

2016 Annual Environmental Report

For

TopChem Pharmaceuticals Limited,
Ballymote Business Park,
Carrownanty,
Ballymote,
Co. Sligo.

License Number: PO828-01

Name	Title	Signature	<u>Date</u>
Frances King	QA Manager & EHS Officer	Total	30/03/2017
Margaret Garry	Operations Manager	MIGGIS	30/03/2017
Dr Donal Coveney	Managing Director	he Gay Novemen	30 03 2017

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1.0 Introduction

As per condition 11.8 of the TopChem Pharmaceuticals Limited Integrated Pollution Prevention & Control License, License Register Number P0828-01, attached is the Annual Environmental Report for the site covering period January 1st 2016 to December 31st 2016.

1.1 Company Details

TopChem Pharmaceuticals Limited is located in the Ballymote Business Park, Carrownanty, Ballymote, Co Sligo (National Grid Reference - 565818, 815634) where it is operating from a building leased from Ballymote Community Enterprise Limited. On February 20th 2008, TopChem Pharmaceuticals was granted an Integrated Pollution Prevention & Control (IPPC) license from the Environmental Protection Agency.

1.2 Activities

The IPPC License authorises TopChem Pharmaceuticals Limited to carry out the following activity at the site;

The use of a chemical or biological process for the production
Of basic pharmaceutical products.

NACE Code - 2120

RBME Risk Category - P-C2

To date TopChem Pharmaceuticals has been involved in the manufacture of the following products at the facility;

- Malathion
- Benzyl Benzoate
- PGX-17
- Bretylium Tosylate
- Salicylic Acid
- 2,4 Dichlorobenzyl Alcohol
- Thiamine Hydrochloride
- Ethacrynic Acid
- Piribedil
- Tolcapone
- Selenious Acid
- Chromium III Chloride
- Isoniazid
- Chloromethyl Laurate

There was no production in 2016 for Malathion, PGX-17, Bretylium Tosylate, Salicylic Acid, 2,4 Dichlorobenzyl Alcohol, Ethacrynic Acid, Piribedil and Tolcapone due to no customer demand for these products. Chloromethly Laurate was made for non-commercial purposes.

In addition, processes for Diazoxide, Isoniazid & Liothyronine were worked on at the site during 2016. There were no additional Products at the facility during 2016.

1.3 Environmental Policy

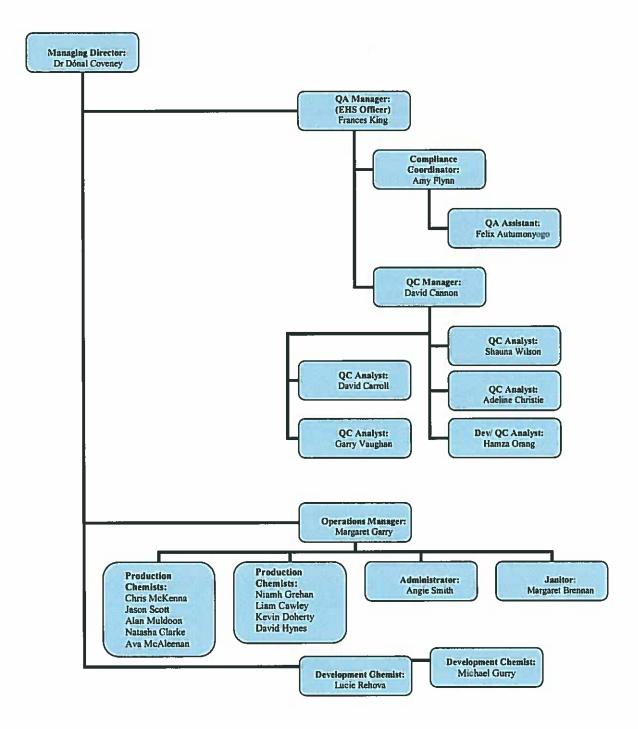
At TopChem Pharmaceuticals we continually assess all the environmental impacts associated with our activities. We aim to improve our management of the environment on a continuous basis. It is essential that all employees, visitors and contractors abide by all aspects of the environmental policy.

1.4 Environmental Management of the Company / Company Structure

Responsibility for the Environmental Management System at TopChem Pharmaceuticals currently falls under the remit of the EHS Officer. Under this present arrangement, the Operations Manager acts as the deputy EHS Officer.

Environmental Management at the facility is co-ordinated through the Health & Safety Incident Report Log, metrics and participation from each of the core functions through Area Representatives. i.e. Production, Quality and Development.

