

Facility Information Summary	
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AER Reporting Year	2018
Licence Register Number	P0693-02
Name of site	Takeda Ireland Limited (Grange Castle)
Site Location	Grange Castle Business Park Nangor Road Dublin 22
NACE Code	2120
Class/Classes of Activity	Production of pharmaceutical products including intermediates
National Grid Reference (6E, 6 N)	103819 E, 390659 N

A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of compliance with your licence listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.



Takeda Ireland Limited is a bulk pharmaceutical plant located in Grange Castle Business Park, Nangor Road, Dublin 22. The existing installation (P1 building) is a multi-purpose pharmaceutical plant which makes multiple products each year on a batch basis. The installation operates 24 hours a day, seven days a week. This license provides for an increase in the boundary to include two new buildings (P2 and P3).

During 2018, there was one complaint associated with odours and there were three incidents associated with maintenance of monitoring equipment (at EP-P1-02), equipment issues and elevated noise levels which were not attributable to on-site operational activities.

Also, during 2018 two Compliance Investigations were created by the EPA associated with Monitoring issues. The first of them is related to one of the incidents mentioned above (air monitoring equipment offline at EP-P1-02) and the second to site specific issues detected by the EPA during an inspection in June 2018 (at EP-P1-03 air monitoring point).

**Declaration:**

All the data and information presented in this report has been checked and certified as being accurate. The quality of the information is assured to meet licence requirements.

	
Signature Group/Facility manager (or nominated, suitably qualified and experienced deputy)	Date

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Answer all questions and complete all tables where relevant

Additional information

- Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licensed emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables

Yes	
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### Periodic/Non-Continuous Monitoring

- 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below

No	
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- 3 Was all monitoring carried out in accordance with EPA guidance note AG2 and using the basic air monitoring checklist?

AGN2

Yes	
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**Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)**

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments -reason for change in % mass load from previous year if applicable
MP-P1-02	TA Luft organic substances class 1	Quarterly	20	100 % of values < ELV	1.7	mg/Nm3	yes	EN 13649:2001	0.9	Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 1	Quarterly	20	100 % of values < ELV	1.5	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 1	Quarterly	20	100 % of values < ELV	1.6	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 1	Quarterly	20	100 % of values < ELV	1.5	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 2	Quarterly	100	100 % of values < ELV	1.9	mg/Nm3	yes	EN 13649:2001	1.3	Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 2	Quarterly	100	100 % of values < ELV	1.7	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 2	Quarterly	100	100 % of values < ELV	2.7	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 2	Quarterly	100	100 % of values < ELV	4.4	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter

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MP-P1-02	TA Luft organic substances class 3	Quarterly	150	100 % of values < ELV	4.6	mg/Nm3	yes	EN 13649:2001	2.2	Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 3	Quarterly	150	100 % of values < ELV	4.1	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-02	TA Luft organic substances class 3	Quarterly	150	100 % of values < ELV	2.7	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-03	TA Luft organic substances class 1	Quarterly	20	100 % of values < ELV	6.3	mg/Nm3	yes	EN 13649:2001	<20	Result Reported is Average for the Quarter
MP-P1-03	TA Luft organic substances class 1	Quarterly	20	100 % of values < ELV	5.9	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-03	TA Luft organic substances class 2	Quarterly	100	100 % of values < ELV	1.4	mg/Nm3	yes	EN 13649:2001	<20	Result Reported is Average for the Quarter
MP-P1-03	TA Luft organic substances class 2	Quarterly	100	100 % of values < ELV	7.2	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-03	TA Luft organic substances class 2	Quarterly	100	100 % of values < ELV	6.8	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
MP-P1-03	TA Luft organic substances class 3	Quarterly	150	100 % of values < ELV	10.7	mg/Nm3	yes	EN 13649:2001	<0.5	Result Reported is Average for the Quarter
MP-P1-03	TA Luft organic substances class 3	Quarterly	150	100 % of values < ELV	10.1	mg/Nm3	yes	EN 13649:2001		Result Reported is Average for the Quarter
EP-UT-01	Nitrogen oxides (NOx/NO2)	Annually	150	100 % of values < ELV	119.2	mg/Nm3	yes	EN 14792:2017		

Note 1: Volumetric flow shall be included as a reportable parameter

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<b>Continuous Monitoring</b>					

4	Does your site carry out continuous air emissions monitoring?	Yes	
	If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)		
5	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below	Yes	There was one incident reported to the Agency in relation to loss of THC monitoring on the VOC system EP-P1-02, INCI013872
6	Do you have a proactive service agreement for each piece of continuous monitoring equipment?	Yes	
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

**Table A2: Summary of average emissions -continuous monitoring**

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
EP-P1-02	THC	N/A	N/A	SELECT	ppm	N/A	N/A	2.5	N/A	INCI13872- VOC System remained fully operational there were no uncontrolled releases

note 1: Volumetric flow shall be included as a reportable parameter.

