

Facility Information Summary

AER Reporting Year	2016
Licence Register Number	W0081-04
Name of site	Kilcullen Landfill Ltd
Site Location	Brownstown, Kilcullen, Co Kildare.
NACE Code	1.5, 11, 13 & 3, 4, 9
Class/Classes of Activity	284865E, 211310N

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.**

KLL operates the Kilcullen Landfill under Waste Licence Register Number W0081-04. KTK Landfill was granted a Waste Licence (W0081-01) by the Environmental Protection Agency (EPA) in April 1999. In July 2001, KTK Landfill submitted an application for a Review of Waste Licence W0081-01. An amended Licence, No. W0081-02 was granted by the Agency on 8 April 2002. In November 2004 an application for revision of Waste Licence W0081-02 was submitted. An amended Licence, No. W0081-03 was granted on 16 February 2006. This licence was replaced on the 25th of July 2011 by waste Licence W0081-04. In March 2014 the Waste Licence was transferred from KTK Landfill Ltd to Kilcullen Landfill Ltd.

Acceptance of waste material ceased in December 2011 and the site entered its closure, restoration and aftercare phase. During 2012, the final capping works were brought to practical completion. In 2015 final capping and topsoil/reseeding works were completed at the landfill. The facility is now managed in an aftercare capacity. The facility is a full containment landfill, which is designed to accept treated waste for final disposal. The landfill is now closed and fully capped. No waste for disposal was accepted on site in 2016.

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.

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

26th May 2017
 Date

- SELECT** cells that are highlighted blue contain a dropdown menu click to select one option from the list
- [guidance document link](#) cells that contain underlined text click to access relevant guidance documents for this section
- Table heading *** table headings followed by a symbol have an associated footnote or instructions
- Cells with red indicator in top right corner cells that have a red indicator in the top right corner contain a comment box with further instructions or clarification

Please note an interpretation of results is still required. This should be entered in the additional information/comments boxes within the templates. Please size these boxes appropriately to fit your interpretation, if additional space is required please include an appendix to the AER template and merge it as part of the AER PDF document. The excel template should have all cells sized appropriately so that all text is readable before it is converted to PDF document.

Facility Information Summary	
AER Reporting Year	2016
Licence Register Number	W0081-04
Name of site	Kilcullen Landfill Ltd
Site Location	Brownstown, Kilcullen, Co Kildare.
NACE Code	
Class/Classes of Activity	1,5,11,13 & 3,4,9
National Grid Reference (6E, 6 N)	284865E, 211310N
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Signature	Date	20/04/2017
Group/Facility manager		
(or nominated, suitably qualified and experienced deputy)		

AIR-summary template	Lic No: W0081-04	Year	2016
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Answer all questions and complete all tables where relevant

Additional information

- 1 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

Landfill gas monitoring was conducted at 14 monitoring well locations on a monthly basis during the reporting period and the results submitted to the Agency. Category 3 non-urgent incident reports were forwarded to the Agency not later than 24 hours after a landfill gas emission level value was breached. Potential Landfill Gas is monitored at the facility offices and buildings by an onsite continuous monitoring system. No measured landfill gas level in any of the facility buildings exceeded the above limits during 2016

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

Yes

- 3 Was all monitoring carried out in accordance with EPA guidance note [Basic air monitoring checklist](#) AG2 and using the basic air monitoring checklist?

Yes

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
Flare 1	Nitrogen Oxides (Nox/NO2)	annual	150	SELECT	81.68	mg/m3	yes	Chemiluminescence	18.57	
Flare 1	Sulphur oxides (Sox/SO2)	annual	-	SELECT	981.25	mg/m3	yes	NDIR Adsorption	223.07	
GE01	Nitrogen oxides (NOx)	annual	500	SELECT	440	mg/m3	yes	Chemiluminescence	2173.63	
GE01	Carbon Monoxide (CO)	annual	1,400	SELECT	1284	mg/m3	yes	NCIR By Horiba PG-250	6343.05	
GE01	TA Luft organic substances class 1	annual	75	SELECT	<0.11	mg/m3	yes	Thermal Desorption	0.00	
GE01	Sulphur dioxide (SO ₂)	annual	-	SELECT	1113	mg/m3	yes	NDIR Absorption	5498.30	

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

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Continuous Monitoring			

<p>4 Does your site carry out continuous air emissions monitoring? 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)</p>	Yes	
<p>5 Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below</p>	No	
<p>6 Do you have a proactive service agreement for each piece of continuous monitoring equipment?</p>	Yes	
<p>7 Did your site experience any abatement system bypasses? If yes please detail them in table A3 below</p>	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
Flare 1	Carbon monoxide (CO)	500	Annual	All 30-minutes averages < 2 x ELV	mg/m3					
	SELECT				SELECT					
	SELECT				SELECT					
	SELECT				SELECT					
	SELECT				SELECT					

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

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

Lic No:

W0081-04

Year

2016

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

Kilcullen Landfill operates two reverse osmosis treatment plants (RO-1 and RO-2) on-site which treat landfill leachate before discharging it to the Irish Water sewer. The treated leachate is referred to as permeate and the discharge limit is 150m³/day. Concentrate from the units is re-circulated within the waste mass, as per the agreement with the Agency. The Plant RO-2 was non-operational for the second round of monitoring completed in December 2016. 6,871 m³ discharged to the sewer in 2016.

Yes

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

The surface water monitoring was conducted bi-annually at the four monitoring locations specified in the Licence and reported to the Agency on a bi-annual basis. The sampling was carried out in accordance with internationally accepted techniques and control procedures, the analyses were completed by a laboratory using standard and internationally accepted procedures. The 2016 results are generally consistent with previous years of monitoring.

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
SW4	onsite	SELECT	Boron	2016 Round 1	2,000	N/A	39	ug/l	yes	
SW4	onsite	SELECT	Cadmium	2016 Round 1	5	N/A	<0.5	ug/l	yes	
SW4	onsite	SELECT	Calcium	2016 Round 1	-	N/A	113.6	mg/l	yes	
SW4	onsite	SELECT	Copper	2016 Round 1	30	N/A	<7	ug/l	yes	
SW4	onsite	SELECT	Iron	2016 Round 1	1,000	N/A	<20	ug/l	yes	
SW4	onsite	SELECT	Lead	2016 Round 1	10	N/A	<5	ug/l	yes	
SW4	onsite	SELECT	Magnesium	2016 Round 1	-	N/A	8.8	mg/l	yes	
SW4	onsite	SELECT	Manganese	2016 Round 1	300	N/A	<2	ug/l	yes	
SW4	onsite	SELECT	Mercury	2016 Round 1	1	N/A	<1	ug/l	yes	
SW4	onsite	SELECT	Nickel	2016 Round 1	50	N/A	2	ug/l	yes	
SW4	onsite	SELECT	Potassium	2016 Round 1	-	N/A	1.5	mg/l	yes	
SW4	onsite	SELECT	Sodium	2016 Round 1	-	N/A	17.7	mg/l	yes	
SW4	onsite	SELECT	Zinc	2016 Round 1	100	N/A	<3	ug/l	yes	
SW4	onsite	SELECT	Dissolved Phosphorus	2016 Round 1	-	N/A	<5	ug/l	yes	
SW4	onsite	SELECT	Total Chromium	2016 Round 1	30	N/A	<1.5	ug/l	yes	
SW4	onsite	SELECT	Chloride	2016 Round 1	250	N/A	21.4	mg/l	yes	
SW4	onsite	SELECT	Nitrate (NO3)	2016 Round 1	50	N/A	3.9	mg/l	yes	
SW4	onsite	SELECT	Nitrite (NO2)	2016 Round 1	0	N/A	<0.02	mg/l	yes	
SW4	onsite	SELECT	Ortho Phosphate	2016 Round 1	-	N/A	<0.06	mg/l	yes	
SW4	onsite	SELECT	Ammoniacal Nitrogen	2016 Round 1	0.065	N/A	0.04	mg/l	yes	
SW4	onsite	SELECT	Total Alkalinity	2016 Round 1	-	N/A	288	mg/l	yes	
SW4	onsite	SELECT	BOD	2016 Round 1	1.5	N/A	2	mg/l	no (if no please enter details in comments box)	Exceeds EQS
SW4	onsite	SELECT	COD	2016 Round 1	-	N/A	23	mg/l	yes	
SW4	onsite	SELECT	Electrical Conductivity	2016 Round 1	1,000	N/A	604	µS/cm	yes	
SW4	onsite	SELECT	pH	2016 Round 1	< 6.0 & >9.0	N/A	7.75	pH units	yes	
SW4	onsite	SELECT	TOC	2016 Round 1	-	N/A	<2	mg/l	yes	
SW4	onsite	SELECT	Total Suspended Solids	2016 Round 1	-	N/A	12	mg/l	yes	
SW4	onsite	SELECT	Sulphate	2016 Round 1	-	N/A	-	mg/l	yes	
SW4	onsite	SELECT	Dissolved Oxygen	2016 Round 1	-	N/A	-	mg/l	yes	
SW4	onsite	SELECT	SVOCs except...	2016 Round 1	-	N/A	-	µg/l	yes	
SW4	onsite	SELECT	4-Methylphenol	2016 Round 1	-	N/A	-	µg/l	yes	
SW4	onsite	SELECT	Phenol	2016 Round 1	8	N/A	-	µg/l	yes	
SW4	onsite	SELECT	VOC's	2016 Round 1	-	N/A	-	µg/l	yes	
SW4	onsite	SELECT	Total Coliforms	2016 Round 1	-	N/A	-	cfu/100ml	yes	
SW4	onsite	SELECT	E-Coli	2016 Round 1	-	N/A	-	cfu/100ml	yes	
SW4	onsite	SELECT	Boron	2016 Round 2	2,000	N/A	25	ug/l	yes	
SW4	onsite	SELECT	Cadmium	2016 Round 2	5	N/A	<0.5	ug/l	yes	
SW4	onsite	SELECT	Calcium	2016 Round 2	-	N/A	130.5	mg/l	yes	
SW4	onsite	SELECT	Copper	2016 Round 2	30	N/A	<7	ug/l	yes	
SW4	onsite	SELECT	Iron	2016 Round 2	1,000	N/A	87	ug/l	yes	
SW4	onsite	SELECT	Lead	2016 Round 2	10	N/A	<5	ug/l	yes	
SW4	onsite	SELECT	Magnesium	2016 Round 2	-	N/A	10.4	mg/l	yes	
SW4	onsite	SELECT	Manganese	2016 Round 2	300	N/A	1352	ug/l	no (if no please enter details in comments box)	Exceeds EQS
SW4	onsite	SELECT	Mercury	2016 Round 2	1	N/A	<1	ug/l	yes	
SW4	onsite	SELECT	Nickel	2016 Round 2	50	N/A	<2	ug/l	yes	
SW4	onsite	SELECT	Potassium	2016 Round 2	-	N/A	3.4	mg/l	yes	
SW4	onsite	SELECT	Sodium	2016 Round 2	-	N/A	16.2	mg/l	yes	
SW4	onsite	SELECT	Zinc	2016 Round 2	100	N/A	<3	ug/l	yes	
SW4	onsite	SELECT	Dissolved Phosphorus	2016 Round 2	-	N/A	167	ug/l	yes	
SW4	onsite	SELECT	Total Chromium	2016 Round 2	30	N/A	<1.5	ug/l	yes	
SW4	onsite	SELECT	Chloride	2016 Round 2	250	N/A	23.8	mg/l	yes	
SW4	onsite	SELECT	Nitrate (NO3)	2016 Round 2	50	N/A	<0.2	mg/l	yes	
SW4	onsite	SELECT	Nitrite (NO2)	2016 Round 2	0	N/A	<0.02	mg/l	yes	
SW4	onsite	SELECT	Ortho Phosphate	2016 Round 2	-	N/A	<0.06	mg/l	yes	
SW4	onsite	SELECT	Ammoniacal Nitrogen	2016 Round 2	0.065	N/A	0.1	mg/l	no (if no please enter details in comments box)	Exceeds EQS
SW4	onsite	SELECT	Total Alkalinity	2016 Round 2	-	N/A	360	mg/l	yes	
SW4	onsite	SELECT	BOD	2016 Round 2	1.5	N/A	5	mg/l	no (if no please enter details in comments box)	Exceeds EQS
SW4	onsite	SELECT	COD	2016 Round 2	-	N/A	38	mg/l	yes	
SW4	onsite	SELECT	Electrical Conductivity	2016 Round 2	1,000	N/A	861	µS/cm	yes	
SW4	onsite	SELECT	pH	2016 Round 2	< 6.0 & >9.0	N/A	7.26	pH units	yes	
SW4	onsite	SELECT	TOC	2016 Round 2	-	N/A	<2	mg/l	yes	
SW4	onsite	SELECT	Total Suspended Solids	2016 Round 2	-	N/A	<10	mg/l	yes	
SW4	onsite	SELECT	Sulphate	2016 Round 2	-	N/A	11.5	mg/l	yes	