Management and Reporting Structure:



Each department has appointed an EHS representative so that issues identified at a departmental level can be addressed in a timely manner.

There is an EHS Storyboard installed on the first floor overlooking the Reception area. This is updated monthly and displays the following information;

- Metric Incidents and Accident Reporting,
- Metric Corrective Actions,
- Metric Housekeeping Inspections,
- Metric Hours Lost,
- EHS Goals and Objectives.

There is also an Energy Management Notice Board installed, which is updated monthly and displays the following information;

- Energy Management Policy,
- Green Team members,
- Metric Domestic Water Usage,
- Metric Electricity Usage expressed per Employee,
- Awareness information,
- Energy Management / Green Goals and Objectives.

2.0 Resource Information

2.1 Resource Consumption

This section covers details on Electricity usage and Raw Materials consumed in our Production Laboratory for the review period January 1st 2016 to December 31st 2016.

2.1.1 Electricity

Electricity is the only source of energy used at TopChem Pharmaceuticals.

Bord Gais is the provider for electricity in Units 2 - 4 at the site.

Unit 1 is serviced by Electric Ireland.

In summary the Electricity Units consumed at the facility for the period under review are as documented in Table 1 overleaf;

Table 1:

Provider	Unit #	Usage 2015 (KWH)	Usage 2016 (KWH)	Comment
Electric				388% increase.
Ireland	1	161	787	Unit 1 used increasingly for Storage
				110% increase.
Bord Gais	2	805	1693	Additional Room added in 2016
				46% increase.
			200864	Related to Product output increase and
Bord Gais	3 & 4	137450		equipment usage.

TopChem Pharmaceuticals is currently leasing a block of 4 units in the Ballymote Business Park.

Units 3 & 4 are used for Manufacturing and all related support functions for the business.

Unit 1 & Unit 2 are used for storage purposes only. Unit 2 was renovated and a 4th Production Room added in 2016.

The following change resulted in the increased electricity usage in 2016;

- Unit 1 used increasingly for Storage.
- Unit 2 being accessed more frequently due to increased process types and equipment needing storage between Campaigns as a result.
- Unit 2 with an additional Production Room in use.

2.1.2 Raw Materials

Details of Process related Raw Materials, Intermediates, Products used / generated at the site during 2016 are as follows;

Table 2:

Product	Material	2016 Process Usage
Isoniazid	Purified Water	21 Kg
	Methanol	88 Kg
	Isoniazide EP	44 Kg
	Isoniazid (Product)	45 Kg
Benzyl Benzoate	Benzyl Benzoate (Crude)	435 Kg
	Acetone	435 L
	Benzyl Benzoate (Product)	291 Kg
Thiamine	Purified Water	550L
Hydrochloride	Thiamine Hydrochloride USP	644Kg
	Isopropyl Alcohol	3900L
	Thiamine Hydrochloride (Product)	500Kg
Chromium III	Chromium Chloride Hexahydrate	1.5Kg
Chloride	Acetone GPR Grade	5L
	Ethyl Acetate GPR Grade	11L
	Chromium III Chloride (Product)	0.3Kg

2.2 Waste

There are four types of wastes generated at TopChem Pharmaceuticals which are as follows;

- Domestic Waste.
- Mixed Recyclable Waste.
- Hazardous Solid Waste.
- Hazardous Liquid Waste.

For Domestic & Mixed Recyclable waste, Barna Waste Disposal & Recycling is the approved waste disposal contractor.

For Hazardous waste (Solid & Liquid), Soltec Ireland Limited and SRCL, trading as ECO Safe Systems are the approved waste disposal contractors.

In 2014 SRCL, trading as ECO Safe Systems removed all the Hazardous Waste from the TopChem site.

The following is a summary of the quantity of waste collected from TopChem Pharmaceuticals during the review period Jan 2015 – Dec 2015.

Table 3:

Waste Type	Quantity 2015	Quantity 2016
Domestic Waste	0.27 Tonnes	0.47 Tonnes
Mixed Recyclables	0.34 Tonnes	0.58 Tonnes

The mixed recyclables collected by Barna Waste Disposal & Recycling are delivered to its facility in Carrowbrowne, Galway. Mixed recyclables are fed into their picking station where they are sorted into their individual waste fractions by a combination of machine (called a ballistic separator) and manual picking. Once separated materials are baled, stored and transferred off site to approved brokers for recycling.

Note:

- 1100 Liter Mixed Recyclable Bins is weighed by Barna Waste Disposal & Recycling.
- The 240 Litre Domestic Bins is weighed by Barna Waste Disposal & Recycling.