**Table A3: Abatement system bypass reporting table**

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

\* this should include all dates that an abatement system bypass occurred

\*\* an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

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## AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

P0693-02

Year

2018

Additional information

Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions. If you **do not have** licensed emissions you only need to complete table W1 and or W2 for storm water analysis and visual inspections

Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections

Yes	
Yes	

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any revision thereof*	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Jan-18	35	All values < ELV	15.1	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Feb-18	35	All values < ELV	27.1	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Mar-18	35	All values < ELV	34.4	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Apr-18	35	All values < ELV	15.1	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	May-18	35	All values < ELV	8.7	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Jun-18	35	All values < ELV	11.9	mg/L	no (if no please enter details in comments box)	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Jul-18	35	All values < ELV	23.8	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Aug-18	35	All values < ELV	23.1	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Sep-18	35	All values < ELV	17	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Oct-18	35	All values < ELV	34.4	mg/L	no (if no please enter details in comments box)	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Nov-18	35	All values < ELV	24.9	mg/L	yes	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	Total organic carbon (TOC) (as total C or COD/3)	Total Organic Carbon (as C)	Dec-18	35	All values < ELV	27.3	mg/L	no (if no please enter details in comments box)	Result Reported is Maximum TOC for the Month
EP-WS-01	onsite	SELECT	pH	Jan-18	7-9	All values < ELV	7.80	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Feb-18	7-9	All values < ELV	7.96	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Mar-18	7-9	All values < ELV	7.76	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Apr-18	7-9	All values < ELV	7.70	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	May-18	7-9	All values < ELV	7.97	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Jun-18	7-9	All values < ELV	8.22	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Jul-18	7-9	All values < ELV	8.17	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Aug-18	7-9	All values < ELV	8.40	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Sep-18	7-9	All values < ELV	8.31	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Oct-18	7-9	All values < ELV	8.11	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Nov-18	7-9	All values < ELV	7.80	pH units	yes	Result Reported is Average pH for the Month
EP-WS-01	onsite	SELECT	pH	Dec-18	7-9	All values < ELV	7.58	pH units	yes	Result Reported is Average pH for the Month

\*trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
N/A	N/A	N/A	SELECT	N/A	N/A

## AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

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Year

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## Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below

No	Additional information
Yes	

Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box

[External/Internal Lab Quality checklist](#) [Assessment of results checklist](#)

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof <sup>Note 2</sup>	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	62	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B	2049.9	
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	350	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	103	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	70	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	600	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	490	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	160	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	470	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	250	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	BOD	composite	Monthly	Monthly	2000	All values < ELV	155	mg/L	yes	Dissolved Oxygen Meter (Electrode)	APHA / AWWA "Standard Methods"	APHA 5210-B		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	218	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D	460.8	
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	17	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	12	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	132	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	40	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	18	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	31	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	76	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	47	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	29	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	8	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Suspended Solids	composite	Monthly	Monthly	400	All values < ELV	15	mg/L	yes	Gravimetric analysis	APHA / AWWA "Standard Methods"	APHA 2540-D		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	110	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E	1095.5	
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	172	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	55	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	86	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	56	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	69	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	116	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	52	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	204	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	56	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	305	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Sulphate	composite	Monthly	Monthly	500	All values < ELV	100	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 4500-SO <sub>4</sub> <sup>2-</sup> -E		
MP-WW-01	Wastewater/Sewer	Detergents (as MBAS)	composite	Monthly	Monthly	100	All values < ELV	0.203	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 5540-C	1.7	
MP-WW-01	Wastewater/Sewer	Detergents (as MBAS)	composite	Monthly	Monthly	100	All values < ELV	0.234	mg/L	yes	Spectrophotometry (Colorimetry)	APHA / AWWA "Standard Methods"	APHA 5540-C		

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## AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

P0693-02

Year

2018

## Continuous monitoring

Does your site carry out continuous emissions to water/sewer monitoring?

If yes please summarise your continuous monitoring data below in Table W4 and compare it to its relevant Emission Limit Value (ELV)