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Sample ID	Location	Parameter	Unit	Value	Limit	Pass/Fail	Comments	Exceeds EQS	
SW4	onsite	SELECT	Dissolved Oxygen	2016 Round 2	-	N/A	3	mg/l	yes
SW4	onsite	SELECT	SVOCs except....	2016 Round 2	-	N/A	N.D	ug/l	yes
SW4	onsite	SELECT	4-Methylphenol	2016 Round 2	-	N/A	<1	ug/l	yes
SW4	onsite	SELECT	Phenol	2016 Round 2	8	N/A	<1	ug/l	yes
SW4	onsite	SELECT	VOC's	2016 Round 2	-	N/A	N.D	ug/l	yes
SW4	onsite	SELECT	Total Coliforms	2016 Round 2	-	N/A	71	cfu/100ml	yes
SW4	onsite	SELECT	E-Coli	2016 Round 2	-	N/A	71	cfu/100ml	yes
SW5	onsite	SELECT	Boron	2016 Round 1	2,000	N/A	<12	ug/l	yes
SW5	onsite	SELECT	Cadmium	2016 Round 1	5	N/A	<0.5	ug/l	yes
SW5	onsite	SELECT	Calcium	2016 Round 1	-	N/A	119.3	mg/l	yes
SW5	onsite	SELECT	Copper	2016 Round 1	30	N/A	<7	ug/l	yes
SW5	onsite	SELECT	Iron	2016 Round 1	1,000	N/A	27	ug/l	yes
SW5	onsite	SELECT	Lead	2016 Round 1	10	N/A	<5	ug/l	yes
SW5	onsite	SELECT	Magnesium	2016 Round 1	-	N/A	8.8	mg/l	yes
SW5	onsite	SELECT	Manganese	2016 Round 1	300	N/A	<2	ug/l	yes
SW5	onsite	SELECT	Mercury	2016 Round 1	1	N/A	<1	ug/l	yes
SW5	onsite	SELECT	Nickel	2016 Round 1	50	N/A	<2	ug/l	yes
SW5	onsite	SELECT	Potassium	2016 Round 1	-	N/A	<0.1	mg/l	yes
SW5	onsite	SELECT	Sodium	2016 Round 1	-	N/A	9.6	mg/l	yes
SW5	onsite	SELECT	Zinc	2016 Round 1	100	N/A	<3	ug/l	yes
SW5	onsite	SELECT	Dissolved Phosphorus	2016 Round 1	-	N/A	9	ug/l	yes
SW5	onsite	SELECT	Total Chromium	2016 Round 1	30	N/A	<1.5	ug/l	yes
SW5	onsite	SELECT	Chloride	2016 Round 1	250	N/A	18.3	mg/l	yes
SW5	onsite	SELECT	Nitrate (NO3)	2016 Round 1	50	N/A	6.9	mg/l	yes
SW5	onsite	SELECT	Nitrite (NO2)	2016 Round 1	0	N/A	<0.02	mg/l	yes
SW5	onsite	SELECT	Ortho Phosphate	2016 Round 1	-	N/A	<0.06	mg/l	yes
SW5	onsite	SELECT	Ammoniacal Nitrogen	2016 Round 1	0.065	N/A	0.05	mg/l	yes
SW5	onsite	SELECT	Total Alkalinity	2016 Round 1	-	N/A	284	mg/l	yes
SW5	onsite	SELECT	BOD	2016 Round 1	1.5	N/A	1	mg/l	yes
SW5	onsite	SELECT	COD	2016 Round 1	-	N/A	18	mg/l	yes
SW5	onsite	SELECT	Electrical Conductivity	2016 Round 1	1,000	N/A	612	µS/cm	yes
SW5	onsite	SELECT	pH	2016 Round 1	< 6.0 >9.0	N/A	7.6	pH units	yes
SW5	onsite	SELECT	TOC	2016 Round 1	-	N/A	4	mg/l	yes
SW5	onsite	SELECT	Total Suspended Solids	2016 Round 1	-	N/A	112	mg/l	yes
SW5	onsite	SELECT	Sulphate	2016 Round 1	-	N/A	-	mg/l	yes
SW5	onsite	SELECT	Dissolved Oxygen	2016 Round 1	-	N/A	-	mg/l	yes
SW5	onsite	SELECT	SVOCs except....	2016 Round 1	-	N/A	-	ug/l	yes
SW5	onsite	SELECT	4-Methylphenol	2016 Round 1	-	N/A	-	ug/l	yes
SW5	onsite	SELECT	Phenol	2016 Round 1	8	N/A	-	ug/l	yes
SW5	onsite	SELECT	VOC's	2016 Round 1	-	N/A	-	ug/l	yes
SW5	onsite	SELECT	Total Coliforms	2016 Round 1	-	N/A	-	cfu/100ml	yes
SW5	onsite	SELECT	E-Coli	2016 Round 1	-	N/A	-	cfu/100ml	yes
SW5	onsite	SELECT	Boron	2016 Round 2	2,000	N/A	<12	ug/l	yes
SW5	onsite	SELECT	Cadmium	2016 Round 2	5	N/A	<0.5	ug/l	yes
SW5	onsite	SELECT	Calcium	2016 Round 2	-	N/A	142	mg/l	yes
SW5	onsite	SELECT	Copper	2016 Round 2	30	N/A	<7	ug/l	yes
SW5	onsite	SELECT	Iron	2016 Round 2	1,000	N/A	682	ug/l	yes
SW5	onsite	SELECT	Lead	2016 Round 2	10	N/A	<5	ug/l	yes
SW5	onsite	SELECT	Magnesium	2016 Round 2	-	N/A	10.3	mg/l	yes
SW5	onsite	SELECT	Manganese	2016 Round 2	300	N/A	16560	ug/l	no (if no please enter details in comments box) Exceeds EQS
SW5	onsite	SELECT	Mercury	2016 Round 2	1	N/A	<1	ug/l	yes
SW5	onsite	SELECT	Nickel	2016 Round 2	50	N/A	<2	ug/l	yes
SW5	onsite	SELECT	Potassium	2016 Round 2	-	N/A	12.5	mg/l	yes
SW5	onsite	SELECT	Sodium	2016 Round 2	-	N/A	11.4	mg/l	yes
SW5	onsite	SELECT	Zinc	2016 Round 2	100	N/A	<3	ug/l	yes
SW5	onsite	SELECT	Dissolved Phosphorus	2016 Round 2	-	N/A	2421	ug/l	yes
SW5	onsite	SELECT	Total Chromium	2016 Round 2	30	N/A	<1.5	ug/l	yes
SW5	onsite	SELECT	Chloride	2016 Round 2	250	N/A	27.5	mg/l	yes
SW5	onsite	SELECT	Nitrate (NO3)	2016 Round 2	50	N/A	<0.2	mg/l	yes
SW5	onsite	SELECT	Nitrite (NO2)	2016 Round 2	0	N/A	<0.02	mg/l	yes
SW5	onsite	SELECT	Ortho Phosphate	2016 Round 2	-	N/A	<0.06	mg/l	yes
SW5	onsite	SELECT	Ammoniacal Nitrogen	2016 Round 2	0.065	N/A	0.61	mg/l	no (if no please enter details in comments box) Exceeds EQS
SW5	onsite	SELECT	Total Alkalinity	2016 Round 2	-	N/A	380	mg/l	yes
SW5	onsite	SELECT	BOD	2016 Round 2	1.5	N/A	22	mg/l	yes
SW5	onsite	SELECT	COD	2016 Round 2	-	N/A	102	mg/l	yes
SW5	onsite	SELECT	Electrical Conductivity	2016 Round 2	1,000	N/A	846	µS/cm	yes
SW5	onsite	SELECT	pH	2016 Round 2	< 6.0 >9.0	N/A	7.08	pH units	yes
SW5	onsite	SELECT	TOC	2016 Round 2	-	N/A	4	mg/l	yes
SW5	onsite	SELECT	Total Suspended Solids	2016 Round 2	-	N/A	139	mg/l	yes
SW5	onsite	SELECT	Sulphate	2016 Round 2	-	N/A	44.2	mg/l	yes
SW5	onsite	SELECT	Dissolved Oxygen	2016 Round 2	-	N/A	2	mg/l	yes
SW5	onsite	SELECT	SVOCs except....	2016 Round 2	-	N/A	N.D	ug/l	yes
SW5	onsite	SELECT	4-Methylphenol	2016 Round 2	-	N/A	25	ug/l	yes
SW5	onsite	SELECT	Phenol	2016 Round 2	8	N/A	5	ug/l	yes
SW5	onsite	SELECT	VOC's	2016 Round 2	-	N/A	N.D	ug/l	yes
SW5	onsite	SELECT	Total Coliforms	2016 Round 2	-	N/A	0	cfu/100ml	yes
SW5	onsite	SELECT	E-Coli	2016 Round 2	-	N/A	0	cfu/100ml	yes
SW6	onsite	SELECT	Boron	2016 Round 1	2,000	N/A	15	ug/l	yes
SW6	onsite	SELECT	Cadmium	2016 Round 1	5	N/A	<0.5	ug/l	yes
SW6	onsite	SELECT	Calcium	2016 Round 1	-	N/A	128.6	mg/l	yes
SW6	onsite	SELECT	Copper	2016 Round 1	30	N/A	<7	ug/l	yes
SW6	onsite	SELECT	Iron	2016 Round 1	1,000	N/A	<20	ug/l	yes
SW6	onsite	SELECT	Lead	2016 Round 1	10	N/A	<5	ug/l	yes
SW6	onsite	SELECT	Magnesium	2016 Round 1	-	N/A	7.9	mg/l	yes
SW6	onsite	SELECT	Manganese	2016 Round 1	300	N/A	<2	ug/l	yes
SW6	onsite	SELECT	Mercury	2016 Round 1	1	N/A	<1	ug/l	yes
SW6	onsite	SELECT	Nickel	2016 Round 1	50	N/A	<2	ug/l	yes
SW6	onsite	SELECT	Potassium	2016 Round 1	-	N/A	<0.1	mg/l	yes