The Domestic Waste quantity has increased from 0.27 Tonnes in 2015 to 0.47 Tonnes in 2016, i.e. 74% increase. This is most likely due to increase in Production and Personnel.

The volume of mixed recyclables generated from the facility has also increased (58% increase) Also most likely due to increase in Production and Personnel.

Hazardous Solid & Liquid Waste Disposal 2016:

Table 4: Solid Waste: (Total 2392 Kg)

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	112	Pallet	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	155	Pallet	Solid Flammable Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	56	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	47	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	72	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	125	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	172	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	137	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	157	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	15	Вох	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 317298	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	15	Вох	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 317151	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	16	Вох	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 317151	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	16	Вох	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 317151	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	18	Вох	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 317151	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	21	Вох	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 317151	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	105	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	162	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	159	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	167	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	191	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belgulm. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	66	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	75	Pallet	Waste Packaging	Waste Packaging	15 01 10*	IE 317298	Recyfuel B4480 Zoning, Industriel D'Ehein, Engls, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	15	Box	Pharma Contaminated Glass	Waste Packaging	15 01 10°	IE 317943	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	28	Вох	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 317943	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	119	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	160	1000Ltr Cardboard Box	Solid Waste	Toluene contaminated rags	15 02 02*	IE 317944	Recyfuel B4480 Zoning, Industriel D'Ehein, Engis, Belguim. License D3200 / 61080 / RGPED / 2008 / 2 / AP	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	31	Вох	Pharma Contaminated Glass	Waste Packaging	15 01 10*	IE 318091	ATM – Afvalstoffen Terminal Moerdijk BV, Postbus 30 4780AA Moerdijk, Netherlands.	Secondary Fuel

Table 5:
Liquid Waste: (Total 16516 Kg)

Month	Date	Provider	C1 Number	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-site	Liquid waste Secondary Recovery location	Use for Residue waste
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	203	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	202	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	202	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	202	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	207	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	227	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

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Feb 2016	09/02/2016	ECO Safe Systems	SO003383	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	192	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 316729	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Feb 2016	09/02/2016	ECO Safe Systems	SO003383	178	210	Acidic Aqueous Waste	Acidic Waste (Aqueous)	16 05 07*	IE 316838	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317529	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	205	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317529	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	203	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317529	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	203	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317529	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	193	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317529	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	191	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317529	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe	SO003555	224	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	224	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	224	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Apr 2016	21/04/2016	ECO Safe Systems	SO003555	224	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	187	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	185	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpoot, Merseyside L33 7SG.	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	192	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	194	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	234	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	234	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany, License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	227	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	227	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	216	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	215	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	213	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Jun 2016	14/06/2016	ECO Safe Systems	SO003687	231	210	Solvent Liquid Waste	Chlorinated Waste	07 01 03*	IE 317152	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	176	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	186	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	200	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	183	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	229	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany, License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	220	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	220	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04°	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	220	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	219	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany, License Number is E97095037	Secondary Fuel
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	224	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Aug 2016	15/08/2016	ECO Safe Systems	SO003861	230	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04°	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowstey Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	206	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	206	210	Solvent Lîquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	220	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	220	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	225	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	225	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04°	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is £97095037	Secondary Fuel
Oct 2016	17/10/2016	ECO Safe Systems	SO003956	228	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	204	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	205	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	201	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	192	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	204	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	198	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	202	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	178	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	202	210	Solvent Liquid Waste	Non Chlorinated	07 05 04*	IE 317524	Avanti Environmental Group Ltd, Advanti Treatment & Transfer Station, Charley Wood Road, Knowsley Ind Est, Liverpool, Merseyside L33 7SG.	Secondary Fuel
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	208	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Month	Date	Provider	C1 Number Pickup	Quantity (Kgs)	Quantity (L)	Chemical Composition of Waste	Waste Stream	EWC Code	C1 Number Off-Site	Solid waste Secondary Recovery location	Use for Residue waste
Dec 2016	20/12/2016	ECO Safe Systems	SO004186	210	210	Solvent Liquid Waste	Sodium Hydroxide Solution	06 02 04*	IE 317528	Umweltservice Lindenschmidt KG, Krombacher Strabe 42 - 46, 57223. Kreuztal - Krombach Germany. License Number is E97095037	Secondary Fuel

Hazardous Waste Disposal Comparison:

Table 6:

Waste Stream	2014 Qty	2015 Qty	2016 Qty	Variance	Comment
Solid Waste	960 Kg	1464 Kg	2392Kg	+ 50%	A reflection of the increase in types of Production Processes in 2016
Contaminated Glassware	88 Kg	0	175 Kg	Returned as a Waste Stream	Related to larger output in 2016.
Contaminated Steel & Plastic Drums	64 Kg	177 Kg	421Kg	+ 137%	A reflection of the change of Raw Material Packaging in 2016
Non Chlorinated Waste	7304 Kg	5200 Kg	10137Kg	+ 95%	A reflection of the types of Production Processes and increased output in 2016
Chlorinated Waste	0 Kg	400 Kg	231Kg	+ 73%	A decrease of 73% related to Production Process type in 2016.
Basic Aqueous Waste	2302 Kg	1895 Kg	0Kg	Not used as a Waste Stream	Decrease aligns with introduction of NaOH as a Waste Stream.
Sodium Hydroxide	N/A	1842 Kg	4889Kg	+ 165%	Increase related to decrease of Basic Aqueous Waste
Hydrochloric Acid	N/A	197 Kg	0Kg	N/A	All Acidic & HCL waste removed as Acidic Waste.
Mercury Waste	0Kg	0 Kg	0 Kg	N/A	No change Year on Year.
Acidic Waste	0 Kgs	0 Kg	178 Kg	N/A	All Acidic & HCL waste removed as Acidic Waste.

2.3 Energy & Water Usage

Electricity is the only source of energy used in TopChem Pharmaceuticals.

Refer to section 2.1 for consumption details for the period under review.

As regards Water Usage at the site, any water required in the Production Process is purchased as a raw material. All remaining water requirements at the facility are for domestic purposes only, i.e. Toilets, Kitchen. Water is also used in the Production Laboratory for equipment cooling but this is non-process contacting.

During the period under review TopChem Pharmaceuticals purchased 8000L of Purified Water from Ultra-Pure Laboratories, Foxford, Co Mayo for use in the Production Process.

2.4 Environmental Incidents & Complaints

During the review period January 1st 2016 to December 31st 2016, no environmental complaints were received by TopChem Pharmaceuticals Limited.

There were no incidents at the TopChem Pharmaceuticals site which required reporting to the Environmental Protection Agency.

There were no Environmental incidents reported within TopChem Pharmaceuticals during the period Jan 1st 2016 – Dec 31st 2016.

3.0 Environmental Management of Activity

3.1 Environmental Objectives & Targets

Table 7 below is an update on each of the Objectives agreed for the period Jan 1st 2016 – Dec 31st 2016.

Table 7:

Objective	Status
Install system to collect rain water for servicing Toilets	Not completed. On the list of tasks to be completed in 2017.
Review Lighting across the facility with a view to reducing costs	Ongoing. All replacement fittings are LED e.g., Staircase, Exits and Production Areas.
Assess the viability and benefit of introduction of a "bike to work scheme"	Evaluated. At the moment there are no individuals interested in the Scheme but it will remain in place for 2017.

3.2 Environmental Management Report

The key environmental objective for the company in 2016 was to continue to track all conditions in the company's IPPC License (P0828-01) and ensure that the high level of environmental compliance achieved in previous years was maintained.

With this in mind the following is an overview of the environmental accomplishments for the facility during 2016,

- The company received no environmental complaints during the Year.
- Approval received from the EPA for Chlormethyl Laurate.
- All mobile bunds used at TopChem Pharmaceuticals were inspected on a regular basis and all were found to be satisfactory.
- The bund in the Chemical Store was certified on the 18/11/2015 by Chemstore, Clondrinagh Industrial Estate, Ennis Road, Limerick. The water used in the certification process was collected by Thornton's Tanker Services, Unit 53B, Parkwest Business Park, Dublin 10 and sent for treatment.
- An Environmental Noise Survey was completed by KD Environmental, 1 Swiftbrook Glen, Virginia, Co. Cavan, ref Report No 2015/01/01 on 15 December 2014. The noise monitoring was undertaken to verify compliance or otherwise with the Noise Emission Limits as in accordance with the guidelines as set out in guidance note for noise. It was observed that the specific noise level from the facility at all measurement locations was significantly below the relevant limits for day, evening and night time, hence no non-conformances were noted.
- The company's EHS Goals & Objectives and associated key performance indicators were updated on a monthly basis and results posted on a dedicated Environmental Health & Safety notice board.
- On site environmental communications were maintained with employees through EHS Representatives.
- The company continued to use approved waste disposal contractors for disposal of hazardous, domestic and recyclable waste streams generated on site.
- The company continued to facilitate EHS training on site in areas such as basic chemical awareness, use of spill kits, manual handling and fire safety training.
- Monthly Housekeeping Inspections were conducted on site.