6 Did continuous monitoring equipment experience downtime? If yes please record downtime in table W4 below

7 Do you have a proactive service contract for each piece of continuous monitoring equipment on site?

8 Did abatement system bypass occur during the reporting year? If yes please complete table W5 below

Table W4: Summary of average emissions -continuous monitoring

Emission reference no:	Emission released to	Parameter/ Substance	ELV or trigger values in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Monthly results	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	119.24	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	218.58	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	191.2	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	117.21	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	114.8	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	110.93	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	116.43	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	132.78	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	130.74	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	138.09	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	185.79	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-01	Wastewater/Sewer	volumetric flow	304	Monthly	All values < ELV	m <sup>3</sup> /day	193	N/A	N/A	N/A	Result reported is Maximum Flow for the Month
MP-WW-02	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.01	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-03	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.42	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-04	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.32	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-05	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.54	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-06	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.29	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-07	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.42	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-08	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.82	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-09	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.52	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-10	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.60	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-11	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.11	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-12	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	7.60	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-13	Wastewater/Sewer	pH	6-10	Monthly	All values < ELV	pH units	6.95	N/A	N/A	N/A	Result reported is Average pH for the Month
MP-WW-14	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	8.40	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-15	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	9.50	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-16	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	6.13	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-17	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	9.43	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-18	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	13.15	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-19	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	17.78	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-20	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	19.97	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-21	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	17.14	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-22	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	14.90	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-23	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	13.95	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-24	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	11.46	N/A	N/A	N/A	Result reported is Average Temperature for the Month
MP-WW-25	Wastewater/Sewer	Temperature	42	Monthly	All values < ELV	degrees C	8.88	N/A	N/A	N/A	Result reported is Average Temperature for the Month

note 1: Volumetric flow shall be included as a reportable parameter.

Table W5: Abatement system bypass reporting table

Date	Duration (hours)	Location	Resultant emissions	Reason for bypass	Corrective action*	Was a report submitted to the EPA?	When was this report submitted?
N/A	N/A	N/A	N/A	N/A	N/A	SELECT	N/A

\*Measures taken or proposed to reduce or limit bypass frequency

Bund/Pipeline testing template				Lic No: P0693-02		Year: 2018																																													
<div style="display: flex; justify-content: space-between;"> <div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Bund testing</div> <div style="background-color: #e0f0ff; padding: 2px; margin-bottom: 5px;">dropdown menu click to see options</div> </div> <div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Additional information</div> </div> </div> <p>Are you required by your licence to undertake integrity testing on bunds and containment structures ? if yes please fill out table B1 below listing all <b>new bunds and containment structures</b> on site, in addition to <b>all bunds which failed the integrity test-all bunding structures which failed including mobile bunds must be listed in the table below. please include all bunds outside the licenced testing period</b> (mobile bunds and chemstore included)</p> <p>1</p> <p>2 Please provide integrity testing frequency period</p> <p>Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore"</p> <p>3 type units and mobile bunds)</p> <p>4 How many bunds are on site?</p> <p>5 How many of these bunds have been tested within the required test schedule?</p> <p>6 How many mobile bunds are on site?</p> <p>7 Are the mobile bunds included in the bund test schedule?</p> <p>8 How many of these mobile bunds have been tested within the required test schedule?</p> <p>9 How many sumps on site are included in the integrity test schedule?</p> <p>10 How many of these sumps are integrity tested within the test schedule?</p> <p><b>Please list any sump integrity failures in table B1</b></p> <p>11 Do all sumps and chambers have high level liquid alarms?</p> <p>12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?</p> <p>13 Is the Fire Water Retention Pond included in your integrity test programme?</p>				<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Yes</td><td></td></tr> <tr><td>3 years</td><td>Last testing reported in AER 2017</td></tr> <tr><td>Yes</td><td></td></tr> <tr><td>8</td><td></td></tr> <tr><td>All</td><td></td></tr> <tr><td>16</td><td></td></tr> <tr><td>Yes</td><td></td></tr> <tr><td>All</td><td></td></tr> <tr><td>All</td><td></td></tr> <tr><td>All</td><td></td></tr> <tr><td>Yes</td><td></td></tr> <tr><td>No</td><td></td></tr> <tr><td>No</td><td></td></tr> </table>		Yes		3 years	Last testing reported in AER 2017	Yes		8		All		16		Yes		All		All		All		Yes		No		No																					
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<p><b>Table B1: Summary details of bund /containment structure integrity test</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Bund/Containment structure ID</th> <th>Type</th> <th>Specify Other type</th> <th>Product containment</th> <th>Actual capacity</th> <th>Capacity required*</th> <th>Type of integrity test</th> <th>Other test type</th> <th>Test date</th> <th>Integrity reports maintained on site?</th> <th>Results of test</th> <th>Integrity test failure explanation &lt;50 words</th> <th>Corrective action taken</th> <th>Scheduled date for retest</th> <th>Results of retest(if in current reporting year)</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table> <p><small>*Capacity required should comply with 20% or 100% containment rule as detailed in your licence</small></p> <p>Has integrity testing been carried out in accordance with licence requirements and are all structures tested in</p> <p>15 line with BS8007/EPA Guidance? <a href="#">bundings and storage guidelines</a></p> <p>16 Are channels/transfer systems to remote containment systems tested?</p> <p>17 Are channels/transfer systems compliant in both integrity and available volume?</p>														Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Yes</td><td></td></tr> <tr><td>Yes</td><td></td></tr> <tr><td>Yes</td><td></td></tr> </table>		Yes		Yes		Yes	
Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)																																					
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Yes																																																			
Yes																																																			
Yes																																																			
<p><b>Pipeline/underground structure testing</b></p> <p>Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc ? if yes please fill out table 2 below listing all</p> <p>1 underground structures and pipelines on site <b>which failed the integrity test and all which have not been tested within the integrity test period as specified</b></p> <p>2 Please provide integrity testing frequency period</p> <p><small>*Please note integrity testing means water tightness testing of all underground pipelines (as required under your licence)</small></p>														<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Yes</td><td></td></tr> <tr><td>3 years</td><td>Integrity Testing of Underground Structures was conducted in 2018 and are scheduled for re-testing in 2021</td></tr> </table>		Yes		3 years	Integrity Testing of Underground Structures was conducted in 2018 and are scheduled for re-testing in 2021																																
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<p><b>Table B2: Summary details of pipeline/underground structures integrity test</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Structure ID</th> <th>Type system</th> <th>Material of construction:</th> <th>Does this structure have Secondary containment?</th> <th>Type of secondary containment</th> <th>Type integrity testing</th> <th>Integrity reports maintained on site?</th> <th>Results of test</th> <th>Integrity test failure explanation &lt;50 words</th> <th>Corrective action taken</th> <th>Scheduled date for retest</th> <th>Results of retest(if in current reporting year)</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table>														Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Please use commentary for additional details not answered by tables/ questions above </div>													
Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)																																								
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A																																								

