

PADRAIG THORNTON WASTE DISPOSAL LTD

THORNTONS RECYCLING BALBRIGGAN

Industrial Emissions Licence Reg. No P1014-01



ANNUAL ENVIRONMENTAL REPORT 2018

SUBMITTED March 2019

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1 INTRODUCTION

This report is the Annual Environmental Report for Thorntons Recycling, Stephenstown Business Park, Balbriggan, County Dublin. It has been prepared in compliance with Condition 11.9 of the Industrial Emissions Licence (Licence Reg. No. P1014-01).

This licence was granted by the Environmental Protection Agency (EPA) to Pacon Waste & Recycling on the 10th December 2015. Thorntons Recycling acquired the Pacon Waste facility in June 2018. The contents of this report are as required by Schedule E of Industrial Emissions Licence P1014-01.

1.1 OPERATOR

The facility operator of licence number P1014-01 is Padraig Thornton Waste Disposal Ltd (PTWDL), T/A Thorntons Recycling. This AER relates to Thorntons Recycling, Stephenstown Business Park, Balbriggan, County Dublin.

The address and contact details for the company headquarters are;

Thorntons Recycling,
Unit S3B Henry Road,
Park West Business Park,
Dublin 12.

Telephone: 01- 623 5133
email: info@thorntons-recycling.ie

1.2 REPORTING PERIOD

The reporting period for this Annual Environment Report (AER) is 12 months between the 01/01/18 and the 31/12/18.

2 FACILITY ACTIVITIES

2.1 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

Part 1 Schedule of Activities Licensed of the current Industrial Emissions Licence P1014-01 lists those activities contained in the Waste Management Act 1996, which are licensed to be carried out at Thorntons Recycling Balbriggan, Stephenstown Business Park, County Dublin. These activities are as follows:

- Class 11.4

(b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply):

- i) biological treatment;
- (ii) pre-treatment of waste for incineration or co-incineration;
- (ii) treatment of slags and ashes;
- (iv) treatment in shredders of metal waste, including waste electrical and electronic equipment and end of life vehicles and their components.

- Class 11.1

The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.

2.2 OPERATION PROCESSES - WASTE ACTIVITIES AT THE FACILITY

The following section details the operational procedure for dealing with waste that is accepted at Thorntons Recycling Balbriggan.

PROCESS – SRF

This facility produces front burner Solid Recovered Fuel (SRF) from non-recyclable waste plastics. This SRF is used as a coal replacement in Irish cement kilns. The SRF needs to meet strict criteria to be acceptable as front burner SRF and limits are set on moisture levels, chloride levels and calorific value.

Materials arrive in lorries and is weighed and documented on the weighbridge before the lorry reverses into the reception area. The lorry reverses into the reception area via door 1 where the load is inspected for non-conforming waste. Once the material is checked and deemed acceptable it is offloaded and stored prior to processing.

The material is fed into the Jupiter shredder where it is pre-shred to aid with the sorting process. Once the material is shredded it falls onto a conveyor, which takes the material into a ballistic separator. The material is sorted via density. 3-dimensional (3D) material (heavier) fall from the end of the ballistic separator and 2-dimensional (2D) material (lighter) is sent forward for further processing. The 3D material removed is bulked and consigned to another Thorntons Recycling for further processing. The 2D material passes underneath a magnet which removes ferrous metals. This material then passes through a near infrared optical sorter. The optical sorter is programmed to remove material with a chloride content. The rejected material is bulked and consigned to another Thorntons Recycling facility for further processing. The remaining material is conveyed underneath an Eddy current which removes non-ferrous metals. The final material is then passed in through a Lindner shredder where it is shredded to less than 25mm. The material is conveyed to a storage area where it is bulked and later loaded before consignment to a cement kiln.

3 QUANTITY AND COMPOSITION OF WASTE RECEIVED, RECOVERED AND DISPOSED OF IN 2018

3.1 WASTE HANDLED IN THORNTONS RECYCLING BALBRIGGAN

The quantities of waste received during the current AER reporting periods are summarised in Table 1 and also included in Appendix 1.

Year	Waste Tonnes in
2018	11,570

Table 1 - Total Waste received 2018

All waste is checked and documented at the weighbridge in accordance with the waste licence and the waste acceptance procedure. Should any non-conforming waste come to the attention of the staff it is either rejected in the lorry or segregated and quarantined to be disposed of by a licensed contractor, paperwork is maintained on site.

A register of all waste destinations used by Thorntons Recycling Balbriggan in 2018 for recycling, recovery or disposal of waste is maintained on site.

3.2 WASTE ACCEPTANCE

All new staff employed by the company in 2018 received an Environmental, Health and Safety Induction which includes licence training, waste acceptance procedures, emergency procedures and environmental awareness. All staff employed at the facility are diligent in assisting in eliminating the occurrence of non-conforming wastes.

Thorntons Recycling has a certified management system for Environmental (ISO14001), Quality (ISO 9001), Health and Safety (OHSAS18001). The Integrated Management System (IMS) is available for inspection on the IMS Drive at any of the companies' offices. Figure 1 below is a simplified diagram explaining the waste acceptance procedure at Thorntons Balbriggan facility.