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SW6	onsite	SELECT	Sodium	2016 Round 1	-	N/A	10.1	mg/l	yes				
SW6	onsite	SELECT	Zinc	2016 Round 1	100	N/A	<3	ug/l	yes				
SW6	onsite	SELECT	Dissolved Phosphorus	2016 Round 1	-	N/A	11	ug/l	yes				
SW6	onsite	SELECT	Total Chromium	2016 Round 1	30	N/A	4.9	ug/l	yes				
SW6	onsite	SELECT	Chloride	2016 Round 1	250	N/A	18.8	mg/l	yes				
SW6	onsite	SELECT	Nitrate (NO3)	2016 Round 1	50	N/A	17	mg/l	yes				
SW6	onsite	SELECT	Nitrite (NO2)	2016 Round 1	0	N/A	0.14	mg/l	no (if no please enter details in comments box)	Exceeds EQS			
SW6	onsite	SELECT	Ortho Phosphate	2016 Round 1	-	N/A	<0.06	mg/l	yes				
SW6	onsite	SELECT	Ammoniacal Nitrogen	2016 Round 1	0.065	N/A	0.12	mg/l	no (if no please enter details in comments box)	Exceeds EQS			
SW6	onsite	SELECT	Total Alkalinity	2016 Round 1	-	N/A	222	mg/l	yes				
SW6	onsite	SELECT	BOD	2016 Round 1	1.5	N/A	4	mg/l	no (if no please enter details in comments box)	Exceeds EQS			
SW6	onsite	SELECT	COD	2016 Round 1	-	N/A	27	mg/l	yes				
SW6	onsite	SELECT	Electrical Conductivity	2016 Round 1	1,000	N/A	703	µS/cm	yes				
SW6	onsite	SELECT	pH	2016 Round 1	< 6.0 & >9.0	N/A	7.21	pH units	yes				
SW6	onsite	SELECT	TOC	2016 Round 1	-	N/A	6	mg/l	yes				
SW6	onsite	SELECT	Total Suspended Solids	2016 Round 1	-	N/A	111	mg/l	yes				
SW6	onsite	SELECT	Sulphate	2016 Round 1	-	N/A	-	mg/l	yes				
SW6	onsite	SELECT	Dissolved Oxygen	2016 Round 1	-	N/A	-	mg/l	yes				
SW6	onsite	SELECT	SVOCs except....	2016 Round 1	-	N/A	-	µg/l	yes				
SW6	onsite	SELECT	4-Methylphenol	2016 Round 1	-	N/A	-	µg/l	yes				
SW6	onsite	SELECT	Phenol	2016 Round 1	8	N/A	-	ug/l	yes				
SW6	onsite	SELECT	VOC's	2016 Round 1	-	N/A	-	ug/l	yes				
SW6	onsite	SELECT	Total Coliforms	2016 Round 1	-	N/A	-	cfu/100ml	yes				
SW6	onsite	SELECT	E-Coli	2016 Round 1	-	N/A	-	cfu/100ml	yes				
SW6	onsite	SELECT	Boron	2016 Round 2	2,000	N/A	<12	ug/l	yes				
SW6	onsite	SELECT	Cadmium	2016 Round 2	5	N/A	<0.5	ug/l	yes				
SW6	onsite	SELECT	Calcium	2016 Round 2	-	N/A	81.8	mg/l	yes				
SW6	onsite	SELECT	Copper	2016 Round 2	30	N/A	<7	ug/l	yes				
SW6	onsite	SELECT	Iron	2016 Round 2	1,000	N/A	8038	ug/l	no (if no please enter details in comments box)	Exceeds EQS			
SW6	onsite	SELECT	Lead	2016 Round 2	10	N/A	<5	ug/l	yes				
SW6	onsite	SELECT	Magnesium	2016 Round 2	-	N/A	7.7	mg/l	yes				
SW6	onsite	SELECT	Manganese	2016 Round 2	300	N/A	821	ug/l	no (if no please enter details in comments box)	Exceeds EQS			
SW6	onsite	SELECT	Mercury	2016 Round 2	1	N/A	<1	ug/l	yes				
SW6	onsite	SELECT	Nickel	2016 Round 2	50	N/A	3	ug/l	yes				
SW6	onsite	SELECT	Potassium	2016 Round 2	-	N/A	4.8	mg/l	yes				
SW6	onsite	SELECT	Sodium	2016 Round 2	-	N/A	9.8	mg/l	yes				
SW6	onsite	SELECT	Zinc	2016 Round 2	100	N/A	8	ug/l	yes				
SW6	onsite	SELECT	Dissolved Phosphorus	2016 Round 2	-	N/A	543	ug/l	yes				
SW6	onsite	SELECT	Total Chromium	2016 Round 2	30	N/A	<1.5	ug/l	yes				
SW6	onsite	SELECT	Chloride	2016 Round 2	250	N/A	20.5	mg/l	yes				
SW6	onsite	SELECT	Nitrate (NO3)	2016 Round 2	50	N/A	<0.2	mg/l	yes				
SW6	onsite	SELECT	Nitrite (NO2)	2016 Round 2	0	N/A	<0.02	mg/l	yes				
SW6	onsite	SELECT	Ortho Phosphate	2016 Round 2	-	N/A	0.69	mg/l	yes				
SW6	onsite	SELECT	Ammoniacal Nitrogen	2016 Round 2	0.065	N/A	0.55	mg/l	yes				
SW6	onsite	SELECT	Total Alkalinity	2016 Round 2	-	N/A	194	mg/l	yes				
SW6	onsite	SELECT	BOD	2016 Round 2	1.5	N/A	14	mg/l	yes				
SW6	onsite	SELECT	COD	2016 Round 2	-	N/A	192	mg/l	yes				
SW6	onsite	SELECT	Electrical Conductivity	2016 Round 2	1,000	N/A	477	µS/cm	yes				
SW6	onsite	SELECT	pH	2016 Round 2	< 6.0 & >9.0	N/A	6.73	pH units	yes				
SW6	onsite	SELECT	TOC	2016 Round 2	-	N/A	6	mg/l	yes				
SW6	onsite	SELECT	Total Suspended Solids	2016 Round 2	-	N/A	26	mg/l	yes				
SW6	onsite	SELECT	Sulphate	2016 Round 2	-	N/A	23	mg/l	yes				
SW6	onsite	SELECT	Dissolved Oxygen	2016 Round 2	-	N/A	1	mg/l	yes				
SW6	onsite	SELECT	SVOCs except....	2016 Round 2	-	N/A	N.D	µg/l	yes				
SW6	onsite	SELECT	4-Methylphenol	2016 Round 2	-	N/A	<1	µg/l	yes				
SW6	onsite	SELECT	Phenol	2016 Round 2	8	N/A	<1	µg/l	yes				
SW6	onsite	SELECT	VOC's	2016 Round 2	-	N/A	N.D	µg/l	yes				
SW6	onsite	SELECT	Total Coliforms	2016 Round 2	-	N/A	0	cfu/100ml	yes				
SW6	onsite	SELECT	E-Coli	2016 Round 2	-	N/A	0	cfu/100ml	yes				
SW7	onsite	SELECT	Boron	2017 Round 1	2,000	N/A	29	ug/l	yes				
SW7	onsite	SELECT	Cadmium	2017 Round 1	5	N/A	<0.5	ug/l	yes				
SW7	onsite	SELECT	Calcium	2017 Round 1	-	N/A	139.3	mg/l	yes				
SW7	onsite	SELECT	Copper	2017 Round 1	30	N/A	<7	ug/l	yes				
SW7	onsite	SELECT	Iron	2017 Round 1	1,000	N/A	<20	ug/l	yes				
SW7	onsite	SELECT	Lead	2017 Round 1	10	N/A	<5	ug/l	yes				
SW7	onsite	SELECT	Magnesium	2017 Round 1	-	N/A	9.6	mg/l	yes				
SW7	onsite	SELECT	Manganese	2017 Round 1	300	N/A	51	ug/l	yes				
SW7	onsite	SELECT	Mercury	2017 Round 1	1	N/A	<1	ug/l	yes				
SW7	onsite	SELECT	Nickel	2017 Round 1	50	N/A	<2	ug/l	yes				
SW7	onsite	SELECT	Potassium	2017 Round 1	-	N/A	1.9	mg/l	yes				
SW7	onsite	SELECT	Sodium	2017 Round 1	-	N/A	18.6	mg/l	yes				
SW7	onsite	SELECT	Zinc	2017 Round 1	100	N/A	4	ug/l	yes				
SW7	onsite	SELECT	Dissolved Phosphorus	2017 Round 1	-	N/A	8	ug/l	yes				
SW7	onsite	SELECT	Total Chromium	2017 Round 1	30	N/A	<1.5	ug/l	yes				
SW7	onsite	SELECT	Chloride	2017 Round 1	250	N/A	23.2	mg/l	yes				
SW7	onsite	SELECT	Nitrate (NO3)	2017 Round 1	50	N/A	7.3	mg/l	yes				
SW7	onsite	SELECT	Nitrite (NO2)	2017 Round 1	0	N/A	<0.02	mg/l	yes				
SW7	onsite	SELECT	Ortho Phosphate	2017 Round 1	-	N/A	<0.06	mg/l	yes				
SW7	onsite	SELECT	Ammoniacal Nitrogen	2017 Round 1	0.065	N/A	0.09	mg/l	no (if no please enter details in comments box)	Exceeds EQS			
SW7	onsite	SELECT	Total Alkalinity	2017 Round 1	-	N/A	340	mg/l	yes				
SW7	onsite	SELECT	BOD	2017 Round 1	1.5	N/A	<1	mg/l	yes				
SW7	onsite	SELECT	COD	2017 Round 1	-	N/A	15	mg/l	yes				
SW7	onsite	SELECT	Electrical Conductivity	2017 Round 1	1,000	N/A	731	µS/cm	yes				
SW7	onsite	SELECT	pH	2017 Round 1	< 6.0 & >9.0	N/A	8.07	pH units	yes				
SW7	onsite	SELECT	TOC	2017 Round 1	-	N/A	<2	mg/l	yes				
SW7	onsite	SELECT	Total Suspended Solids	2017 Round 1	-	N/A	<10	mg/l	yes				
SW7	onsite	SELECT	Sulphate	2017 Round 1	-	N/A	-	mg/l	yes				
SW7	onsite	SELECT	Dissolved Oxygen	2017 Round 1	-	N/A	-	mg/l	yes				