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<b>Groundwater/Soil monitoring template</b>	Lic No:	P0693-02	Year	2018
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		Comments	
1	Are you required to carry out groundwater monitoring as part of your licence requirements?	yes	Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretation as an additional section in this AER
2	Are you required to carry out soil monitoring as part of your licence requirements?	no	
3	Do you extract groundwater for use on site? If yes please specify use in comment section	no	
4	Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below.	no	
5	Is the contamination related to operations at the facility (either current and/or historic)	no	
6	Have actions been taken to address contamination issues? If yes please summarise remediation strategies proposed/undertaken for the site	N/A	
7	Please specify the proposed time frame for the remediation strategy	N/A	
8	Is there a licence condition to carry out/update ELRA for the site?	N/A	
9	Has any type of risk assessment been carried out for the site?	N/A	
10	Has a Conceptual Site Model been developed for the site?	N/A	
11	Have potential receptors been identified on and off site?	N/A	
12	Is there evidence that contamination is migrating offsite?	N/A	

**Table 1: Upgradient Groundwater monitoring results**

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+.	unit	GTVs*	IGV	Upward trend in pollutant concentration over last 5 years of monitoring data
May-18	MP-WG-01	pH	APHA 4500-H <sup>+</sup>	Biannually	7.1	7.1	pH Units	≥ 6.5 and ≤ 9.5	IGV (EPA, 2003)	no
May-18	MP-WG-01	COD	APHA 5220-D	Biannually	21	21	mg/l	N/A	N/A	no
May-18	MP-WG-01	Ammonia	APHA 4500-NH <sub>3</sub> -F	Biannually	0.02	0.02	mg/l	N/A	N/A	no
May-18	MP-WG-01	Conductivity	APHA 2510-B	Biannually	1077	1077	uS/cm	1875	GWTV SI 366/2016	no
May-18	MP-WG-01	Trace Organics	APHA 6410-B	Biannually	0.005	0.005	mg/l	listed individually	IGV (EPA, 2003)	no
Aug-18	MP-WG-01	pH	APHA 4500-H <sup>+</sup>	Biannually	7.02	7.02	pH Units	≥ 6.5 and ≤ 9.5	IGV (EPA, 2003)	no
Aug-18	MP-WG-01	COD	APHA 5220-D	Biannually	20	20	mg/l	N/A	N/A	no
Aug-18	MP-WG-01	Ammonia	APHA 4500-NH <sub>3</sub> -F	Biannually	0.03	0.03	mg/l	N/A	N/A	no
Aug-18	MP-WG-01	Conductivity	APHA 2510-B	Biannually	1075	1075	cS/m	1875	GWTV SI 366/2016	no
Aug-18	MP-WG-01	Trace Organics	APHA 6410-B	Biannually	0.5	0.5	mg/l	listed individually	IGV (EPA, 2003)	no

+. where average indicates arithmetic mean

++. maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

<b>Groundwater/Soil monitoring template</b>	Lic No:	P0693-02	Year	2018
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**Table 2: Downgradient Groundwater monitoring results**