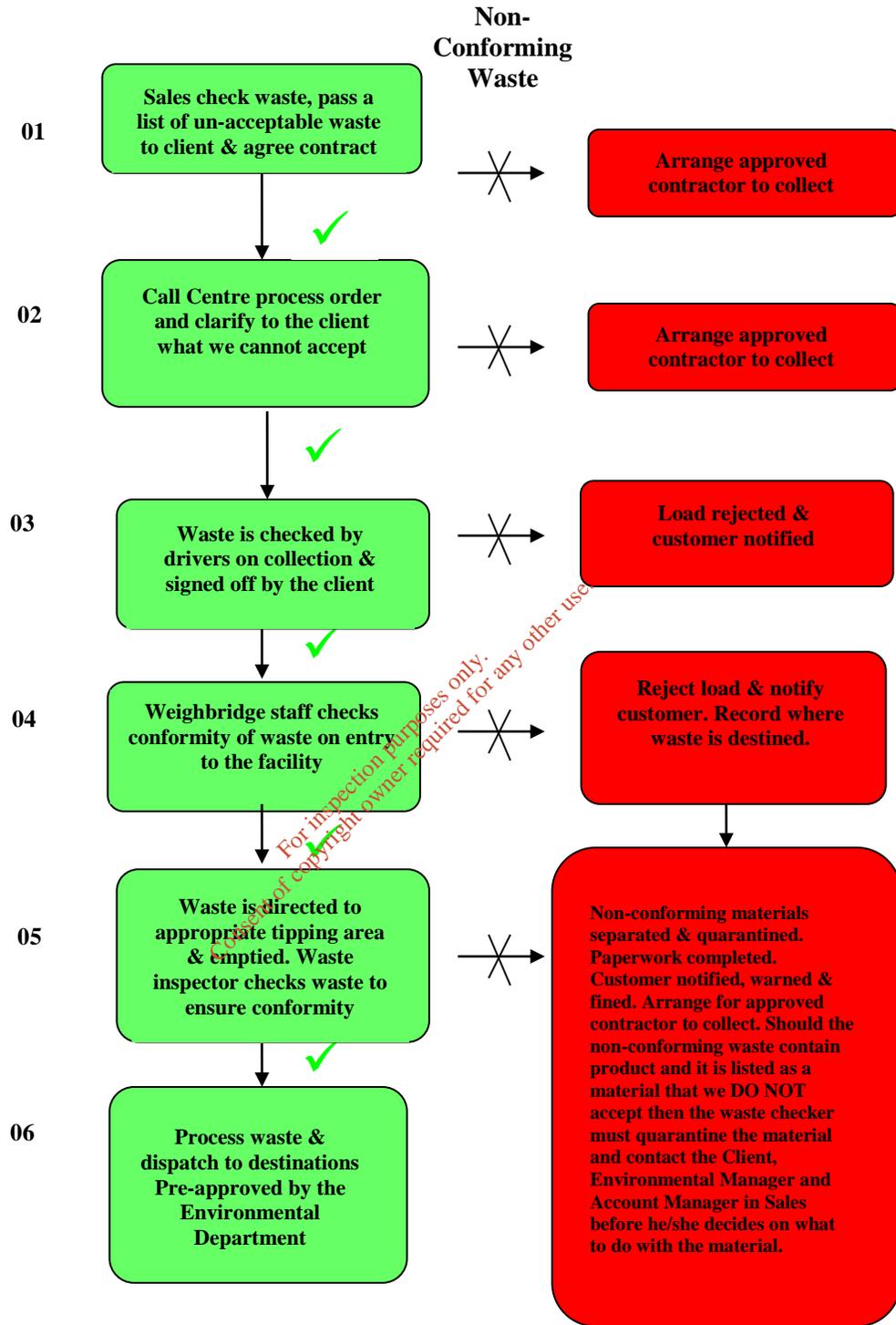


Figure 1 - Waste acceptance procedure

3.3 WASTE CONSIGNED TO LANDFILL AND RECYCLING/RECOVERY FACILITIES

A total of 11,171 tonnes of waste was consigned from the facility in the reporting period of 2018. Details of which are contained in Appendix 1 of this report.

The overall recycling/recovery rate for the facility was 93.94% in 2018. This high recycling/recovery rate is due to management actively sourcing suitable waste types for front burner SRF production. It is also due to increased communication with customers on what waste types are suitable for acceptance on site.

No waste was consigned to landfill in 2018 from the facility. Materials were either sent for recycling, energy recovery or to another facility for further processing.

A waste characterisation survey was carried out on the SRF by independent consultants in 2018. It was found that 91.31% of the incoming waste is packaging waste and is been counted as part of the national packaging recovery targets.

It is planned that Thorntons Recycling Balbriggan will continue to increase its recycling and recovery rates in 2019 by;

- Continuing to work to International Standards ISO 14001 Environmental, ISO 9001 Quality and OHSAS 18001 Health and Safety with continuous development and improvement of new operational procedures and the implementation for new standards during 2019.
- Construction of a new building on site will enable the facility to produce two grades of SRF on site, which will enable the facility to further process the 3D material into a grade of SRF.
- Continuous training and education of staff at all levels on recyclable material types and the development of new outlets for new materials.
- Continued education with new and existing clients on new regulations and their obligations in relation to the law. Thorntons Recycling offer educational workshops, site visits and staff training to existing customers.
- Continue to offer reduced rates to customers who segregate their waste, for example wood, metal, dry recyclables, glass, plasterboard and compost bins.
- Continually improve on services and after sales service.
- Offer presentations and demonstrations on our client premises and schools.
- Awareness through the publishing of on-line news, continuous development and updating of the website for Thorntons Recycling at www.thorntons-recycling.ie
- Thorntons Recycling won Pakman Recovery Operator of the Year Award 2008, 2011, 2012 and 2013 and was a finalist in 2009, 2010, 2014, 2015, 2016 and 2017.
- Thorntons Recycling MDR won the Pakman Recovery Facility of the Year Award 2017.

- Thorntons Recycling was a finalist in the Pakman Kerbside Collection Scheme of the Year Award in 2012 & 2013 and won the Commercial Pakman collection award 2017.
- Thorntons Recycling won the Green Awards in 2013, 2015 and 2016 and was a finalist in 2012, 2014 and 2017.

5 SUMMARY REPORT AND INTERPERTATIONS OF ENVIRONMENTAL MONITORING AND EMISSIONS DATA

In accordance with *Schedule D: Monitoring* of Thorntons Recycling, Balbriggan Industrial Emissions licence P1014-01, monitoring of dust, noise, surface water and foul water is carried out. The following section details results obtained and interpretations of results for the year of 2018.

5.1 DUST

Annual Dust Monitoring was carried out at four locations DS-01, DS-02, DS-03 and DS-04. Thorntons Recycling are required by Schedule D to monitor dust four times a year, results are displayed in Table 3 and Figure 3. Monitoring locations are shown in Figure 2 below.

Thorntons Recycling Balbriggan is located in a predominately industrial area. A nearby busy road forms the northern boundary of the facility. Monitoring point DS-03 is located on this boundary and as a result receive significant input from passing traffic and vehicles. DS-04 is located on the western boundary and is in close proximity to neighbouring manufacturing facilities.