Overall, the company continued to display high levels of control & employee awareness on environmental health and safety matters during 2016.

3.3 Environmental Management Proposals for 2017

Table 8:

Objective	Responsibility	How objective will be achieved	Timeframe
Install system to collect rain water for servicing Toilets	EHS Officer	Identify Service Contractor and implement accordingly	Q1- Q4 2017
Review Lighting across the facility with a view to reducing costs	EHS Officer	Reduce the # of bulbs per fitting and continue LED replacement	Q1 – Q4 2017
Assess the viability and benefit of introduction of a "bike to work scheme"	QA	Keep Process in place for future employee interest.	Q1 – Q4 2017

4.0 Financial Provision

TCP Ltd make allowances for financial provision as required under Condition No. 12 of licence no. P0828-01. Details of same can be referenced in the ELRA Report submitted to the Agency.

5.0 Licence Specific Reports

5.1 PRTR

Attached are the following AER / PRTR files which were submitted to the Agency in March 2016.

- Facility ID and Activities sheet
- Releases to Air nothing reported given TCP has no emissions to Air other than minor fugitive emissions.
- Releases to Water Nothing reported given TCP has no emissions to Water.
- Releases to Waste Water or Sewer Nothing recorded given TCP has no emissions to sewer other than wastes from Toilet and kitchen facilities and purified water from heating and cooling baths which are non-product contacting.
- Releases to Land Nothing reported given TCP has no emissions to Land.
- Treatment of Transfers of Waste

5.2 Residual Management Plan

Details can be referenced in the Residual Management Plan submitted to the Agency in March 2017.

5.3 Solvent Management Plan

As per condition 6.11.1, TCP must report on the use of solvents per each calendar Year as part of its AER.

As advised in the Solvent Management Plan submitted to the Agency in March 2017, due to the scale of the operation at TopChem Pharmaceuticals, only small volumes of solvents are used, hence there is no requirement for fugitive emissions monitoring or a solvent reduction plan.

The procurement, disposition and disposal of solvents are monitored on an on-going basis under the auspices of our internal quality control and environmental health and safety systems.

The Table overleaf summarises Solvents consumed at TCP for the period January 1st 2016 – December 31st 2016.

Solvents & Water Usage in litres at TCP from January 1st 2016 to December 31st 2016

Table 9:

Month	Acetone	Methanol	MeCN	EtoAC	Hexane	Heptane	THF	DCM	MTBE	EtOH	Toluene	IPA	Water
Stock carried over 2016 (L)	150	300	0	3	15	0	6.5	0.5	93	38.1	19	2580	2580
Solvents	ordered 20	016 in Litres	(L)										
Jan-16			40		10	1000						1280	
Feb-16	50	100								10			
Mar-16		25		25				10		25			
Apr-16	100							King to Will					2400
May-16	1350	650											
Jun-16	30	32.5			7.5	1200		5					2400
Jul-16										20		200	2400
Aug-16	20		20		719								
Sep-16								mo = 0 = 13	graph process			1560	
Oct-16	40	40	40						E DE MI				
Nov-16	125												3200
Dec-16	340	50	20							6		780	
Total Ordered (L)	2055	897.5	120	25	17.5	2200	0	15	0	61	0	3820	10400
Total In-house (L)	2205	1197.5	120	28	32.5	2200	0	15.5	93	99	19	6400	12980
Remaining Stocks End 2016 (L)	1000	500	0	0	5	1000	6.5	15.5	50	56	0	780	1760
Total Usage (L)	1155	698	120	28	27.5	500	0	0	43	43	19	5620	11220

*Additional Material Received from Sister Company TCL.

MeCN Acetonitrile **Ethyl Acetate EtoAC** = Tetrahydrofuran THF

IPA Isopropyl Alcohol **EtOH** Ethanol

Dichloromethane

DCM

Methyl- tert-Butyl- Ether **MTBE**

Table 10 below provides an overview of the total solvents procured by TCP during the review period January 1st 2016 – December 31st 2016.

It also illustrates the opening and closing balances on site for 2016 together with new waste produced, shipped and a volume balancing result.