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	IGV	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
May-18	MP-WG-02	pH	APHA 4500-H <sup>+</sup>	Biannually	7.0	7.0	pH Units	≥ 6.5 and ≤ 9.5	IGV (EPA, 2003)	no
May-18	MP-WG-02	COD	APHA 5220-D	Biannually	18	18	mg/l	N/A	N/A	no
May-18	MP-WG-02	Ammonia	APHA 4500-NH <sub>3</sub> -F	Biannually	0.02	0.02	mg/l	N/A	N/A	no
May-18	MP-WG-02	Conductivity	APHA 2510-B	Biannually	1076	1076	uS/cm	1875	GWTV SI 366/2016	no
May-18	MP-WG-02	Trace Organics	APHA 6410-B	Biannually	0.005	0.005	mg/l	listed individually	IGV (EPA, 2003)	no
Aug-18	MP-WG-02	pH	APHA 4500-H <sup>+</sup>	Biannually	6.92	6.92	pH Units	≥ 6.5 and ≤ 9.5	IGV (EPA, 2003)	no
Aug-18	MP-WG-02	COD	APHA 5220-D	Biannually	17	17	mg/l	N/A	N/A	no
Aug-18	MP-WG-02	Ammonia	APHA 4500-NH <sub>3</sub> -F	Biannually	0.06	0.06	mg/l	N/A	N/A	no
Aug-18	MP-WG-02	Conductivity	APHA 2510-B	Biannually	822	822	cS/m	1875	GWTV SI 366/2016	no
Aug-18	MP-WG-02	Trace Organics	APHA 6410-B	Biannually	0.5	0.5	mg/l	listed individually	IGV (EPA, 2003)	no

\*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.

[Groundwater monitoring template](#)

More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)

[Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites \(EPA 2013\).](#)

\*\*Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS), if the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

[Drinking water \(private supply\)](#) [Drinking water \(public supply\)](#) [Interim Guideline Values \(IGV\)](#)  
[Groundwater regulations GTV's standards](#) [Surface water EQS standards](#)

**Table 3: Soil results**

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Where additional detail is required please enter it here in 200 words or less

<b>Environmental Liabilities template</b>	Lic No:	P0693-02	Year	2018
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[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

		Commentary	
1	ELRA initial agreement status	Submitted and not agreed by EPA;	
2	ELRA review status	Review required and completed	ELRA Reviewed and submitted to the EPA for approval. Case Number: (LR008690) ELRA Currently being updated to reflect construction of the P2 and P3 facilities.
3	Amount of Financial Provision cover required as determined by the latest ELRA	The cost to address and remediate the worst case scenario cost for an unknown environmental liability relating to the site is estimated in this ELRA as €658,819 (including 25% contingency and VAT)	
4	Financial Provision for ELRA status	Submitted and not agreed by EPA;	
5	Financial Provision for ELRA - amount of cover	TILGC is insured by Chartis and the insurance policy covers any liability in respect of pollution conditions on and off site and in relation to TILGC property and the property of others to a value of €25,000,000 per claim.	
6	Financial Provision for ELRA - type	Environmental Impairment Liability insurance	
7	Financial provision for ELRA expiry date	Enter expiry date	
8	Closure plan initial agreement status	Closure plan submitted and agreed by EPA	
9	Closure plan review status	Review required and completed	
10	Financial Provision for Closure status	Submitted and not agreed by EPA;	Closure plan submitted to the EPA for approval. Case Number:(LR008691) Closure plan currently being updated to reflect construction of the P2 and P3 facilities.
11	Financial Provision for Closure - amount of cover	It is estimated that a cost of ca. €811,684 (including 25% contingency, one year of aftercare security / maintenance, and VAT) would be required to implement the Closure Plan to address known liabilities.	
12	Financial Provision for Closure - type	Environmental Impairment Liability insurance	
13	Financial provision for Closure expiry date	N/A	

<b>Environmental Management Programme/Continuous Improvement Programme template</b>		Lic No:	P0693-02	Year	2018
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Highlighted cells contain dropdown menu click to view		Additional Information	
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information	Yes	
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes	
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes	
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	

<b>Environmental Management Programme (EMP) report</b>					
Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Energy Efficiency/Utility conservation	Integrate P2 and P3 Building into the ISO 50001 Energy Management System	100	Completed energy design reviews for P2 and P3. New energy meters have been installed and connected back to BMS.	Section Head	Reduced emissions
Waste reduction/Raw material usage efficiency	Optimise Waste Management for P2 and P3 building	70	Waste equipment designed to ensure appropriate segregation of waste streams. Aqueous and solvent waste streams identified and integrated into existing P1 waste systems. Solid waste streams identified and appropriately classified.	Section Head	Improved Environmental Management Practices
Reduction of emissions to Air	Installation of carbon bed scrubber in ensure compliance with IEL Limits	100	Carbon beds were installed and commissioned. Test programme completed. All results were in compliance with licence limits. Project to optimise frequency of bed change-over completed. All monitoring results to date have been significantly below licence limits.	Section Head	Improved Environmental Management Practices
Reduction of emissions to Wastewater	Optimisation of WWTP to receive P2 Waste	10	HPLC purchased, however P2 plant not completed or handed over by Dec 2018.	Section Head	Reduced emissions

Environmental Management Programme/Continuous Improvement Programme template				Lic No:	P0693-02	Year	2018
Reduction of emissions to Air	Review of Waste Gas Generation	100	Review of waste gas generation processes from P2 completed. VOC confirmed it has treatment capacity for P2 waste gases.	Section Head		Improved Environmental Management Practices	
Additional improvements	Conduct an Annual Environmental Awareness Week	100	EHS Awareness week conduct	EHS Team		Improved Environmental Management Practices	
Additional improvements	Integration of new licence incorporating P2 and P3	75	Ensure compliance with all licen	Section Head		Improved Environmental Management Practices	