Figure 2 - Dust Monitoring Locations

Monitoring Locations	Sample 1 March/April	Sample 2 June/July	Sample 3 Oct/Nov	Sample 4 Nov/Dec	ELV mg/l
DS-01	172	229	52.12	69.24	350
DS-02	66	163	118.17	61.11	350
DS-03	130	225	62.86	120.19	350
DS-04	184	438	98.67	307.61	350

Table 2 - Dust results 2018

The emission limit value for dust deposition is 350mg/m²/day. During 2018 one (DS-04) of the dust emission levels exceeded the emission limits (Table 2). After inspecting the area around DS-04, it was noted that there was a significant amount of fine wood dust on the ground near the monitoring location. This dust was not attributed to the operations of the facility, but to the operations of a neighbouring manufacturing facility. Figure 3 shows the trends in dust deposition during the year.

Thorntons Recycling will continue to monitor dust on a regular basis. Thorntons Recycling staff use fire hoses to wet down yard surfaces at the facility during dry periods. Thorntons Recycling uses a sweeper lorry to sweep the yard area to reduce the likelihood of debris accumulating.

Thorntons recognises the importance of maintaining dust levels below the emission limit level of 350mg/m²/day and are fully committed to maintaining compliant emissions from the facility in 2019.

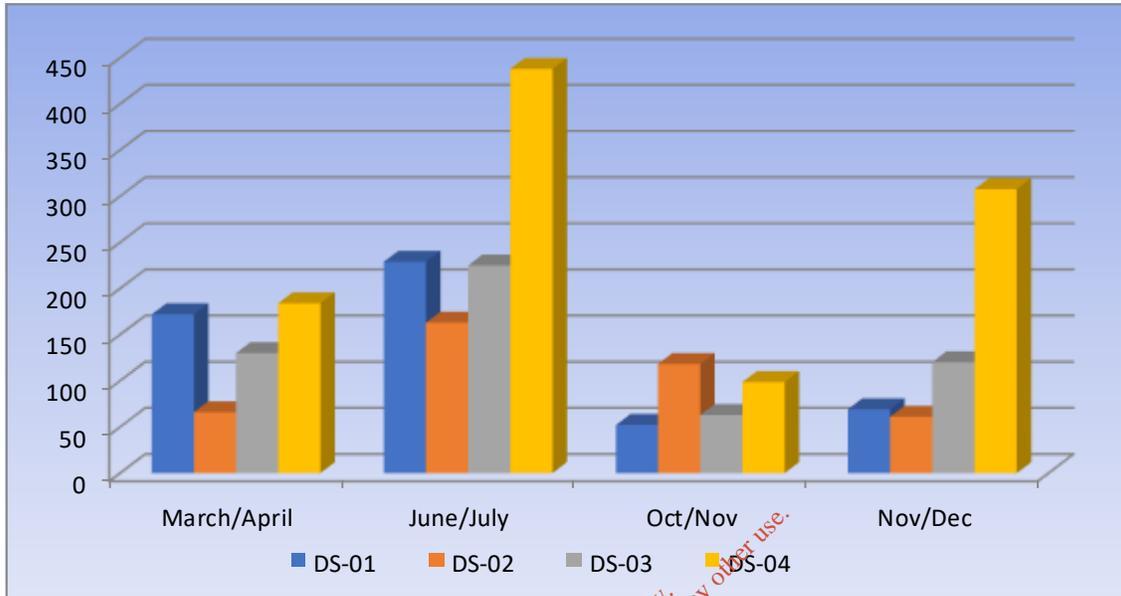


Figure 3 - Dust Monitoring Results 2018

5.2 EMISSION TO FOUL WATER AND SURFACE WATER

Monitoring is carried out by Thorntons Recycling as per Schedule C of Industrial Emissions Licence P1014-01. Monitoring locations are shown in Figure 4 below.



Figure 4 - Water Monitoring Locations

5.2.1 SEWER WATER (SE-01)

In accordance with Industrial Emissions Licence P1014-01 Schedule C emissions to sewer are monitored. Water reports have been forwarded to the EPA via EDEN during 2018.

Table 3 Illustrates results received at SE-01 monitoring locations for 2018. The facility does not currently have skip lorries parking on site in the numbers first envisaged when the site was licenced. Only one artic lorry is based on site and this is used to consign material from the facility. As such the truck wash is not frequently in use on site. The process does not produce any sewer water, nor does there be water coming in with the incoming waste. Thus, the volume of sewer water from the facility is minimal and is mostly from the toilets used by the few staff on site. As such the sewer water discharge is minimal and has a very intermittent in flow, typically only when a toilet is used.

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Monitoring Parameters	January 24.01.18	February 13.02.18	March 23.03.18	May	June	July	August	September	October	November	December	ELV
BOD	11	9.00	9	No Flow	No Flow	No Flow	No Flow	1000mg/L				
COD	37	69.00	60	No Flow	No Flow	No Flow	No Flow	2000mg/L				
Suspended Solids	403	564.00	339	No Flow	No Flow	No Flow	No Flow	1000mg/L				
pH	8.70	10.50	10.50	No Flow	No Flow	No Flow	No Flow	6-9				
Conductivity	581.00	709.00	1282.00	No Flow	No Flow	No Flow	No Flow					
Mineral Oil by GC (mg/l)			<2.5	No Flow	No Flow	No Flow	No Flow	5mg/L				
Temperature °C				No Flow	No Flow	No Flow	No Flow	42 Degrees Celsius				
Orthophosphate			0.34	No Flow	No Flow	No Flow	No Flow	20mg/L				
Arsenic			1									ug/L
cadium			<1									ug/L
Chromium			3									ug/L
Copper			34									ug/L
Lead			9									ug/L
Mercury			<0.04									ug/L
Nickel			4									ug/L
Oils, fats, Grease			<1									mg/L
Sulphate			84.58									mg/L as SO4
Nitrogen (Ammonical)			0.82									mg/L as N
Nitrogen (Total)			7.13									mg/L as N
Solids (Total Suspended)			1.68									mg/L as P
Nickel			4									ug/L
Selenium			<3									ug/L
Total Petroleum Hydrocarbons			<1									ug/L
Zinc			208									ug/L

Table 3 - SE-01 Results 2018

5.2.2 SURFACE WATER (SW-01)

Surface water is collected on site from the roof which flows into a water harvesting tank on site. This water is used for fire hydrants and also for assisting in cleaning down the yard area. When the tank is full the overflow discharges into the surface water system. The rain water that lands on the concrete hard standing area, flows into gullies and is also discharged into the surface water system.

No processing of waste takes place outside and the yard area is regularly cleaned to ensure that the drains and gullies are free from debris. Thorntons Recycling also fitted manhole covers over all gullies in an effort to reduce the build up of debris in the gullies.