Table 10:

Item	Unit	Quantity
Solvent Usage	Litres	19474
Opening Solvent Waste Balance Jan 2016		1479
Non Chlorinated solvent waste -		820
Chlorinated solvent Waste -	Litres	89
Basic Aqueous –	Littes	400
Acidic -		170
Mercury -		0
Net Solvent Waste Recorded Jan 2015 - Dec 2016		14277
Non Chlorinated solvent waste -	Litres	8831
Chlorinated solvent Waste -	Littes	191
Basic Aqueous –		5011
Acidic -		244
Mercury -		0
Closing Solvent Waste Balance Dec 2016		1246
Non Chlorinated solvent waste -		600
Chlorinated solvent Waste -	Litres	200
Basic Aqueous -	Littes	200
Acidic –		246
Mercury -		0
Solvent Waste shipped Jan 2016 - Dec 2016		16516
Non Chlorinated solvent waste =		10093
Chlorinated solvent Waste -		231
Basic Aqueous -	Litres	0
NaOH		6014
HCl		178
Acidic –		0
Mercury -		0
Solvent Volume Balancing Result (Solvent Usage V's Net Solvent Waste Recorded)*	%	135%

In summary, the volume of waste solvent produced does not meet the volume of solvent purchased. The Variation of 35 % could be accounted for by use of water to rinse vessels at the end of the process and for Cooling. Over 11,000 Litres of Purified Water was consumed during the Production Campaigns in the PL Department. Some of this 'solvent' will not go though the Waste Process. Purified Water is also used in Water Baths and for cooling of Product and Equipment without contamination. This water is not salvaged or reused. As such some of this water cannot be attributable. This is the 35% difference.

5.4 <u>ELRA:</u>

The ELRA Report was updated and submitted to the Agency in March 2017. During 2016, the following changes, as previously advised to the Agency, were implemented on site;

- One new product was introduced to the site in 2016: Chloromethyl Laurate.



Guldance to completing the PRTR workbook

PRTR Returns Workbook

REFERENCE YEAR 2016

1. FACILITY IDENTIFICATION

IDENTIFICATION	
Parent Company Name	TopChem Pharmaceuticals Limited
Facility Name	TopChem Pharmaceuticals Limited
PRTR Identification Number	P0828
Licence Number	P0828-01

Classes of Activity

CIBSES OF ACTIVITY	
No.	člass name
	Refer to PRTR class activities below

Address 1	Ballymoté Business Park
	Carrownanty
Address 3	
Address 4	
	THE THE PARTY OF T
	Sligó
Country	
Georginates of Location	-8.52186.54.0885
RivenBasin District	IEW.F
NACE Code	
	Manufacture of pharmaceutical preparations
AER Returns Contact Name	
AERIReturns Contact Email Address	frances@topchempharma.com
AER Returns Contact Position	QA & EHS Manager
AER Returns Contactif elephone Number	071 9189585
AER Returns Contact Mobile Phone Number	086 8738675
AER Returns Contact Fax Number	071 9197864
Production Volume	836.0
Production Volume Units	
Number of Installations	
Number of Operating Hours in Year	6000
Number of Employees	
User Feedback/Comments	Changes year on year are due to variation in Customer and Product
Ogot (resultation)	orders. This varies year on year. In addition staff numbers in such a
	small company will have a major variation on Domestic Waste and
	energy usage.
SALES ALIVERS	www.topchempharma.com

2. PRTR CLASS ACTIVITIES

Z. I ITH OLAGO ACTIVITIES	
Activity Number	Activity Name
	Installations using a chemical or biological process for the production
4(e)	on an industrial scale of basic pharmaceutical products

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

| PRTR# : P0828 | Facility Name : TopChem Pharmaceuticals Limited | Filename : P0828_2016.xls | Return Yeafrag2016bf 2

ls it applicable?	No
Have you been granted an exemption?	No
If applicable which activity class applies (as per	
Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being	
used?	Not Applicable

4. WASTE IMPORTED/ACCEPTED ONTO SITE

Guidance on waste imported/accepted onto site

Do you iroport/accept waste onto your site for onsite treatment (either recovery or disposal activities) ? No

4.1 RELEASES TO AIR

Link to previous years emissions data

SECTION A: SECTOR SPECIFIC PRTR POLLUTANTS	RELEASES TO AIR		Please enter all quantiti	es in this section in K	Gs
POLLUTANT	RELEASES TO AIR	METHOD	Annual Park		QUANTITY
POLLUTANT		f.fetnod Used	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year F (Fugitive) KG/Year
No. Annex II	tiame	LTC/E Vethod Code Designation or Description	Chassart and	0.0	0.0 0.0 0.0

^{*} Select a row by double-chrising on the Published Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS	RELEASES TO AIR	METHOD	Please onter all quantities in this section in KGs	QUANTITY
POLLUTART No. Annex II	Name	MCIE Method Code Designation or Description		A (Accidental) KG/Year F (Fugitive) KG/Year 0.0