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)										Lic No:	W0081-04	Year	2016
SW7	onsite	SELECT	SVOCs except....	2017 Round 1	-	N/A	-	µg/l	yes				
SW7	onsite	SELECT	4-Methylphenol	2017 Round 1	-	N/A	-	µg/l	yes				
SW7	onsite	SELECT	Phenol	2017 Round 1	8	N/A	-	µg/l	yes				
SW7	onsite	SELECT	VOC's	2017 Round 1	-	N/A	-	µg/l	yes				
SW7	onsite	SELECT	Total Coliforms	2017 Round 1	-	N/A	-	cfu/100ml	yes				
SW7	onsite	SELECT	E-Coli	2017 Round 1	-	N/A	-	cfu/100ml	yes				
SW7	onsite	SELECT	Boron	2017 Round 2	2,000	N/A	<12	ug/l	yes				
SW7	onsite	SELECT	Cadmium	2017 Round 2	5	N/A	<0.5	ug/l	yes				
SW7	onsite	SELECT	Calcium	2017 Round 2	-	N/A	81.8	mg/l	yes				
SW7	onsite	SELECT	Copper	2017 Round 2	30	N/A	<7	ug/l	yes				
SW7	onsite	SELECT	Iron	2017 Round 2	1,000	N/A	28	ug/l	yes				
SW7	onsite	SELECT	Lead	2017 Round 2	10	N/A	<5	ug/l	yes				
SW7	onsite	SELECT	Magnesium	2017 Round 2	-	N/A	6.3	mg/l	yes				
SW7	onsite	SELECT	Manganese	2017 Round 2	300	N/A	40	ug/l	yes				
SW7	onsite	SELECT	Mercury	2017 Round 2	1	N/A	<1	ug/l	yes				
SW7	onsite	SELECT	Nickel	2017 Round 2	50	N/A	<2	ug/l	yes				
SW7	onsite	SELECT	Potassium	2017 Round 2	-	N/A	2.2	mg/l	yes				
SW7	onsite	SELECT	Sodium	2017 Round 2	-	N/A	12	mg/l	yes				
SW7	onsite	SELECT	Zinc	2017 Round 2	100	N/A	11	ug/l	yes				
SW7	onsite	SELECT	Dissolved Phosphorus	2017 Round 2	-	N/A	53	ug/l	yes				
SW7	onsite	SELECT	Total Chromium	2017 Round 2	30	N/A	<1.5	ug/l	yes				
SW7	onsite	SELECT	Chloride	2017 Round 2	250	N/A	15	mg/l	yes				
SW7	onsite	SELECT	Nitrate (NO3)	2017 Round 2	50	N/A	2.2	mg/l	yes				
SW7	onsite	SELECT	Nitrite (NO2)	2017 Round 2	0	N/A	<0.02	mg/l	yes				
SW7	onsite	SELECT	Ortho Phosphate	2017 Round 2	-	N/A	<0.06	mg/l	yes				
SW7	onsite	SELECT	Ammoniacal Nitrogen	2017 Round 2	0.065	N/A	0.21	mg/l	no (if no please enter details in comments box)	Exceeds EQS			
SW7	onsite	SELECT	Total Alkalinity	2017 Round 2	-	N/A	204	mg/l	yes				
SW7	onsite	SELECT	BOD	2017 Round 2	1.5	N/A	1	mg/l	yes				
SW7	onsite	SELECT	COD	2017 Round 2	-	N/A	9	mg/l	yes				
SW7	onsite	SELECT	Electrical Conductivity	2017 Round 2	1,000	N/A	473	µS/cm	yes				
SW7	onsite	SELECT	pH	2017 Round 2	< 6.0 & >9.0	N/A	7.55	pH units	yes				
SW7	onsite	SELECT	TOC	2017 Round 2	-	N/A	<2	mg/l	yes				
SW7	onsite	SELECT	Total Suspended Solids	2017 Round 2	-	N/A	12	mg/l	yes				
SW7	onsite	SELECT	Sulphate	2017 Round 2	-	N/A	30	mg/l	yes				
SW7	onsite	SELECT	Dissolved Oxygen	2017 Round 2	-	N/A	7	mg/l	yes				
SW7	onsite	SELECT	SVOCs except....	2017 Round 2	-	N/A	N.D	µg/l	yes				
SW7	onsite	SELECT	4-Methylphenol	2017 Round 2	-	N/A	<1	µg/l	yes				
SW7	onsite	SELECT	Phenol	2017 Round 2	8	N/A	<1	µg/l	yes				
SW7	onsite	SELECT	VOC's	2017 Round 2	-	N/A	N.D	µg/l	yes				
SW7	onsite	SELECT	Total Coliforms	2017 Round 2	-	N/A	0	cfu/100ml	yes				
SW7	onsite	SELECT	E-Coli	2017 Round 2	-	N/A	0	cfu/100ml	yes				

*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
			SELECT		
			SELECT		

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	SELECT	Additional information
4	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	SELECT	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/ Substance>Note 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereof ^{Note 2}	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
	SELECT	SELECT	SELECT		SELECT		SELECT		SELECT	SELECT	SELECT	SELECT			

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

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

Continuous monitoring

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

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	Annual Emission for current reporting year (kg)	% change +/- from previous reporting year	Monitoring Equipment downtime (hours)	Number of ELV exceedences in reporting year	Comments
	<input type="text" value="SELECT"/>	<input type="text" value="SELECT"/>		<input type="text" value="SELECT"/>	<input type="text" value="SELECT"/>	<input type="text" value="SELECT"/>					
	<input type="text" value="SELECT"/>	<input type="text" value="SELECT"/>		<input type="text" value="SELECT"/>	<input type="text" value="SELECT"/>	<input type="text" value="SELECT"/>					

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?
						<input type="text" value="SELECT"/>	

*Measures taken or proposed to reduce or limit bypass frequency

Bund testing

dropdown menu click to see options

Additional information

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 **new bunds and containment structures** on site, in addition to **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** (mobile bunds and chemstore included)

Yes	Killcullen Landfill Ltd have engaged Golder and associates to undertake tank, bund and pipe line testing scheduled for April 2017, the finalised report will be on file and available for inspection.
SELECT	
SELECT	
SELECT	
SELECT	
SELECT	
SELECT	
SELECT	

- 1
- 2 Please provide integrity testing frequency period
Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to "Chemstore" type units and mobile bunds)
- 3 "Chemstore" type units and mobile bunds)
- 4 How many bunds are on site?
- 5 How many of these bunds have been tested within the required test schedule?
- 6 How many mobile bunds are on site?
- 7 Are the mobile bunds included in the bund test schedule?
- 8 How many of these mobile bunds have been tested within the required test schedule?
- 9 How many sumps on site are included in the integrity test schedule?
- 10 How many of these sumps are integrity tested within the test schedule?
Please list any sump integrity failures in table B1
- 11 Do all sumps and chambers have high level liquid alarms?
- 12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?
- 13 Is the Fire Water Retention Pond included in your integrity test programme?