During 2018, ammonia, BOD and suspended solids exceeded the emission limit value a number of times respectively. Thorntons Recycling investigated each incident as the results were received and started to eliminate possible causes. The gullies were initially cleaned out. The gully covers were installed. The sampling location was reviewed with the consultants. It was noted that the sample was been taken at the incorrect location. Thorntons installed a new sampling location after the site interceptor and have trained staff on taking samples when there is a flow.

As the process on site does not use water and the use of hydrant water on site to dampen the yard area in summer is insignificant in terms of surface water flow, there is typically no flow of surface water unless there is a rain fall event occurring.

5.2.3 POLLUTANT RELEASE AND TRANSFER REGISTER (PRTR)

The pollutant release and transfer register (PRTR) for 2018 has been uploaded to EDEN. Data is collected throughout the year and the 2019 PRTR will be uploaded to EDEN at the beginning of next year.

Monitoring Parameters	January		February			March			May			June			July			August			September			October			November			December			ELV			
	15.03.18	23.03.18	27.03.18	04.05.18	16.05.18	30.05.18	08.06.18	15.06.18	20.06.18	29.06.18	02.07.18	09.07.18	16.07.18	23.07.18	30.07.18	01.08.18	08.08.18	17.08.18	22.08.18	31.08.18	06.09.18	14.09.18	21.09.18	28.09.18	02.10.18	09.10.18	16.10.18	23.10.18	05.11.18	16.11.18	23.11.18	30.11.18		05.12.18	14.12.18	19.12.18
Ammonia	No flow	No flow	0.201	0.08	0.65	0.02	0.41	0.03	No flow	1.41	No flow	0.15	No flow	0.31	0.05	No flow	0.53	No flow	0.28	No flow	No flow	No flow	0.18	No flow	No flow	0.23	0.09	0.24	0.2	0.07	0.11	0.14mg/l				
BOD	No flow	No flow	2	<2	11	<2	<2	<2	No flow	<2	No flow	9	No flow	<2	<2	No flow	4	No flow	9	No flow	No flow	No flow	2	No flow	No flow	12	11	<2	3	<2	4	2.6mg/l				
COD	No flow	No flow	54	14	39	9	36	40	No flow	42	No flow	27	No flow	34	10	No flow	47	No flow	44	No flow	No flow	No flow	17	No flow	No flow	195	25	11	20	<5	14	mg/l				
Suspended Solids	No flow	No flow	75			10	<2	4	No flow	24	No flow	<2	No flow	12	<2	No flow	8	No flow	7.82	No flow	No flow	No flow	9	No flow	No flow	30	74	19	90	50	7	25mg/l				
pH	No flow	No flow	7.3	8.1	<1	8.17	7.5	7.93	No flow	7.48	No flow	7.53	No flow	7.62	8.18	No flow	7.66	No flow	7.82	No flow	No flow	No flow	7.64	No flow	No flow	7.97	8.05	7.87	8.05	7.93	7.75					
Conductivity	No flow	No flow	153	574	393	550	263	638	No flow	632	No flow	74.2	No flow	Not defined	650	No flow	105	No flow	142	No flow	No flow	No flow	61	No flow	No flow	249	151	318	157	200	626	mS/cm				
Total Organic Carbon	No flow	No flow	1.9	2.9	3.2	2.1	6.1	11.2	No flow	10.5	No flow	4.8	No flow	4.5	3.8	No flow	6.9	No flow	4.9	No flow	No flow	No flow	3	No flow	No flow	45.5	2.1	2.6	2.8	2.2	2	mg/l				
Nitrogen	No flow	No flow	1.56	1.04	1.45	1.94	1.36	1.36	No flow	4.22	No flow	<1	No flow	1	3.36	No flow	1.57	No flow	2.1	No flow	No flow	No flow	2.04	No flow	No flow	3.92	<1	2.5	1.04	1.19	2.02	mg/l				
Arsenic			2																																ug/L	
cadmium			<1																																	ug/L
Chromium			5																																	ug/L
Copper			14																																	ug/L
Lead			23																																	ug/L
Mercury			<0.03																																	ug/L
Mineral Oil			961																																	ug/L
Nickel			5																																	ug/L
Oil, fats, Grease			<1																																	mg/L
Solids (Total Suspended)			75																																	mg/L
Zinc			121																																	ug/L

Table 4 - SW-01 Results 2018

5.3 NOISE

In accordance with Condition 6.16 and Schedule B of Industrial Emissions licence P1014-01 annual environmental noise monitoring was carried out. Monitoring was carried out on the 19th and 20th of December 2018. Noise monitoring was undertaken by Fergal Brennan of Thorntons Recycling Environmental Department in compliance with Condition 6.16 of the licence. The results of the survey were submitted to the EPA via EDEN on the 18th of January 2019. Results are detailed in Table 5 below.

Thorntons Recycling has not received any noise complaints in relation to the facility in 2018. Processing of materials takes place within the processing building, and noise levels from the plant are reduced in the external environment by keeping the roller-doors to the building closed unless access is required.

All the monitoring samples, with the exception of the day time samples at NSL-01, shows that the LA90 results are below the emission limit level (ELV) for the noise sensitive locations. The LA90 typically represents the noise levels, excluding the noise from intermittent passing traffic. Thus, the likelihood of noise complaints is low as 90% of the time the noise levels noted are below the ELV. For the remainder of the time the increased noise levels is attributed to traffic and not Thorntons Recycling.

The LA90 for NSL-01 during the day exceeds the ELV. The LA10 typically represents the noise levels associated with intermittent traffic. However, the logging graphs for these monitoring points shows that the traffic was near constant and is thus a large contributing factor to the noise levels recorded at NSL-01 during the day. The constant traffic at this location is the cause of the La90 and the LAeq exceeding the emission limit value.

Tonal components were detected at NSL02 during evening monitoring and at NSL01 and NSL02 during the night time monitoring. During day, evening and night time monitoring periods the predominant and constant noise source was traffic on nearby roads. From examining notes taken during monitoring periods it was clear this hum was clearer during evening and night time monitoring as there was reduced activity at the facility and nearby facilities. This suggests that these tones are not affiliated with the facility.

Thorntons Recycling considers that, although the noise levels at the noise sensitive locations are exceeded, Thorntons Recycling is not the primary cause of the noise at the locations. Elevated noise readings can be attributed predominately to the high levels of un-associated traffic in the area. As a result, it is concluded that Thorntons Recycling is not having a negative effect on the noise sensitive receptors.