^{*} Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C: REMAINING POLLUTANT EMISSIONS (As required in your Licence)

SECTION C : REMAINING POLLUTANT EMISSIONS (As requir	RELEASES TO AIR		Please enter all quantitie	s in this section in KC	QUANTITY	
Poliutant No.	Name	METHOD Method Used MC/E Method Code Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year

^{*} Select a rew by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Investory on Greenhouse Cance, lendfill operators are requested to provide summery date on fundfill gas [Redisons] Stared or stillands on their facilities to accompany the Figures for total medianes generated. Operators should only report their five methane (Fulfy emission to the convironment under Titude) (Other for Section A: Sector appetits PRTR pollutants above. Places complete the table below:

Landfill: Please enter summary data on the quantities of methane flared and / or utilised

Total estimated methane generation (as per site model) Methane flared Methane utilised in engine/s Net methane emission (as reported in Section

A above)

		Meth	od Used		
T (Total) kg/Year	M/C/E	Method Code	Designation or Description	Facility Total Capacity m3 per hour	
0.0				N'A	
0.0	3)(William Hustra		(Total Flanng Cap (Total Utilising Ca)
0.0				0.0	Total Owsing Cal
0.0				N'A	

4.2 RELEASES TO WATERS

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRITE POLLUTANTS	LEASES TO WATERS	Data on ambient manifesting of eternolourises water or grounded	Please enter all quantities in this section in KC	NOT be submitted under AER / PRTR Reporting so this miles QUANTITY
POLLUTANT No Array II	Name	MCDE Used Description Description	Erresion Point 1 (Total) KG/Year	A (Accidental) KG/Year F (Rugitive) KG/Year 0.0

* Select a row by double-clicking on the Pollutant Name (Column H) then click the delete button

SECTION B : REMAINING PRITE POLLUTANTS RELEASES TO WATERS	AND RESIDENCE OF STREET	Please enter all quantities in this section in KG	QUANTITY
POLLUTANT Na Arithma III	M.C.F. Method Code Designation or Descriptor	Emission Point 1 T. (Total) KGIYeer 0.0	A (Accidental) KGYeen F. (Rightive) KGYear 0.0

*Select a row by double-cicking on the Politicant Name (Column II) then cick the delete button

SECTION C : REMARKING POLLUTANT EMISSIONS (as required in your Licence)

SECTION C : REMARKING POLLLITANT EMISSIONS (as required in your Licence) RELEASES TO WATERS	A STATE OF THE PARTY OF THE PAR	Please enter all guantities in this section in KGs
POLLUIANI Poluiani No. Nano	Method Used Method Close Designation of Description	Envision Bolix 1 T. (Total) KG/Yeer: A.(Accidental) KG/Yeer B.(Fuptive) KG/Year: 0.0

^{*} Select a row by double-clicking on the Polistant Name (Column II) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

Link to previous years emissions deta

SECTION	IA:PR	TR POL	LUTANTS

	SFER OF POLLUTANTS DESTINED FOR WASTE.	VATER TR	REATMENT OR SEWER F	Please enter all quantitie	s in this section in KG	QUANTITY	
No. Annex	Name	MCE	Method Code Designation or Description	Emission Point 1		A (Accidental) KG/Year 0.0 0.6	F (Fugitive) KG/Year 0.0

^{*} Select a row by double-dicking on the Polistant Name (Column H) then click the delete button

SECTION B: REMAINING POLLUTANT EMISSIONS (as required in your Licence) OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-W.	ATER TR	EATMENT OR SEV	VER THOD	Please enter all quantitle	s in this section in K	QUANTITY	
Poliutant Name	MCE	t.fethod Code	Method Used	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year 0.0	F (Fugitive) KG/Year

^{*} Select a true by double-choking on the Poliulant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

Link to previous years emissions data

SECTION A: PRTR POLLUTANTS		RELEASES TO LAND	- 146	AND DESCRIPTION OF THE PARTY OF	Please enter all quantities	in this section in KGs	QUANTITY
	POLLUTANT			Method User	Perfection Print C	T.(Total) KG/Year	A (Accidentel) KG/Year
No. Annex II	Name		ALL.	[Desgrates Constitution of the Constitution of	0.0		0,0

^{*}Select a mw by druble-clicking on the Pollutant Name (Column H) then click the delete button