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Environmental Management Programme/Continuous Improvement Programme template				Lic No:	P0693-02	Year	2018
Environmental Management Programme (EMP)							
Objective Category	Target	Status (% completed)	Key Actions	Responsibility	Intermediate outcomes		
Energy Efficiency/Utility conservation	Integrate P2 and P3 Building into the ISO 50001 Energy Management System	-	Establish baseline readings and develop EPI's for P2 and P3.	Section Head	Reduced emissions		
Waste reduction/Raw material usage efficiency	Optimise Waste Management for P2 and P3 building	-	Classify waste streams for P3 and identify appropriate disposal or recovery routes. Commission P2 waste skid. Optimisation and segregation of waste streams and reduction of off site hazardous waste treatment for P2.	Section Head	Reduced emissions		
Reduction of emissions to Air	Installation of continuous monitoring device on carbon bed scrubber system	-	Installation of continuous monitor to further optimise efficiency of carbon beds and reduction of waste.	Section Head	Improved Environmental Management Practices		
Additional improvements	Conduct an Annual Environmental Awareness Week	-	Conduct an EHS Awareness week addressing environmental topics of concern.	EHS Team	Improved Environmental Management Practices		

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Noise monitoring summary report	Lic No: P0693-02	Year	2018
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1 Was noise monitoring a licence requirement for the AER period?

If yes please fill in table N1 noise summary below

Yes

2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

Noise  
Guidance  
note NG4

Yes

3 Does your site have a noise reduction plan

No

4 When was the noise reduction plan last updated?

N/A

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

No

**Table N1: Noise monitoring summary**

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA <sub>eq</sub>	LA <sub>90</sub>	LA <sub>10</sub>	LA <sub>max</sub>	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is site compliant with noise limits (day/evening/night)?
05/09/2018	09:22 - 13:24	MP-NS-01	N/A	54	47	54	71	No	N/A	On-site noises include; distant plant noise. Main sources of noise off-site audible was from vehicular traffic. Interference noise include; birds singing, vehicular traffic, trees rustling and passing overhead aircraft traffic.	Yes
06/09/2018	00:54 - 01:09	MP-NS-01	N/A	47	44	47	62	No	N/A	On-site noises include; distant plant noise. Main sources of off-site noise audible was vehicular traffic.	Yes
05/09/2018	10:01 - 13:05	MP-NS-02	N/A	54	52	55	69	No	N/A	On-site noises include; distant plant noise and construction noises. Main sources of off-site noise audible, was from a generator operating, neighbouring site operations and busses. Interference noise include; birds singing, vehicular traffic, and trees rustling.	Yes
05/09/2018	23:45 - 00:00	MP-NS-02	N/A	50	49	51	55	No	N/A	On-site noises include; distant plant noise. Main sources of off-site noise audible was generated from a generator type noise operating and neighbouring site operations.	Yes
05/09/2018	15:45 - 16:15	MP-NS-03	N/A	54	47	55	72	No	N/A	On-site noises include; plant noise (general process noise from the site activities) and construction noises (not related to normal site operations). Interference noise include; birds singing, vehicular traffic, general activity from neighbouring facility and passing overhead aircraft traffic.	Yes
05/09/2018	23:00 - 23:15	MP-NS-03	N/A	42	40	42	68	No	N/A	On-site noises include; distant plant noise. Interference noise include; neighbouring site operations.	Yes
05/09/2018	09:41 - 14:55	MP-NS-04	N/A	58	47	59	78	No	N/A	On-site noises include; distant plant noise. Main sources of noise off-site audible was from vehicular traffic. Interference noise include; birds singing, vehicular traffic, trees rustling and passing overhead aircraft traffic.	Yes
05/09/2018	00:20 - 00:35	MP-NS-04	N/A	55	39	44	78	No	N/A	On-site noises include; distant plant noise. Interference noise include; birds singing, trees rustling and vehicular traffic.	Yes

\*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

nothing\*\*

\*\*Exceedances was mainly due to interference noises (i.e. neighbouring site operations, vehicular traffic) and not to noise generated by general activities at the Takeda Ireland Ltd. facility.