Table B1: Summary details of bund /containment structure integrity test

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)
	SELECT					SELECT			SELECT	SELECT		SELECT		
	SELECT					SELECT			SELECT	SELECT		SELECT		

* Capacity required should comply with 25% or 110% containment rule as detailed in your licence

Has integrity testing been carried out in accordance with licence requirements and are all structures tested

15 In line with BS8007/EPA Guidance?

[bundings and storage guidelines](#)

16 Are channels/transfer systems to remote containment systems tested?

17 Are channels/transfer systems compliant in both integrity and available volume?

SELECT	
SELECT	
SELECT	

Commentary

Pipeline/underground structure testing

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

1 all underground structures and pipelines on site **which failed the integrity test and all which have not been tested withing the integrity test period as specified**

2 Please provide integrity testing frequency period

*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

SELECT	
SELECT	

Table B2: Summary details of pipeline/underground structures integrity test

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)
	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT	SELECT				SELECT

Please use commentary for additional details not answered by tables/ questions above

Groundwater/Soil monitoring template	Lic No: W0081-04	Year 2016
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			Comments
1	Are you required to carry out groundwater monitoring as part of your licence requirements?	yes	<p>During 2016, two (2 No.) private groundwater well samples were collected and analysed. This sampling event took place in December 2016. The results of the analysis were reported in the Q-4 quarterly report. All residents received copies of the results from their respective wells. All the parameters were lower than the IGTV or GTV. Groundwater quality in the private wells was good and consistent with previous rounds.</p> <p>Groundwater quality was monitored in the on-site monitoring wells and reported to the Agency at quarterly intervals. The sampling was carried out in accordance with internationally accepted techniques and control procedures and the analyses were completed by a laboratory using standard and internationally accepted procedures</p> <p>The results from the on-site monitoring wells are consistent with previous results. The groundwater quality at the facility is influenced by an ongoing groundwater contamination plume emanating from the adjacent partially lined Silliot Hill landfill.</p> <p>The quality of the water in both private wells is generally good and shows no impacts associated with the landfill facility. Please enter interpretation of data here.</p>
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 IGTVs 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)	yes	
6	Have actions been taken to address contamination issues? If yes please summarise remediation strategies proposed/undertaken for the site	yes	
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?	yes	
9	Has any type of risk assessment been carried out for the site?	yes	
10	Has a Conceptual Site Model been developed for the site?	yes	
11	Have potential receptors been identified on and off site?	yes	
12	Is there evidence that contamination is migrating offsite?	no	