Monitoring							
Location	Day/Evening/Night	Start time	End time	19th and 20th December 2018			ELV (dB)
				LA _{eq} (dB)	LA ₁₀ (dB)	LA90(dB)	
NSL-01	Day	15:50pm	16:20pm	65.7	70.5	55.2	55
NSL-01	Day	18:08pm	18:38pm	65.9	70.5	56.1	55
NSL-02	Day	14:42pm	15:12pm	53.5	51.9	32.6	55
NSL-02	Day	16:43pm	17:13pm	53.2	55.9	49.9	55
NSL-02	Day	17:30pm	18:00pm	53.6	54.5	50.1	55
NSL-01	Evening	20:00pm	20:30pm	50.3	51.2	49.4	50
NSL-01	Evening	21:47pm	22:17pm	46.4	47.5	44.8	50
NSL-02	Evening	20:58pm	21:29pm	52.2	51.8	48.1	50
NSL-01	Night	00:00am	00:30am	50.1	51.3	34.9	45
NSL-01	Night	01:58am	02:28am	43.6	46.5	30.1	45
NSL-02	Night	01:00am	01:31am	42.3	46.2	30.1	45
NSL-02	Night	03:18am	03:48am	50.1	40.4	30.1	45

Table 5 - Noise Monitoring Results 2018

6 RESOURCES AND ENERGY USAGE

The following section discusses resources such as electricity, fuel and water used at Thorntons Recycling Centre in 2018.

6.1 ELECTRICITY

421,618KW of electricity was consumed between June and the December of 2018. Thorntons Recycling took over this facility on June 1st, 2018. Therefore, energy data is only available from June 1st, 2018. Thorntons Recycling track all energy consumption at their facilities on an Internal Energy Management System.

Figure 5 illustrates the monthly daily and nightly usage of electricity on site during 2018.

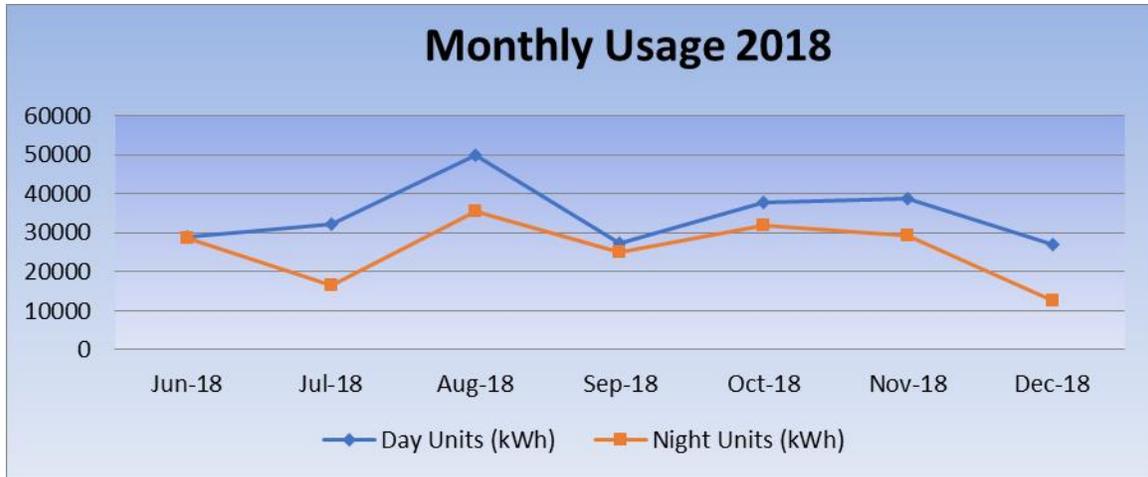


Figure 5 - Day and Night Electricity consumption 2018

6.2 WATER

Water usage was not recorded in 2018 as Thorntons Recycling took over this facility in June 2018. The incoming water has been recorded in early 2019 from the Irish Water meter on site and will be recorded on the 31st December 2019 going forward. Minimal water is used on site (Toilets, dampen yard in summer and to wash the mobile plant on site and one artic lorry).

6.3 DIESEL

The main type of fuel used at Thorntons Recycling, Balbriggan is machinery diesel. The breakdown of fuel consumed is detailed in Figure 6 below. In 2018 a total of 37,696 litres of plant diesel was consumed. Plant diesel data is only available from June 1st, 2018.

Invoices in relation to all Thorntons facilities are sent to the head office of the company at Thorntons Recycling, Unit S3B, Park West Business Park, Dublin 12. Every effort has been made to distinguish between individual facilities to ensure an accurate fuel consumption report for Thorntons Recycling, Balbriggan.

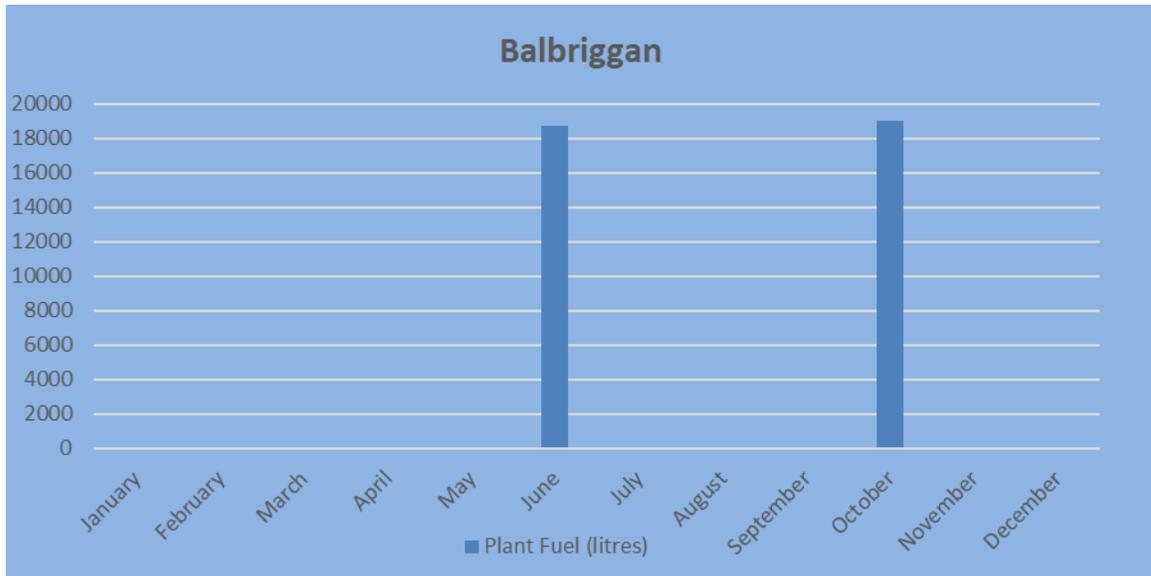


Figure 6 - Plant Fuel Consumption 2018

6.4 ENERGY EFFICIENCY

An energy efficiency audit was carried out at the facility in 2017. The full report is available at the facility for inspection. This will be repeated at intervals required by the agency. The energy audit of this facility identified energy efficiency savings equal to 4% of all energy used by the facility. This relatively low saving indicates that the facility is operating efficiently in terms of energy usage. The energy usage will continue to be tracked and monitored with Thornton's internal energy management system.