Any additional comments? (less than 200 words)

<b>Resource Usage/Energy efficiency summary</b>	Lic No:	P0693-02	Year	2018
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## Additional information

- 1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below
- Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI [SEAI - Large Industry Energy Network \(LIEN\)](#) programme linked to the right? If yes please list them in additional information
- 2 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information
- 3

Enter date of audit	10th Oct 2018
Yes	ISO50001
N/A	

Table R1 Energy usage on site				
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*
Total Energy Used (MWHrs)	25,470	27,406	N/A	N/A
Total Energy Generated (MWHrs)	0	0	N/A	N/A
Total Renewable Energy Generated (MWHrs)	0	0	N/A	N/A
Electricity Consumption (MWHrs)	8,872	10,281	N/A	N/A
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)	0	0	N/A	N/A
Light Fuel Oil (m3)	0	0	N/A	N/A
Natural gas (m3)	15,717,539	17,125,000	N/A	N/A
Coal/Solid fuel (metric tonnes)	0	0	N/A	N/A
Peat (metric tonnes)	0	0	N/A	N/A
Renewable Biomass	0	0	N/A	N/A
Renewable energy generated on site	0	0	N/A	N/A

\* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

\*\* where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site					Water Emissions	Water Consumption	
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m <sup>3</sup> yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr	Unaccounted for Water:
Groundwater	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Surface water	0	0	n/a	n/a	n/a	n/a	n/a
Public supply	23281.42	28487.34	n/a	n/a	9045.91	n/a	Volume discharged back to the environment equates to the volume discharged to sewer
Recycled water	0	0	n/a	n/a	n/a	n/a	n/a
Total	23281	28487	n/a	n/a	9046	n/a	n/a

\* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

\*\* where site production information is available please enter percentage increase or decrease compared to previous year

Table R3 Waste Stream Summary				
	Total	Landfill	Incineration	Recycled
Hazardous (Tonnes)	3471			3471
Non-Hazardous (Tonnes)	42			42

Resource Usage/Energy efficiency summary				Lic No:	P0693-02	Year	2018
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Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
			SELECT					

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology	N/A	N/A	N/A	N/A	N/A
Primary Fuel	N/A	N/A	N/A	N/A	N/A
Thermal Efficiency	N/A	N/A	N/A	N/A	N/A
Unit Date of Commission	N/A	N/A	N/A	N/A	N/A
Total Starts for year	N/A	N/A	N/A	N/A	N/A
Total Running Time	N/A	N/A	N/A	N/A	N/A
Total Electricity Generated (GWH)	N/A	N/A	N/A	N/A	N/A
House Load (GWH)	N/A	N/A	N/A	N/A	N/A
KWH per Litre of Process Water	N/A	N/A	N/A	N/A	N/A
KWH per Litre of Total Water used on Site	N/A	N/A	N/A	N/A	N/A

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<b>Complaints and Incidents summary template</b>	Lic No:	P0693-02	Year	2018
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Complaints		Additional information
Have you received any environmental complaints in the current reporting year? If yes please complete summary details of complaints received on site in table 1 below		<div>Yes</div>

Table 1 Complaints summary							
Date	Category	Other type (please specify)	Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
16/04/2018	Odour		Complainant reported odour which she described as similar to hospital environment such as disinfectant or substances used in medical practice	Carried out an investigation, which concludes there were no works on site at the time the odour was observed.	Ongoing		
Total complaints open at start of reporting year		0					
Total new complaints received during reporting year		1					
Total complaints closed during reporting year		0					
Balance of complaints end of reporting year		1					

Incidents		Additional information
Have any incidents occurred on site in the current reporting year? Please list all incidents for current reporting year in Table 2 below		<div>Yes</div>
*For information on how to report and what constitutes an incident		<a href="#">What is an incident</a>

Table 2 Incidents summary														
Date of occurrence	Incident nature	Location of occurrence	Incident category*please refer to guidance	Receptor	Cause of incident	Other cause(please specify)	Activity in progress at time of incident	Communication	Occurrence	Corrective action<20 words	Preventative action <20 words	Resolution status	Resolution date	Likelihood of reoccurrence
10/02/2018	Monitoring equipment offline	Licensed discharge point (EP-P1-02)	1. Minor	Air	Plant or equipment issues	Monitoring equipment malfunction/ maintenance	Normal activities	EPA	New	Hydrogen bottle was replaced and analyser was put back online	Complete upgrade of THC analyser System. Complete an Root Cause analysis of the incident.	Ongoing		Low
07/04/2018	Uncontrolled release	Licensed discharge point (EP-P1-03)	1. Minor	Air	Plant or equipment issues	Pressure release. Rupture of bursting disc	Normal activities	EPA	New	Bursting Disc was replaced as soon as it was safe to do so	New dedicated leak testing line suitable for carbon beds will be installed.	Ongoing		Low
05/09/2018	Trigger level reached	Other location (MP-NS-01, MP-NS-02, MP-NS-04)	1. Minor	Air	Other (add details)	Elevated noise levels were not attributable to on-site operational activities but as a direct result of off-site influences including traffic movements, overhead, aircraft, etc.	Normal activities	EPA	New	A review of the monitoring report findings was completed.	Carry out noise monitoring in January 2019 to ascertain if off-site noise continues to attribute to a breach of values	Ongoing		Low
Total number of incidents current year		3												
Total number of incidents previous year		4												
% reduction/increase		-25												