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
2016	BH-11D	Dissolved Arsenic	ICP-OES	Quarterly	<2.5	<2.5	µg/l	7.5	SELECT**	No obvious trend evident
2016	BH-11D	Dissolved Barium	ICP-OES	Quarterly	53	48.75	µg/l	-	SELECT**	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	BH-11D	Dissolved Boron	ICP-OES	Quarterly	15	15	µg/l	750	SELECT**	No obvious trend evident
2016	BH-11D	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	BH-11D	Dissolved Calcium	ICP-OES	Quarterly	136.3	131.025	mg/l	200	SELECT**	No obvious trend evident
2016	BH-11D	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	BH-11D	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	BH-11D	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	50	IGV	No obvious trend evident
2016	BH-11D	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	BH-11D	Dissolved Magnesium	ICP-OES	Quarterly	17.3	16.475	mg/l	50	IGV	No obvious trend evident
2016	BH-11D	Dissolved Manganese	ICP-OES	Quarterly	<2	<2	µg/l	0.05	IGV	No obvious trend evident
2016	BH-11D	Dissolved Mercury	ICP-OES	Quarterly	<0.01	<0.01	µg/l	1	IGV	No obvious trend evident
2016	BH-11D	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No obvious trend evident
2016	BH-11D	Dissolved Potassium	ICP-OES	Quarterly	0.9	0.85	mg/l	5	IGV	No obvious trend evident
2016	BH-11D	Dissolved Sodium	ICP-OES	Quarterly	8.3	7.675	mg/l	150	SELECT**	No obvious trend evident
2016	BH-11D	Dissolved Zinc	ICP-OES	Quarterly	<3	<3	µg/l	0.1	IGV	No obvious trend evident
2016	BH-11D	Dissolved Phosphorus	ICP-OES	Quarterly	91	50.975	µg/l	-	SELECT**	No obvious trend evident
2016	BH-11D	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	BH-11D	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No obvious trend evident
2016	BH-11D	Sulphate	SIA-TAPAA	Quarterly	11.1	10.27	mg/l	187.5	SELECT**	No obvious trend evident
2016	BH-11D	Chloride	SIA-TAPAA	Quarterly	11.3	10.75	mg/l	187.5	SELECT**	No obvious trend evident
2016	BH-11D	Nitrate as NO ₃	SIA-TAPAA	Quarterly	18.4	14.85	mg/l	37.5	SELECT**	No obvious trend evident
2016	BH-11D	Nitrite as NO ₂	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No obvious trend evident
2016	BH-11D	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	BH-11D	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.07	0.05	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	BH-11D	Total Alkalinity as CaCO ₃	Metrohm automated titration analyser	Quarterly	390	375	mg/l	NAC	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	BH-11D	DO	Hach HQ30D Oxygen Meter	Quarterly	10	9.25	mg/l	-	SELECT**	No obvious trend evident
2016	BH-11D	Electrical Conductivity	Field Probe	Quarterly	742	714.25	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	BH-11D	TOC	TOC analyser	Quarterly	3	2.5	mg/l	NAC	IGV	No obvious trend evident
2016	BH-11D	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	BH-11D	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	BH-11D	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	BH-11D	Total Coliform	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	BH-11D	E-Coli	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Arsenic	ICP-OES	Quarterly	111.7	73.8	µg/l	7.5	SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Barium	ICP-OES	Quarterly	551	512.6666667	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Boron	ICP-OES	Quarterly	903	872	µg/l	750	SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Calcium	ICP-OES	Quarterly	86.7	76.9	mg/l	200	SELECT**	No obvious trend evident
2016	KTK-16	Total Dissolved Chromium	ICP-OES	Quarterly	4.1	3.8	µg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	KTK-16	Total Dissolved Iron	ICP-OES	Quarterly	7227	4271	µg/l	50	IGV	No obvious trend evident
2016	KTK-16	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Magnesium	ICP-OES	Quarterly	26.1	24.3	mg/l	50	IGV	No obvious trend evident
2016	KTK-16	Dissolved Manganese	ICP-OES	Quarterly	136	95.66666667	µg/l	0.05	IGV	No obvious trend evident
2016	KTK-16	Dissolved Mercury	ICP-OES	Quarterly	0.01	0.01	µg/l	1	IGV	No obvious trend evident
2016	KTK-16	Dissolved Nickel	ICP-OES	Quarterly	78	77	µg/l	15	SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Potassium	ICP-OES	Quarterly	94.8	92.93333333	mg/l	5	IGV	No obvious trend evident
2016	KTK-16	Dissolved Sodium	ICP-OES	Quarterly	288.6	282.15	mg/l	150	SELECT**	No obvious trend evident
2016	KTK-16	Dissolved Zinc	ICP-OES	Quarterly	9	7.5	µg/l	0.1	IGV	No obvious trend evident
2016	KTK-16	Dissolved Phosphorus	ICP-OES	Quarterly	927.5	374.9	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-16	Total Phenols	HPLC	Quarterly	0	#DIV/0!	mg/l	500	IGV	No obvious trend evident
2016	KTK-16	Fluoride	Dionex (Ion-Chromatography).	Quarterly	0	#DIV/0!	mg/l	1	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	KTK-16	Sulphate	SIA-TAPAA	Quarterly	1.34	0.87	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-16	Chloride	SIA-TAPAA	Quarterly	260.1	255.7666667	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-16	Nitrate as NO3	SIA-TAPAA	Quarterly	21.2	10.9	mg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-16	Nitrite as NO2	SIA-TAPAA	Quarterly	0.12	0.083333333	mg/l	0.375	SELECT**	No obvious trend evident
2016	KTK-16	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-16	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	198.61	189.3733333	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	KTK-16	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	1316	1123.333333	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-16	DO	Hach HQ30D Oxygen Meter	Quarterly	7	6.333333333	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-16	Electrical Conductivity	Field Probe	Quarterly	3005	2958.333333	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	KTK-16	TOC	TOC analyser	Quarterly	42	40	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-16	VOCs (TICs)	Headspace GC-MS	Quarterly	-	-	µg/l		SELECT**	No obvious trend evident
2016	KTK-16	Semi - VOCs	GC-MS	Quarterly	-	-	µg/l		SELECT**	No obvious trend evident
2016	KTK-16	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	-	-	µg/l		SELECT**	No obvious trend evident
2016	KTK-16	Total Coliform	Membrane Filtration	Quarterly	-	-	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-16	E-Coli	Membrane Filtration	Quarterly	-	-	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Arsenic	ICP-OES	Quarterly	5.9	5.9		7.5	SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Barium	ICP-OES	Quarterly	176	170		-	SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Boron	ICP-OES	Quarterly	67	60.33333333		750	SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5		5	SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Calcium	ICP-OES	Quarterly	275.6	272.6666667		200	SELECT**	No obvious trend evident
2016	KTK-15 D	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5		37.5	SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Copper	ICP-OES	Quarterly	<7	<7		1500	SELECT**	No obvious trend evident
2016	KTK-15 D	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20		50	IGV	No obvious trend evident
2016	KTK-15 D	Dissolved Lead	ICP-OES	Quarterly	<5	<5		18.75	SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Magnesium	ICP-OES	Quarterly	31.5	30.16666667		50	IGV	No obvious trend evident
2016	KTK-15 D	Dissolved Manganese	ICP-OES	Quarterly	420	320.3333333		0.05	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04		Year	2016		
2016	KTK-15 D	Dissolved Mercury	ICP-OES	Quarterly	0.06	0.06		1	IGV	No obvious trend evident
2016	KTK-15 D	Dissolved Nickel	ICP-OES	Quarterly	8	6.333333333		15	SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Potassium	ICP-OES	Quarterly	36.9	34		5	IGV	No obvious trend evident
2016	KTK-15 D	Dissolved Sodium	ICP-OES	Quarterly	20.5	18.86666667		150	SELECT**	No obvious trend evident
2016	KTK-15 D	Dissolved Zinc	ICP-OES	Quarterly	64	49.33333333		0.1	IGV	No obvious trend evident
2016	KTK-15 D	Dissolved Phosphorus	ICP-OES	Quarterly	838	305.0666667		-	SELECT**	No obvious trend evident
2016	KTK-15 D	Total Phenols	HPLC	Quarterly	<0.1	<0.1		500	IGV	No obvious trend evident
2016	KTK-15 D	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3		1	IGV	No obvious trend evident
2016	KTK-15 D	Sulphate	SIA-TAPAA	Quarterly	101.51	97.77333333		187.5	SELECT**	No obvious trend evident
2016	KTK-15 D	Chloride	SIA-TAPAA	Quarterly	45.9	36.76666667		187.5	SELECT**	No obvious trend evident
2016	KTK-15 D	Nitrate as NO ₃	SIA-TAPAA	Quarterly	45.1	37.63333333		37.5	SELECT**	No obvious trend evident
2016	KTK-15 D	Nitrite as NO ₂	SIA-TAPAA	Quarterly	0.13	0.12		0.375	SELECT**	No obvious trend evident
2016	KTK-15 D	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06		-	SELECT**	No obvious trend evident
2016	KTK-15 D	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.13	0.096666667		0.065-0.175	SELECT**	No obvious trend evident
2016	KTK-15 D	Total Alkalinity as CaCO ₃	Metrohm automated titration analyser	Quarterly	836	715.3333333		NAC	IGV	No obvious trend evident
2016	KTK-15 D	DO	Hach HQ30D Oxygen Meter	Quarterly	8	7		-	SELECT**	No obvious trend evident
2016	KTK-15 D	Electrical Conductivity	Field Probe	Quarterly	1448	1403.666667		800-1,875	SELECT**	No obvious trend evident
2016	KTK-15 D	TOC	TOC analyser	Quarterly	12	10		NAC	IGV	No obvious trend evident
2016	KTK-15 D	VOCs (TICs)	Headspace GC-MS	Quarterly	-	-			SELECT**	No obvious trend evident
2016	KTK-15 D	Semi - VOCs	GC-MS	Quarterly	-	-			SELECT**	No obvious trend evident
2016	KTK-15 D	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	-	-			SELECT**	No obvious trend evident
2016	KTK-15 D	Total Coliform	Membrane Filtration	Quarterly	-	-			SELECT**	No obvious trend evident
2016	KTK-15 D	E-Coli	Membrane Filtration	Quarterly	-	-			SELECT**	No obvious trend evident
Average indicates arithmetic mean										No obvious trend evident
measured concentration from all monitoring results produced during the reporting year										No obvious trend evident
Downgradient Groundwater monitoring results										No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	No obvious trend evident
2016	97-4	Dissolved Arsenic	ICP-OES	Quarterly	2.8	2.8	µg/l	7.5	SELECT**	No obvious trend evident
2016	97-4	Dissolved Barium	ICP-OES	Quarterly	40	32.25	µg/l	-	SELECT**	No obvious trend evident
2016	97-4	Dissolved Boron	ICP-OES	Quarterly	20	17	µg/l	750	SELECT**	No obvious trend evident
2016	97-4	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	97-4	Dissolved Calcium	ICP-OES	Quarterly	126.5	116.9	mg/l	200	SELECT**	No obvious trend evident
2016	97-4	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	97-4	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	97-4	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	50	IGV	No obvious trend evident
2016	97-4	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	97-4	Dissolved Magnesium	ICP-OES	Quarterly	7.2	6.325	mg/l	50	IGV	No obvious trend evident
2016	97-4	Dissolved Manganese	ICP-OES	Quarterly	37	22	µg/l	0.05	IGV	No obvious trend evident
2016	97-4	Dissolved Mercury	ICP-OES	Quarterly	<0.01	<0.01	µg/l	1	IGV	No obvious trend evident
2016	97-4	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No obvious trend evident
2016	97-4	Dissolved Potassium	ICP-OES	Quarterly	0.3	0.2	mg/l	5	IGV	No obvious trend evident
2016	97-4	Dissolved Sodium	ICP-OES	Quarterly	3.2	2.4	mg/l	150	SELECT**	No obvious trend evident
2016	97-4	Dissolved Zinc	ICP-OES	Quarterly	8	6	µg/l	0.1	IGV	No obvious trend evident
2016	97-4	Dissolved Phosphorus	ICP-OES	Quarterly	48.3	35.325	µg/l	-	SELECT**	No obvious trend evident
2016	97-4	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	97-4	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No obvious trend evident
2016	97-4	Sulphate	SIA-TAPAA	Quarterly	4.4	3.5775	mg/l	187.5	SELECT**	No obvious trend evident
2016	97-4	Chloride	SIA-TAPAA	Quarterly	2	1.75	mg/l	187.5	SELECT**	No obvious trend evident
2016	97-4	Nitrate as NO ₃	SIA-TAPAA	Quarterly	2.7	1.35	mg/l	37.5	SELECT**	No obvious trend evident
2016	97-4	Nitrite as NO ₂	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No obvious trend evident
2016	97-4	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	97-4	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.33	0.14666667	mg/l	0.065-0.175	SELECT**	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	97-4	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	356	319	mg/l	NAC	IGV	No obvious trend evident
2016	97-4	DO	Hach HQ30D Oxygen Meter	Quarterly	9	6.5	mg/l	-	SELECT**	No obvious trend evident
2016	97-4	Electrical Conductivity	Field Probe	Quarterly	641	584.25	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	97-4	TOC	TOC analyser	Quarterly	3	3	mg/l	NAC	IGV	No obvious trend evident
2016	97-4	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-4	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-4	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-4	Total Coliform	Membrane Filtration	Quarterly	>100	>100	cfu/100ml		SELECT**	No obvious trend evident
2016	97-4	E-Coli	Membrane Filtration	Quarterly	>100	>100	cfu/100ml		SELECT**	No obvious trend evident
2016	97-5D	Dissolved Arsenic	ICP-OES	Quarterly	3.5	3.5	µg/l	7.5	SELECT**	No obvious trend evident
2016	97-5D	Dissolved Barium	ICP-OES	Quarterly	140	111.75	µg/l	-	SELECT**	No obvious trend evident
2016	97-5D	Dissolved Boron	ICP-OES	Quarterly	149	99.25	µg/l	750	SELECT**	No obvious trend evident
2016	97-5D	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	97-5D	Dissolved Calcium	ICP-OES	Quarterly	149.3	146.475	mg/l	200	SELECT**	No obvious trend evident
2016	97-5D	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	97-5D	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	97-5D	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	50	IGV	No obvious trend evident
2016	97-5D	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	97-5D	Dissolved Magnesium	ICP-OES	Quarterly	18.3	17.475	mg/l	50	IGV	No obvious trend evident
2016	97-5D	Dissolved Manganese	ICP-OES	Quarterly	11	8.5	µg/l	0.05	IGV	No obvious trend evident
2016	97-5D	Dissolved Mercury	ICP-OES	Quarterly	0.01	0.01	µg/l	1	IGV	No obvious trend evident
2016	97-5D	Dissolved Nickel	ICP-OES	Quarterly	5	4.5	µg/l	15	SELECT**	No obvious trend evident
2016	97-5D	Dissolved Potassium	ICP-OES	Quarterly	5.1	3.525	mg/l	5	IGV	No obvious trend evident
2016	97-5D	Dissolved Sodium	ICP-OES	Quarterly	59.6	44.4	mg/l	150	SELECT**	No obvious trend evident
2016	97-5D	Dissolved Zinc	ICP-OES	Quarterly	6	6	µg/l	0.1	IGV	No obvious trend evident
2016	97-5D	Dissolved Phosphorus	ICP-OES	Quarterly	54.2	34.25	µg/l	-	SELECT**	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	97-5D	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	97-5D	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No obvious trend evident
2016	97-5D	Sulphate	SIA-TAPAA	Quarterly	39.3	25.9925	mg/l	187.5	SELECT**	No obvious trend evident
2016	97-5D	Chloride	SIA-TAPAA	Quarterly	69.4	53.5	mg/l	187.5	SELECT**	No obvious trend evident
2016	97-5D	Nitrate as NO3	SIA-TAPAA	Quarterly	11.6	8.85	mg/l	37.5	SELECT**	No obvious trend evident
2016	97-5D	Nitrite as NO2	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No obvious trend evident
2016	97-5D	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	97-5D	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	4.64	2.435	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	97-5D	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	484	446	mg/l	NAC	IGV	No obvious trend evident
2016	97-5D	DO	Hach HQ30D Oxygen Meter	Quarterly	6	5.75	mg/l	-	SELECT**	No obvious trend evident
2016	97-5D	Electrical Conductivity	Field Probe	Quarterly	1094	995.5	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	97-5D	TOC	TOC analyser	Quarterly	8	8	mg/l	NAC	IGV	No obvious trend evident
2016	97-5D	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-5D	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-5D	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-5D	Total Coliform	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	97-5D	E-Coli	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	97-6	Dissolved Arsenic	ICP-OES	Quarterly	<2.5	<2.5	µg/l	7.5	SELECT**	No obvious trend evident
2016	97-6	Dissolved Barium	ICP-OES	Quarterly	105	100.25	µg/l	-	SELECT**	No obvious trend evident
2016	97-6	Dissolved Boron	ICP-OES	Quarterly	67	50.25	µg/l	750	SELECT**	No obvious trend evident
2016	97-6	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	97-6	Dissolved Calcium	ICP-OES	Quarterly	146.7	142.3	mg/l	200	SELECT**	No obvious trend evident
2016	97-6	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	97-6	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	97-6	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	50	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	97-6	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	97-6	Dissolved Magnesium	ICP-OES	Quarterly	17.8	17.15	mg/l	50	IGV	No obvious trend evident
2016	97-6	Dissolved Manganese	ICP-OES	Quarterly	<2	<2	µg/l	0.05	IGV	No obvious trend evident
2016	97-6	Dissolved Mercury	ICP-OES	Quarterly	0.02	0.02	µg/l	1	IGV	No obvious trend evident
2016	97-6	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No obvious trend evident
2016	97-6	Dissolved Potassium	ICP-OES	Quarterly	1.8	1.625	mg/l	5	IGV	No obvious trend evident
2016	97-6	Dissolved Sodium	ICP-OES	Quarterly	29.6	21.85	mg/l	150	SELECT**	No obvious trend evident
2016	97-6	Dissolved Zinc	ICP-OES	Quarterly	<3	<3	µg/l	0.1	IGV	No obvious trend evident
2016	97-6	Dissolved Phosphorus	ICP-OES	Quarterly	51	39.15	µg/l	-	SELECT**	No obvious trend evident
