in Ireland, passed away in late 2014. .**

**M. Noel Lyons, Managing Director.** Mr. Lyons is also a founder of the McGill group and president of McGill (U.S.), with 17 years in the field of waste management. He is a graduate of the Waterford Institute of Technology and holds a certificate of supervisory management (with distinction) from the Irish Management Institute, and a certificate of technical competency in composting from the University of Maine. Noel is responsible for overall guidance and management of the company. Noel has a unique combination of technical and sales knowledge in feedstocks, composting and transportation. He has accomplished significant business results in challenging enterprise environments over the past 15 years. Noel has pioneered product marketing of compost as a revenue-producing service in North Carolina. Noel is currently splitting his time between America and Ireland. Noel is a director of Molaisín Compost Ltd.

**Heather Loughlin replaced Fiona O’Sullivan as Environmental Manager in 2014.** Heather has a BSc (Hons) in Applied Chemistry from Sheffield Hallam University and an MSc in Environmental Resources from Salford University. She has worked as an Environmental Consultant in the UK and Ireland since 1996, specialising in Environmental Management Systems, Environmental Auditing and Training. For the last twelve years she has worked predominantly in the field of Waste Management in Ireland and has extensive knowledge of waste management and planning regulations having worked with many private companies in the waste management sector. Heather is responsible for ensuring environmental compliance with all regulations.

Duties:

- All environmental monitoring as per Planning Permissions and Waste Permit or Waste Licence
- Ensuring pre acceptance criteria are met for incoming waste
- Process control monitoring
- Product quality assurance
- Implementation of environmental management system
- Research and development
- Waste management
- Industrial and environmental compliance
- Health and Safety

**Niall Carroll, Facilities Manager.** Mr. Carroll has been with McGill (Ireland) since its start-up, managing daily operations and serving as a technical specialist serving for Ireland and U.S. plants. His expertise is in factory management with particular knowledge in machine maintenance. Niall spent three months at the McGill Composting factory in North Carolina in early 2000 where he was trained in compost plant management. He has completed courses in the United States to qualify him for position of factory manager, and to enable him to train in others for this position, including qualifying as Compost Facility Operator and Process Engineer at the University of Winthrop in Charlotte, South Carolina. This course would be of similar level to recommended Fás course. He has also completed an intensive course in Composting in North Carolina. Niall is facilities manager of McGill Environmental Systems (Ireland) Ltd. Niall is a director of Molaisín Compost Ltd.

**Yevgeniy Chizhikov, Factory Manager.** Yevgeniy has been trained in all aspects of factory management by Niall Carroll. Yevgeniy has successfully completed the Fás Waste Management Course.

The factory manager is responsible for the daily operation of the composting facility. The manager can delegate responsibility to his assistant manager and jobs to the general operators; however it is his duty to oversee any delegated work, and ensure that it is completed to a satisfactory standard. The responsibilities and duties of the factory manager are detailed as follows:

- Daily operation of the composting facility and supervision of all factory staff.
- Factory operator training

- Ensuring that all vehicles entering and leaving the facility meet McGill Environmental Systems (Irl.) Ltd. requirements.
- Supervising the landspreading of compost
- Ensure that incoming biosolids have been approved by the Environmental Manager.
- Responsible for all factory staff and the delegation of work
- Responsible for health and safety in the factory
- Responsible for ensuring that incoming materials are consistent, of good quality and are suitable for composting.
- Ensuring that raw material expenditure is not overly excessive.
- Ensure that a continuous throughput of material is maintained while keeping below 1000 cubic metres of waste material on site at any one time.
- Ensuring that the factory grounds are maintained to as high a standard as possible.
- Responsible for the implementation of the Environmental Management System on site

**Lucinda Blyth, Administration Manager.** Lucinda has been with McGill since 2002. Among her responsibilities are office administration, human resources and record keeping. Lucinda's previous experience includes six years as Assistant to the Chairman of a Private Bank in London, several years as Administration Manager at a Strategy Consultancy based in London, Paris and Rome. Lucinda has also spent time working for a middle-eastern royal family organizing the logistics and staffing of several large palaces and houses throughout the world and a fleet of aeroplanes worldwide.

Lucinda is responsible for:

- Day to day running of the office
- Records of Biosolids / Raw Materials entering the facility
- Payroll
- Dealing with Incoming Loads from Clients - weigh in/out
- Administration and update of Company Database
- Dealing with Reporting information from the reporting database system
- Preparation of Weekly reports for Management
- Preparation of Purchase Orders to vendors

- Monthly Invoicing

## **Factory Operators**

### **The duties of the factory operator include:**

- knowledge of composting process, temperature range etc.
- mixing of incoming biosolids with dry amendments at the correct ratio
- ensuring that all pipes are clean prior to placing mix in bay
- correct method of filling the composting bays
- placing temperature probe in bay
- removal of finished compost from bays
- landspreading of compost / filling haulage trucks with compost
- visual inspection of quality of incoming biosolids
- response to the delivery of unacceptable materials
- visual inspection of vehicles delivering biosolids and raw materials
- cleaning of wheels and body of vehicles prior to leaving the facility
- ensuring all vehicles are covered entering and leaving the facility
- awareness of irregularities in the system, e.g. temperatures not rising correctly
- emergency response
- operation of control panel and aeration fans
- procedure for opening / closing facility at beginning and end of working day
- operation of the loader and mixing equipment
- safety procedures to be followed when operating heavy machinery, within, and outside the building
- keeping internal passageways and tipping area clear of biosolids
- maintenance of plant and machinery

## **Attachment 6**

### **Communications Procedure**

## **MCL10 Communications Procedure**

1. The purpose of this procedure is to describe the methods of communication at Molaisín Compost Ltd.
2. The procedure applies to all communications, internal and external.
3. The procedure refers to:
  - Waste Licence W0245-01
  - Planning Permission PD.02.681
4. Internal Communication
  - Management Review of EMS
  - Notice Board

The organization regards verbal communication to be an important aspect due to its size.

### **5. External Communication**

As per Licence Notification: In the event of any incident which may result in water, soil or air pollution, the Environmental Manager shall immediately report the incident to the EPA by phone or fax and shall confirm the communication in writing within 24 hours.

- Records of external communication are kept by the Office Manager and the Environmental Manager. These records consist of letters, faxes and telephone conversations.

### **6. Complaints**

- Complaints are handled by the Environmental Manager. Details of the complaint are recorded. Responses to complaints can be by phone or written.

### **7. Public programme for information**

- As per Waste Licence Molaisín have put in place a programme to ensure that members of the public can obtain information concerning the environmental performance of the Permit Holder at all reasonable times.

- The facility notice board provides contact details for members of the public to arrange to meet Fiona O'Sullivan regarding all environmental reports and records.
- All documentation relating to incoming waste and loads of material being moved off site are available during the facility opening hours.
- The site is manned for enquiries during opening hours.