6.5 ASSESSMENT OF THE EFFICIENCY OF RAW MATERIALS IN PROCESSES AND REDUCTION IN WASTE GENERATED

Incoming waste is preapproved before coming to the site so that maximum efficiency can be attained from its processing. All material accepted is processed to produce the highest grade of SRF for the cement industry. Material that is currently not acceptable as front burner SRF, is bulked after processing and is consigned to alternative facilities for further processing.

6.6 PROGRESS MADE TO MINIMISE WATER DEMAND AND VOLUME OF TRADE EFFLUENT DISCHARGES

Water is used at the facility for washing mobile machinery, one artic lorry, dampening the yard area in summer and for use in the toilets. As such water demand on site is minimal. The discharge to sewer is minimal.

The rain water that falls on the roof area is diverted to a rain water harvesting tank on site. This water is used in the event of a fire but is also used from the fire hydrants to

dampen down the yard area in summer. The overflow from the rain water harvesting tank is discharged into the surface water. The discharge of water at the surface water monitoring point is intermittent and is dependent on the amount of precipitation.

7 DEVELOPMENT / INFRASTRUCTURAL WORKS

7.1 SITE DEVELOPMENTS 2018

Table 6 summarises the main developments and improvements made at the facility since June 2018.

Year	Site	Details
2018	Balbriggan	Construction started on the new build.
2018	Balbriggan	Installation of solid cover over the truck wash area.
2018	Balbriggan	Tidy site boundary, of old scrap, old equipment and tyres etc.
2018	Balbriggan	Installation of a new Jupiter shredder and replacement of the first inline conveyor
2018	Balbriggan	Fitting of man hole covers over the surface water drains in the yard area

Table 6 – Site Developments and improvements

In addition to site development works all staff received Thorntons EHS induction training and regular Tool box talks are carried out on Environmental topics to refresh and maintain environmental good practice.

7.2 PROPOSED DEVELOPMENTS IN 2019

In 2019 it is planned that the ongoing new building works will be completed. The EPA will be informed prior to the installation of any plant (Appendix 2)

Any developments are proposed with the intention of reducing environmental impacts of the facility, improving the appearance and increasing waste processing efficiency at Thorntons Recycling Balbriggan. Thorntons Recycling main aim is to reduce as much waste as possible for landfill disposal in line with national policy and further increase recycling and recovery rates at the facility by:

- Continuous Development on company procedures in line with ISO certification
- Review environmental checks and procedures

Prior to any works being carried out the environmental department completes the environmental aspects for the project and identifies for the operations and maintenance departments any environmental aspects to be considered during the project. This process

is part of the company ISO procedures but also allows Thorntons Recycling to mitigate against unforeseen events during the installation process.

7.3 PREVENTION OF ENVIRONMENTAL DAMAGE AND REMEDIAL ACTIONS

All Thorntons Recycling staff are inducted before commencing work. Induction includes EHS training, Manual Handling and Human Resources Training. As part of the EHS training all staff are made aware of any possible environmental issues at each facility and all environmental procedures. Examples include procedures for:

- spill clean-up
- surface water emergency shut off valve
- fire prevention
- emergency response plans

Tool box talks are provided to staff by supervisors. These are typically given in relation to any arising issues (e.g. odour prevention, surface water protection).

Thorntons Recycling has implemented an Emergency Response Plan (ERP) for the facility and this is communicated to all site staff.

8 SCHEDULE OF ENVIRONMENTAL OBJECTIVES AND TARGETS FOR 2019

Thorntons Recycling operates an Integrated Management System (IMS) which has been certified to a number of standards namely; ISO 14001 Environmental, OHSAS 18001 Health and Safety, ISO 9001 Quality.

The complete content of the IMS itself is too large to contain within the main body of this report, however the EPA can access this for inspection on a specially designated drive (X Drive or IMS Drive) at any of the companies' site offices. The initial schedule of environmental objectives and targets for 2019 has been included as Appendix 5. There was no environmental management programme in 2018, however improvement works were carried out as discussed earlier.

9 TANK, DRUM AND PIPELINE TEST

9.1 TANK BUNDING

The integrity and water tightness of all tanks and their resistance to penetration are carried out once every 3 years as per Condition 6.9 of the Industrial Emissions Licence. Bund testing was carried out in November 2016 by Oil Industry Services. This is due for renewal in 2019 and will be forwarded to the EPA when completed.

9.2 PIPELINE TESTS

The integrity and water tightness of all underground pipes and their resistance to penetration are carried out once every 3 years as per Condition 6.9 of the Industrial Emissions Licence. Complete Environmental Services completed a full assessment of the drain network at the facility in October 2016. This is due for renewal in 2019 and will be forwarded to the EPA when completed.

10 SUMMARY OF INCIDENTS AND COMPLAINTS

10.1 INCIDENTS

There were 16 incidents recorded during 2018 by the onsite monitoring. All 16 incidents are in relation to breaches of Emission Limit Value's (ELV).

Dust exceeded the emission limit value for Quarter 2 of 2018 on one occasion. This was attributed to a neighbouring manufacturing site. There were two exceedances to the pH on the sewer water and the remaining thirteen breaches of ELV were in relation to surface water emissions. These are detailed below in Table 7. All exceedances were investigated at the time and remedial works have been carried out at the surface water monitoring location to ensure that sampling can be taken at the correct location going forward. As such the exceedances are not considered to be ongoing.