2016	97-6	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	97-6	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No obvious trend evident
2016	97-6	Sulphate	SIA-TAPAA	Quarterly	21.5	19.9575	mg/l	187.5	SELECT**	No obvious trend evident
2016	97-6	Chloride	SIA-TAPAA	Quarterly	38	31.2	mg/l	187.5	SELECT**	No obvious trend evident
2016	97-6	Nitrate as NO3	SIA-TAPAA	Quarterly	14	12.125	mg/l	37.5	SELECT**	No obvious trend evident
2016	97-6	Nitrite as NO2	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No obvious trend evident
2016	97-6	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	97-6	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.38	0.335	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	97-6	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	428	407	mg/l	NAC	IGV	No obvious trend evident
2016	97-6	DO	Hach HQ30D Oxygen Meter	Quarterly	9	6.5	mg/l	-	SELECT**	No obvious trend evident
2016	97-6	Electrical Conductivity	Field Probe	Quarterly	883	854	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	97-6	TOC	TOC analyser	Quarterly	2	2	mg/l	NAC	IGV	No obvious trend evident
2016	97-6	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-6	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-6	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-6	Total Coliform	Membrane Filtration	Quarterly	40	40	cfu/100ml		SELECT**	No obvious trend evident
2016	97-6	E-Coli	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	97-7	Dissolved Arsenic	ICP-OES	Quarterly	3.2	3.2	µg/l	7.5	SELECT**	No obvious trend evident
2016	97-7	Dissolved Barium	ICP-OES	Quarterly	85	79.75	µg/l	-	SELECT**	No obvious trend evident
2016	97-7	Dissolved Boron	ICP-OES	Quarterly	19	18.66666667	µg/l	750	SELECT**	No obvious trend evident
2016	97-7	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	97-7	Dissolved Calcium	ICP-OES	Quarterly	159	152.1	mg/l	200	SELECT**	No obvious trend evident
2016	97-7	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	97-7	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	97-7	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	50	IGV	No obvious trend evident
2016	97-7	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	97-7	Dissolved Magnesium	ICP-OES	Quarterly	20.1	18.825	mg/l	50	IGV	No obvious trend evident
2016	97-7	Dissolved Manganese	ICP-OES	Quarterly	<2	<2	µg/l	0.05	IGV	No obvious trend evident
2016	97-7	Dissolved Mercury	ICP-OES	Quarterly	0.01	0.01	µg/l	1	IGV	No obvious trend evident
2016	97-7	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No obvious trend evident
2016	97-7	Dissolved Potassium	ICP-OES	Quarterly	0.6	0.6	mg/l	5	IGV	No obvious trend evident
2016	97-7	Dissolved Sodium	ICP-OES	Quarterly	11.7	10.85	mg/l	150	SELECT**	No obvious trend evident
2016	97-7	Dissolved Zinc	ICP-OES	Quarterly	<3	<3	µg/l	0.1	IGV	No obvious trend evident
2016	97-7	Dissolved Phosphorus	ICP-OES	Quarterly	35.1	27.05	µg/l	-	SELECT**	No obvious trend evident
2016	97-7	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	97-7	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No obvious trend evident
2016	97-7	Sulphate	SIA-TAPAA	Quarterly	22.22	19.2625	mg/l	187.5	SELECT**	No obvious trend evident
2016	97-7	Chloride	SIA-TAPAA	Quarterly	18.8	17.45	mg/l	187.5	SELECT**	No obvious trend evident
2016	97-7	Nitrate as NO3	SIA-TAPAA	Quarterly	20.4	15.8	mg/l	37.5	SELECT**	No obvious trend evident
2016	97-7	Nitrite as NO2	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No obvious trend evident
2016	97-7	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	97-7	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.44	0.26	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	97-7	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	440	428.5	mg/l	NAC	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	97-7	DO	Hach HQ30D Oxygen Meter	Quarterly	8	5.75	mg/l	-	SELECT**	No obvious trend evident
2016	97-7	Electrical Conductivity	Field Probe	Quarterly	864	851.5	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	97-7	TOC	TOC analyser	Quarterly	6	6	mg/l	NAC	IGV	No obvious trend evident
2016	97-7	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-7	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-7	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	97-7	Total Coliform	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	97-7	E-Coli	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Arsenic	ICP-OES	Quarterly	<2.5	<2.5	µg/l	7.5	SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Barium	ICP-OES	Quarterly	67	54	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Boron	ICP-OES	Quarterly	14	13.33333333	µg/l	750	SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Calcium	ICP-OES	Quarterly	131	118.425	mg/l	200	SELECT**	No obvious trend evident
2016	KTK-10	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	KTK-10	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	50	IGV	No obvious trend evident
2016	KTK-10	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Magnesium	ICP-OES	Quarterly	14	12.425	mg/l	50	IGV	No obvious trend evident
2016	KTK-10	Dissolved Manganese	ICP-OES	Quarterly	<2	<2	µg/l	0.05	IGV	No obvious trend evident
2016	KTK-10	Dissolved Mercury	ICP-OES	Quarterly	<0.01	<0.01	µg/l	1	IGV	No obvious trend evident
2016	KTK-10	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Potassium	ICP-OES	Quarterly	0.3	0.225	mg/l	5	IGV	No obvious trend evident
2016	KTK-10	Dissolved Sodium	ICP-OES	Quarterly	18	16.475	mg/l	150	SELECT**	No obvious trend evident
2016	KTK-10	Dissolved Zinc	ICP-OES	Quarterly	<3	<3	µg/l	0.1	IGV	No obvious trend evident
2016	KTK-10	Dissolved Phosphorus	ICP-OES	Quarterly	43.5	34.575	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-10	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	KTK-10	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04		Year		2016	
2016	KTK-10	Sulphate	SIA-TAPAA	Quarterly	68.9	43.8925	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-10	Chloride	SIA-TAPAA	Quarterly	24.5	23.425	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-10	Nitrate as NO3	SIA-TAPAA	Quarterly	20.4	12.875	mg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-10	Nitrite as NO2	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No obvious trend evident
2016	KTK-10	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-10	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.08	0.08	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	KTK-10	Total Alkalinity as CaCO3	Metrohm automated titration analyser	Quarterly	316	305.5	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-10	DO	Hach HQ30D Oxygen Meter	Quarterly	10	9	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-10	Electrical Conductivity	Field Probe	Quarterly	795	694.25	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	KTK-10	TOC	TOC analyser	Quarterly	<2	<2	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-10	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-10	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-10	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-10	Total Coliform	Membrane Filtration	Quarterly	18	18	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-10	E-Coli	Membrane Filtration	Quarterly	1	1	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Arsenic	ICP-OES	Quarterly	7	5.05	µg/l	7.5	SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Barium	ICP-OES	Quarterly	122	107.25	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Boron	ICP-OES	Quarterly	159	125.5	µg/l	750	SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Cadmium	ICP-OES	Quarterly	0.6	0.6	µg/l	5	SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Calcium	ICP-OES	Quarterly	157.8	154.1	mg/l	200	SELECT**	No obvious trend evident
2016	KTK-11	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	KTK-11	Total Dissolved Iron	ICP-OES	Quarterly	<20	<20	µg/l	50	IGV	No obvious trend evident
2016	KTK-11	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Magnesium	ICP-OES	Quarterly	15.9	13.75	mg/l	50	IGV	No obvious trend evident
2016	KTK-11	Dissolved Manganese	ICP-OES	Quarterly	1246	1058.25	µg/l	0.05	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	KTK-11	Dissolved Mercury	ICP-OES	Quarterly	0.07	0.04	µg/l	1	IGV	No obvious trend evident
2016	KTK-11	Dissolved Nickel	ICP-OES	Quarterly	9	7.75	µg/l	15	SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Potassium	ICP-OES	Quarterly	6.8	6	mg/l	5	IGV	No obvious trend evident
2016	KTK-11	Dissolved Sodium	ICP-OES	Quarterly	60.4	46.15	mg/l	150	SELECT**	No obvious trend evident
2016	KTK-11	Dissolved Zinc	ICP-OES	Quarterly	6	4.333333333	µg/l	0.1	IGV	No obvious trend evident
2016	KTK-11	Dissolved Phosphorus	ICP-OES	Quarterly	68.6	44.225	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-11	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	KTK-11	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No obvious trend evident
2016	KTK-11	Sulphate	SIA-TAPAA	Quarterly	92.1	57.185	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-11	Chloride	SIA-TAPAA	Quarterly	70.3	54.675	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-11	Nitrate as NO ₃	SIA-TAPAA	Quarterly	1.5	0.766666667	mg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-11	Nitrite as NO ₂	SIA-TAPAA	Quarterly	0.03	0.03	mg/l	0.375	SELECT**	No obvious trend evident
2016	KTK-11	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-11	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	6.97	4.385	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	KTK-11	Total Alkalinity as CaCO ₃	Metrohm automated titration analyser	Quarterly	460	445	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-11	DO	Hach HQ30D Oxygen Meter	Quarterly	8	6.75	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-11	Electrical Conductivity	Field Probe	Quarterly	1088	1020	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	KTK-11	TOC	TOC analyser	Quarterly	5	4.5	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-11	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-11	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-11	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-11	Total Coliform	Membrane Filtration	Quarterly	10	10	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-11	E-Coli	Membrane Filtration	Quarterly	2	2	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-19	Dissolved Arsenic	ICP-OES	Quarterly	2.8	2.8	µg/l	7.5	SELECT**	No obvious trend evident
2016	KTK-19	Dissolved Barium	ICP-OES	Quarterly	165	152.75	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-19	Dissolved Boron	ICP-OES	Quarterly	28	26.75	µg/l	750	SELECT**	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	KTK-19	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	KTK-19	Dissolved Calcium	ICP-OES	Quarterly	95.3	91.2	mg/l	200	SELECT**	No obvious trend evident
2016	KTK-19	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-19	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	KTK-19	Total Dissolved Iron	ICP-OES	Quarterly	46	43.5	µg/l	50	IGV	No obvious trend evident
2016	KTK-19	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	KTK-19	Dissolved Magnesium	ICP-OES	Quarterly	23.1	21.85	mg/l	50	IGV	No obvious trend evident
2016	KTK-19	Dissolved Manganese	ICP-OES	Quarterly	672	629.75	µg/l	0.05	IGV	No obvious trend evident
2016	KTK-19	Dissolved Mercury	ICP-OES	Quarterly	<0.01	<0.01	µg/l	1	IGV	No obvious trend evident
2016	KTK-19	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No obvious trend evident
2016	KTK-19	Dissolved Potassium	ICP-OES	Quarterly	1.3	1.275	mg/l	5	IGV	No obvious trend evident
2016	KTK-19	Dissolved Sodium	ICP-OES	Quarterly	12.8	12.175	mg/l	150	SELECT**	No obvious trend evident
2016	KTK-19	Dissolved Zinc	ICP-OES	Quarterly	<3	<3	µg/l	0.1	IGV	No obvious trend evident
2016	KTK-19	Dissolved Phosphorus	ICP-OES	Quarterly	118.1	67.825	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-19	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	KTK-19	Fluoride	Dionex (Ion-Chromatography).	Quarterly	0.4	0.35	mg/l	1	IGV	No obvious trend evident
2016	KTK-19	Sulphate	SIA-TAPAA	Quarterly	25.14	24.3	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-19	Chloride	SIA-TAPAA	Quarterly	11.5	11	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-19	Nitrate as NO ₃	SIA-TAPAA	Quarterly	0.9	0.65	mg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-19	Nitrite as NO ₂	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No obvious trend evident
2016	KTK-19	Ortho Phosphate	SIA-TAPAA	Quarterly	0.06	0.06	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-19	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.19	0.1525	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	KTK-19	Total Alkalinity as CaCO ₃	Metrohm automated titration analyser	Quarterly	330	321.5	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-19	DO	Hach HQ30D Oxygen Meter	Quarterly	10	7.75	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-19	Electrical Conductivity	Field Probe	Quarterly	627	617.25	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	KTK-19	TOC	TOC analyser	Quarterly	<2	<2	mg/l	NAC	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	KTK-19	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-19	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-19	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-19	Total Coliform	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-19	E-Coli	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Arsenic	ICP-OES	Quarterly	3.5	3.5	µg/l	7.5	SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Barium	ICP-OES	Quarterly	199	188.75	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Boron	ICP-OES	Quarterly	26	24.66666667	µg/l	750	SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Calcium	ICP-OES	Quarterly	142.6	138.6	mg/l	200	SELECT**	No obvious trend evident
2016	KTK-20	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	KTK-20	Total Dissolved Iron	ICP-OES	Quarterly	246	206.5	µg/l	50	IGV	No obvious trend evident
2016	KTK-20	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Magnesium	ICP-OES	Quarterly	29	28.15	mg/l	50	IGV	No obvious trend evident
2016	KTK-20	Dissolved Manganese	ICP-OES	Quarterly	910	863.25	µg/l	0.05	IGV	No obvious trend evident
2016	KTK-20	Dissolved Mercury	ICP-OES	Quarterly	0.02	0.02	µg/l	1	IGV	No obvious trend evident
2016	KTK-20	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Potassium	ICP-OES	Quarterly	1.5	1.4	mg/l	5	IGV	No obvious trend evident
2016	KTK-20	Dissolved Sodium	ICP-OES	Quarterly	21.1	15.3	mg/l	150	SELECT**	No obvious trend evident
2016	KTK-20	Dissolved Zinc	ICP-OES	Quarterly	4	4	µg/l	0.1	IGV	No obvious trend evident
2016	KTK-20	Dissolved Phosphorus	ICP-OES	Quarterly	725	355.3	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-20	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	KTK-20	Fluoride	Dionex (Ion-Chromatography).	Quarterly	0.4	0.4	mg/l	1	IGV	No obvious trend evident
2016	KTK-20	Sulphate	SIA-TAPAA	Quarterly	59.11	56.3425	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-20	Chloride	SIA-TAPAA	Quarterly	17.8	16.65	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-20	Nitrate as NO3	SIA-TAPAA	Quarterly	0.7	0.466666667	mg/l	37.5	SELECT**	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04		Year		2016	
2016	KTK-20	Nitrite as NO ₂	SIA-TAPAA	Quarterly	0.03	0.03	mg/l	0.375	SELECT**	No obvious trend evident
2016	KTK-20	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-20	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.23	0.1775	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	KTK-20	Total Alkalinity as CaCO ₃	Metrohm automated titration analyser	Quarterly	572	491	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-20	DO	Hach HQ30D Oxygen Meter	Quarterly	8	6.25	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-20	Electrical Conductivity	Field Probe	Quarterly	892	859	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	KTK-20	TOC	TOC analyser	Quarterly	3	3	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-20	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-20	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-20	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-20	Total Coliform	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-20	E-Coli	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Arsenic	ICP-OES	Quarterly	<2.5	<2.5	µg/l	7.5	SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Barium	ICP-OES	Quarterly	73	69.75	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Boron	ICP-OES	Quarterly	26	19.75	µg/l	750	SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Cadmium	ICP-OES	Quarterly	<0.5	<0.5	µg/l	5	SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Calcium	ICP-OES	Quarterly	129	127.65	mg/l	200	SELECT**	No obvious trend evident
2016	KTK-21	Total Dissolved Chromium	ICP-OES	Quarterly	<1.5	<1.5	µg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Copper	ICP-OES	Quarterly	<7	<7	µg/l	1500	SELECT**	No obvious trend evident
2016	KTK-21	Total Dissolved Iron	ICP-OES	Quarterly	26	26	µg/l	50	IGV	No obvious trend evident
2016	KTK-21	Dissolved Lead	ICP-OES	Quarterly	<5	<5	µg/l	18.75	SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Magnesium	ICP-OES	Quarterly	11	10.825	mg/l	50	IGV	No obvious trend evident
2016	KTK-21	Dissolved Manganese	ICP-OES	Quarterly	4	4	µg/l	0.05	IGV	No obvious trend evident
2016	KTK-21	Dissolved Mercury	ICP-OES	Quarterly	<0.01	<0.01	µg/l	1	IGV	No obvious trend evident
2016	KTK-21	Dissolved Nickel	ICP-OES	Quarterly	<2	<2	µg/l	15	SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Potassium	ICP-OES	Quarterly	0.6	0.375	mg/l	5	IGV	No obvious trend evident