SECTION B: REMAINING POLLUTANT EMISSIONS (as re-	quired (n your Licence) RELEASES TO LAND		Please enter all quantities in this section in Ki	
POLLUTANT		Method Used	P. Stranding and Strand	QUANTITY
Polistent No. Name	· · · · · · · · · · · · · · · · · · ·	100 Printing of Description	Emission Food 1 (Total) KG/Year 0,0	A (Accidental) KG/Year 0,0 0,0

^{*} Select a row by double-clicking on the Pobutant Name (Column R) then click the delete button

	i jur		Quantity (Tornes pe Year)	or all quantities on this sheet in Tomes	Wasie		Method Used		Haz Warte Name and ExercePrevel for of heart Debty site Name and LeancePrevel for of RecoverDramater	Haz Waste Adaress of heat Destroken Facility hanthat these Address of Receiver 2 aposes	Name and Louves Permit No. and Address of Finish Recovery Discount (HAZARDOUS WASTE ONLY)	Actual Address of Four Destructor In Front Recovery Disposed Ser- INAZAROGUE WASTE ONLY
	European Waste			Description of Waste	Treatment Operation	MCE	Method Used	Location of Treatment			L'SHETT OF FE	See II Flore
Transfer Deshruston	Code	Hazardous			R1	м	Weighed	Abroad	ECO Sale Systems Limited 54-2 WCP-DC-09- 1203-01	Und 1A.Allied Industrial Estate, kylemore Road Ballyfermot, Dublin 10 Ireland	46 57223 Kreuztal Kromback, German V Recyfuel B4480	Lindenschmidt KG:Krombacher Strabe 42 - 48 57223
To Other Countries	07 01 03	Yes		organic halogenated solvents, westung to equals and mother liquots	Rt	М	Weighed	Abroad	ECO Sale Systems Limited 54-2 WCP-DC-09- 1203-01	Unit 1A Albed Industrial Estate Kylemore Road Baltyfermot, Dublin 10 Ireland	Zoning D3200 / 81080 / RGPED / 2008 / 2 / AP, Recyluol B4480 Zoning Industriel D'Ehem Engia, Belgium Umweltservice	Recytuel 84480 Zoning Industriel D'Ehers,Engis, , Belgium
To Other Countries	16 05 07	Yes	(discarded morganic chemicals consisting of 0.1 or containing dangerous substances	Rt	M	Weighed	Abroad	ECO Sale Systems Limited 54-2 WCP-DC-09- 1203-01	Unit 1A Albed Industrial Estate Kylemore Road Ballyfermot Dubin 10 (reland	Lindenschmidt KG_E97095037_Linmentaervi cs_Lindenschmidt KG_Krombacher Strabe 42 - 46.57223 Krauztal Kromback_German y Advanti Environmental Group	Lindenechmidt KG,Krombacher Strabe 42 48,57223
To Other Countries	07 05 04	Yes		other organic solvents, washing liquids and 9.7 mother liquors	R1	М	Weighed	Abroad	ECO Sale Systems £msted 54-2 WCP-DC-09- 1201-01	Unst 1A Albed Industrial Estate Kylemore Road Bathylemiol Dubin 10 Ireland	Ltd EPR/XP3G38HX, Charley Wood Road Knowsley Industrial Park, Merseyside L33 7SG United Kingdom Royfuel 8489 Zonria, D3200 (61080)	Charley Wood Road Knowsley Industrial Park Merseyside ,L33 75G United Kingdom
To Other Countries	15 01 10	Yes		packaging containing residues of or 0 6 contaminated by dangerous substances	R1	М	Weighed	Abroad	ECO Sale Systems Limited 54-2 WCP-DC-09- 1203-01	Und 1A Albed Industrial Estate Kylemore Road Ballylermol Dublin 10 Ireland	RGPED 2008 2 AP, Recyfuel B4480 Zoneng Industriel DEhsen, Engis., Belgium Recyfuel B4480 Zoneng, D3200 61080	Recytuel 84450 Zoning Industriet D'Ehem, Engle, , Belgarn
To Other Countries		Yes		absorbents. filter materials (including oil filters not otherwise specified), veping cloths, protective clothing contaminated by 1.8 dangerous substances	R1	M	Washed	Abroad	ECO Safe Systems Limited 54-2 WCP-DC-09- 1203-01	Unit 1A.Allied Industrial Estate.Kylemore Road Battyfermot.Dublin 10.tretand	RGPED / 2008 / 2 / AP, Recytisel 84480 Zorung, Industriel D'Ehein, Engre, Belgium	Recylust 84480 Zoning, Industrial D'Ehein, Engis, Balgium