No.	Type/Nature	Comment
1	Breach of ELV - Dust	Dust exceeded limits at DS-04. Third party woodworking workshop found to be releasing dust beside sampling point
2	Breach of ELV - Sewer Water	pH exceeded limits at SE-01. Only toilets and wash bay feed into this drain. Toilet cleaning products found to be probable cause.
13	Breach of ELV - Surface Water	Ammonia, BOD, Suspended Solids exceeded limits at SW-01 due to incorrect sampling.

Table 7 - Incidents 2018

10.2 COMPLAINTS

Complaints are reported either directly to the EPA or to Thorntons Recycling, Balbriggan during 2018. Figure 8 shows the breakdown of complaints by the month in 2018. There was a total of 3 complaints received during 2018 which was a reduction of 37.5% on the previous year.

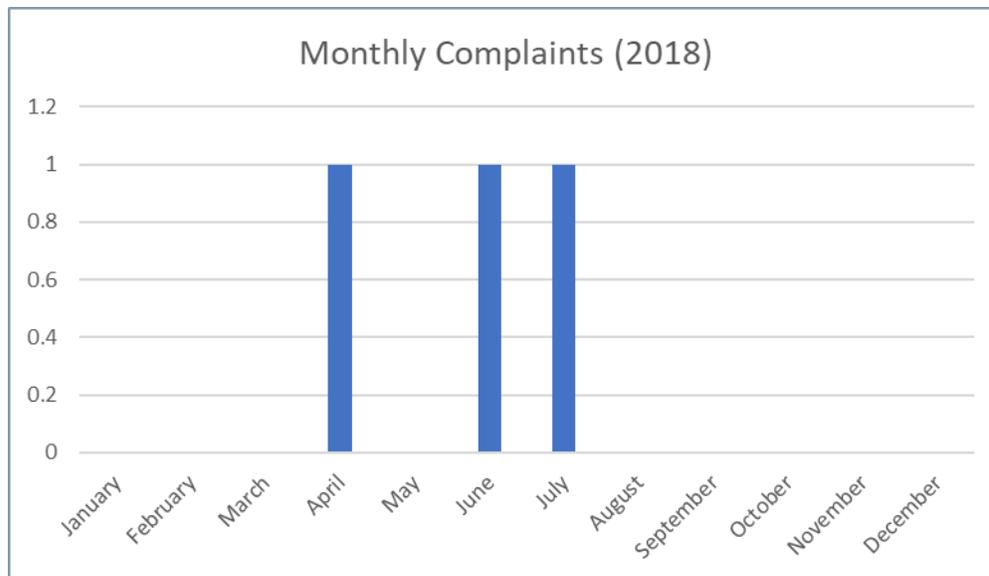


Figure 8 - Break down of all complaints 2018

Analysis of the complaints during 2018 shows that 3 complaints were received (all in relation to odour) from one individual.

Thorntons Recycling takes every complaint seriously and is committed to resolving all complaints in relation to the facility.

11 Ambient monitoring

11.1 ODOUR

This facility's main purpose is to produce a high grade of SRF for the cement industry. Material is preapproved before arrival on site and has already been pre-sorted at another facility. As such the incoming material will be dry and non-putrescible. Any material that is not deemed acceptable when it is been inspected, is rejected and removed off site. Quarantined material is temporarily stored in doors until its collection is arranged.

The roller doors to the facility are kept closed, with the exception when vehicles or plant are going in or coming out. This helps ensure air is kept within the building.

Inside the building there is a Dax Air control system, which is continually on and is breaking down the odorous molecules in the air. This system helps reduce the generation of odour within the building.

The material is accepted and processed as soon as possible and consigned off site as quickly as the cement kilns can accept the material. This helps ensure a quick turn over of stock and further reduces the likelihood of odours.

11.2 LITTER

Daily checks are carried out on litter within and around the site boundary. Any litter which may escape is cleared up as soon as possible. All waste transportation vehicles are either enclosed or have a net which covers waste, preventing littering while waste is in transit. Thorntons Recycling Balbriggan uses a road sweeper which sweeps the facility when required. All housekeeping checks are maintained on file in the Environmental Department at Thorntons Recycling Balbriggan.

11.3 BIRDS

All waste processing takes place inside the processing building and birds have not been an issue. The situation is being monitored and if necessary further action by the contracted pest control company will be arranged.

11.4 RODENTS

Complete Pest Control conduct checks of all bait points around the facility which effectively controls rodents at the facility, all documentation for site visits and reports are maintained on site.

11.5 FLIES

Flies have not been a problem at the facility during 2018. If required additional action will be carried out by the contracted pest control company.

11.6 TRAFFIC

Thorntons Recycling Balbriggan has minimal vehicles movements onsite.

12 FINANCIAL PROVISION, STAFFING STRUCTURE AND PROGRAMME OF PUBLIC INFORMATION

12.1 FINANCIAL PROVISION

Thorntons is insured by JLT (Appendix 3). PTWDL is insured for Employers Liability, Public/Products Liability and Motor Insurance. PTWDL is a financially secure company which is evident from the director's report and consolidated financial statements for the year ended 31st December 2017. Thorntons Recycling is insured under public liability for €13 million for sudden and accidental pollution incidents.

The company also have employed environmental management staff to ensure best practice guidelines and compliance with Industrial Emissions Licence P1014-01 is being adhered to. A comprehensive emergency plan exists for all facilities operated by the company and the company has maintained certification to Environmental Standard ISO

14001 across all its sites in 2018. Environmental risk assessments are updated as part of the impact and aspects register for ISO14001. The Environmental Aspects Register (PM01-F02) for Thorntons Recycling, Balbriggan facility is available for inspection on site. All staff are trained in Health and Safety and Environmental Awareness at Thorntons Recycling Centre.

12.2 ENVIRONMENTAL LIABILITIES RISK ASSESSMENT REVIEW

The Environmental Liabilities Risk Assessment was reviewed 2016. It is available on site for inspection by the agency. It has been reviewed in 2019 and will be reviewed annually.

12.3 DECOMMISSIONING PLAN REVIEW

The Decommissioning Plan was reviewed 2016. It is available on site for inspection by the agency. It has been reviewed in 2019 and will be reviewed annually.

12.4 PROGRAMME FOR PUBLIC INFORMATION

Thorntons Recycling operates an open-door policy at the facility and carries out tours with students and businesses upon request. The environmental team have been actively involved in carrying out recycling workshops and audits in schools, hospitals and industrial and commercial businesses as well as giving presentations to some of our larger commercial customers at their facilities.