<b>WASTE SUMMARY</b>	Lic No:	P0693-02	Year	2018
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**SECTION A- WASTE ACCEPTED ONTO SITE-TO BE COMPLETED BY ALL IPPC AND WASTE FACILITIES**

Additional Information

Were any wastes accepted onto your site for recovery or disposal or treatment prior to recovery or disposal within the boundaries of your facility?; (waste generated within your boundaries is to be captured through PRTR reporting)

If yes please enter details in table 1 below

2 Did your site have any rejected consignments of waste in the current reporting year? If yes please give a brief explanation in the additional information

3 Was waste accepted onto your site that was generated outside the Republic of Ireland? If yes please state the quantity in tonnes in additional information

**Table 1 Details of waste accepted onto your site for recovery, disposal or treatment (do not include wastes generated at your site, as these will have been reported in your PRTR workbook)**

Licensed annual tonnage limit for your site (total tonnes/annum)	EWG code	Source of waste accepted	Description of waste accepted Please enter an accurate and detailed description - which applies to relevant EWG code	Quantity of waste accepted in current reporting year (tonnes)	Quantity of waste accepted in previous reporting year (tonnes)	Reduction/ Increase over previous year +/- %	Reason for reduction/ increase from previous reporting year	Packaging Content (%) - only applies if the waste has a packaging component	Disposal/Recovery or treatment operation carried out at your site and the description of this operation	Quantity of waste remaining on site at the end of reporting year (tonnes)	Comments -
	<a href="#">European Waste Catalogue EWG codes</a>		<a href="#">European Waste Catalogue EWG codes</a>								
N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A

**SECTION B-TO BE COMPLETED BY ALL WASTE FACILITIES (waste transfer stations, Composters, Material recovery facilities etc) EXCEPT LANDFILL SITES**

4 Is all waste processing infrastructure as required by your licence and approved by the Agency in place? If no please list waste processing infrastructure required onsite

5 Is all waste storage infrastructure as required by your licence and approved by the Agency in place? If no please list waste storage infrastructure required on site

6 Does your facility have relevant nuisance controls in place?

7 Do you have an odour management system in place for your facility? If no why?

8 Do you maintain a sludge register on site?

**SECTION C-TO BE COMPLETED BY LANDFILL SITES ONLY**
**Table 2 Waste type and tonnage-landfill only**

Waste types permitted for disposal	Authorised/licenced annual intake for disposal (tpa)	Actual intake for disposal in reporting year (tpa)	Remaining licensed capacity at end of reporting year (m3)	Comments
N/A	N/A	N/A	N/A	N/A

**Table 3 General information-Landfill only**

Area ID	Date landfilling commenced	Date landfilling ceased	Currently landfilling	Private or Public Operated	Inert or non-hazardous	Predicted date to cease landfilling	Licence permits asbestos	Is there a separate cell for asbestos?	Accepted asbestos in reporting year	Total disposal area occupied by waste	Lined disposal area occupied by waste	Unlined area	Comments on liner type
										SELECT UNIT	SELECT UNIT	SELECT UNIT	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<b>WASTE SUMMARY</b>			Lic No:	P0693-02	Year	2018
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**Table 4 Environmental monitoring-landfill only**[Landfill Manual-Monitoring Standards](#)

Was meteorological monitoring in compliance with Landfill Directive (LD) standard in reporting year +	Was leachate monitored in compliance with LD standard in reporting year	Was Landfill Gas monitored in compliance with LD standard in reporting year	Was SW monitored in compliance with LD standard in reporting year	Have GW trigger levels been established	Were emission limit values agreed with the Agency (ELVs)	Was topography of the site surveyed in reporting year	Has the statement under S53(A)(5) of WMA been submitted in reporting year	Comments
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

+ please refer to Landfill Manual linked above for relevant Landfill Directive monitoring standards

**Table 5 Capping-Landfill only**

Area uncapped*	Area with temporary cap	Area with final cap to LD Standard m2 ha, a	Area capped other	Area with waste that should be permanently capped to date under licence	What materials are used in the cap	Comments
SELECT UNIT	SELECT UNIT					
N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*please note this includes daily cover area

**Table 6 Leachate-Landfill only**

9 Is leachate from your site treated in a Waste Water Treatment Plant?

N/A

10 Is leachate released to surface water? If yes please complete leachate mass load information below

N/A

Volume of leachate in reporting year(m3)	Leachate (BOD) mass load (kg/annum)	Leachate (COD) mass load (kg/annum)	Leachate (NH4) mass load (kg/annum)	Leachate (Chloride) mass load kg/annum	Leachate treatment on-site	Specify type of leachate treatment	Comments
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Please ensure that all information reported in the landfill gas section is consistent with the Landfill Gas Survey submitted in conjunction with PRTR returns

**Table 7 Landfill Gas-Landfill only**

Gas Captured&Treated by LFG System m3	Power generated (MW / KWh)	Used on-site or to national grid	Was surface emissions monitoring performed during the reporting year?	Comments
N/A	N/A	N/A	N/A	N/A

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