All new and existing clients are brought through our waste acceptance procedures and are supplied with information by the sales manager or customer care staff in relation to what waste types we can accept at the facility.

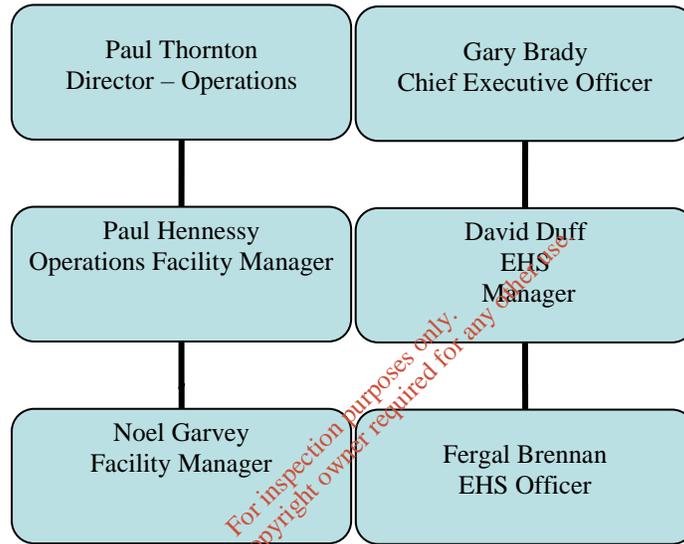
Thorntons Recycling has upgraded its website www.thorntons-recycling.ie, so customers can access information such as waste collection permit numbers and facility waste licences under the compliance section etc. These permits and licences are updated regularly, and the web site is maintained with the most up to date information. The companies, on line skip service www.skip.ie provides our customers with services and information in relation to hiring a skip from Thorntons Recycling. All household customers now have a personal log in access to our website which enables them to view their waste activities including weights, collection dates and times etc. A news update section of our website is updated regularly with news about the company which enables customers and the public to keep up to date with Thorntons Recycling.

All information relating to activities carried out at Thorntons Recycling Balbriggan is maintained on site. Public information is always accessible at the site or at the Office of Environmental Enforcement. Detailed Communications Procedures (PM04-Communications and EP01 – Communications Programme) has been implemented in our Integrated Management System and are used throughout the company.

The company recruited a Marketing Specialist in January 2017 to develop and implement its customer contact programme on social media (Facebook, Instagram and LinkedIn) and to improve its involvement in local community initiatives and supports.

11.5 MANAGEMENT STRUCTURE

The graph below details the 2018 management structure relating to Thorntons Recycling Balbriggan.



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Appendix 1

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Waste Statistics Balbriggan Facility 2018														
EWC Code	Waste Description	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
19 12 12	Waste Plastic In	903	915	953	956	1016	1044	893	1441	1045	937	903	563	11570
	Total In	903	915	953	956	1016	1046	854	1441	1045	937	903	563	11570
19 12 12	SRF (Irish Cement)	746	661	891	1190	598	883	1027	1208	553	903	1104	574	10338
19 12 12	Plastic residue (MDR)	68	42	34	47	81	54	21	0	0	0	0	0	346
19 12 12	Waste Residue (Thorntons Killeen Road)	0	0	0	0	0	44	16	80	15	96	56	57	364
15 01 02	Wood (AES Lusk)	0	0	0	0	0	0	0	4	0	0	0	0	4
19 12 03	Non-ferrous metal (Wilton Waste)	17	0	15	0	17	0	0	0	21	22	0	0	92
19 12 12	Waste Residue (AES)	10	6	0	0	10	0	0	0	0	0	0	0	26
	Total Out	841	708	940	1237	705	981	1063	1291	589	1022	1161	631	11171
	% recycling rate	90.73	93.29	96.37	96.23	87.11	90.02	96.58	93.83	97.48	90.56	95.13	90.93	93.41

Appendix 2

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Relevant Department	Need / Expectation / Compliance Obligation	How are we meeting this need / expectation / obligation	Documented Evidence (where appropriate or applicable)	What is the risk of not meeting these needs or expectations?	Is there an opportunity here for the business?	2018 Business Priority	2019 Business Priority	Objective
EHSQ - Balbriggan	Installation of new shed in Balbriggan site	Use of Third Party Contractor / Ensure H&S contractor compliance	Safety file / Visual evidence	Financial risk / environmental risk	Increase site efficiency / expand business opportunities	N/A	Medium	Streamline Processes
EHSQ - Balbriggan	Installation of Weighsoft system	Use of ISYS to install system	Weighsoft software installed	Incorrect weighing of waste	Accurate weights / efficiency of allocating waste in and out	N/A	Medium	Streamline Processes

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Appendix 3

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JLT Ireland

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Email jlt@jlt.ie

www.jlt.ie

2nd July 2018
Our Ref: PADR05

To Whom It May Concern

Confirmation of Insurance Cover

Our Client: Padraig Thornton Waste Disposal Ltd and Subsidiary Companies

We act as Insurance Brokers to the above client and confirm that the following insurance has been arranged on their behalf.

Insurance Type	:	Combined Liability
Period	:	01 July 2018 to 30 June 2019
Business Description	:	Domestic, Industrial and Commercial Waste Collection, Recycling and Disposal (including Liquid Waste for Local Authorities) Management and Operation of Bring Centres and Property Owners (including some building works), Composting, End of Life Vehicle Processing, Maintenance of Own Vehicles and Contractors Vehicles used on the business of the insured, Bin Repair and Drain Cleaning, Sludge dewatering, Pressure Jetting & CCTV Services, Industrial Cleaning, Hazardous waste cleaning, Removal & Disposal, Tank Cleaning, Hazardous & Non-Hazardous waste, Septic tank and grease tap cleaning and waste (hazardous & non-hazardous removal and disposal, sales, marketing and ancillary promotional activities and property owners
Public Liability Limit of Indemnity :	:	€13,000,000 any one occurrence or series of occurrences arising from any one originating cause including costs and expenses
Products/Pollution Limit of Indemnity :	:	€13,000,000 in all during the period
Employers Liability Limit of Indemnity :	:	€20,000,000 any one occurrence or series of occurrences arising out of one originating cause
Insurers	:	QBE Casualty Syndicate 386
Policy Number	:	AA1565681
Indemnity	:	Indemnity to Principals
Risk Reference	:	PADR05

Yours sincerely,

Colin Hehir
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Cont...



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