Groundwater/Soil monitoring template				Lic No:	W0081-04	Year	2016			
2016	KTK-21	Dissolved Sodium	ICP-OES	Quarterly	3.7	3.05	mg/l	150	SELECT**	No obvious trend evident
2016	KTK-21	Dissolved Zinc	ICP-OES	Quarterly	<3	<3	µg/l	0.1	IGV	No obvious trend evident
2016	KTK-21	Dissolved Phosphorus	ICP-OES	Quarterly	1150	716.95	µg/l	-	SELECT**	No obvious trend evident
2016	KTK-21	Total Phenols	HPLC	Quarterly	<0.1	<0.1	mg/l	500	IGV	No obvious trend evident
2016	KTK-21	Fluoride	Dionex (Ion-Chromatography).	Quarterly	<0.3	<0.3	mg/l	1	IGV	No obvious trend evident
2016	KTK-21	Sulphate	SIA-TAPAA	Quarterly	4.46	3.655	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-21	Chloride	SIA-TAPAA	Quarterly	4.2	4	mg/l	187.5	SELECT**	No obvious trend evident
2016	KTK-21	Nitrate as NO ₃	SIA-TAPAA	Quarterly	1.6	1.325	mg/l	37.5	SELECT**	No obvious trend evident
2016	KTK-21	Nitrite as NO ₂	SIA-TAPAA	Quarterly	<0.02	<0.02	mg/l	0.375	SELECT**	No obvious trend evident
2016	KTK-21	Ortho Phosphate	SIA-TAPAA	Quarterly	<0.06	<0.06	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-21	Ammoniacal Nitrogen (N)	SIA-TAPAA	Quarterly	0.12	0.0775	mg/l	0.065-0.175	SELECT**	No obvious trend evident
2016	KTK-21	Total Alkalinity as CaCO ₃	Metrohm automated titration analyser	Quarterly	616	477.5	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-21	DO	Hach HQ30D Oxygen Meter	Quarterly	9	8.25	mg/l	-	SELECT**	No obvious trend evident
2016	KTK-21	Electrical Conductivity	Field Probe	Quarterly	667	643.25	µS/cm	800-1,875	SELECT**	No obvious trend evident
2016	KTK-21	TOC	TOC analyser	Quarterly	<2	<2	mg/l	NAC	IGV	No obvious trend evident
2016	KTK-21	VOCs (TICs)	Headspace GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-21	Semi - VOCs	GC-MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-21	Pesticides MS	Large Volume Injection on GC Triple Quad MS	Quarterly	ND	ND	µg/l		SELECT**	No obvious trend evident
2016	KTK-21	Total Coliform	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
2016	KTK-21	E-Coli	Membrane Filtration	Quarterly	0	0	cfu/100ml		SELECT**	No obvious trend evident
<p>*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.</p> <p style="text-align: right;">Groundwater monitoring template</p> <p>More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites (EPA 2013), published guidance (see the link in G31)</p>										
<p>**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)</p>								<p style="text-align: center;"> Groundwater Drinking water Surface water EQS regulations (private supply) Drinking water (public supply) standards Interim Guideline Values (IGV) </p>		

Environmental Liabilities template

Lic No:

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Year

2016

[Click here to access EPA guidance on Environmental Liabilities and Financial provision](#)

		Commentary
1	ELRA initial agreement status	As part of Condition 12.3.2, the Licensee has completed a fully costed Environmental Liabilities Risk Assessment for the site. This document outlines the potential unknown environmental liabilities associated with the landfill and estimates the possible cost of these liabilities. An environmental liability insurance policy has been taken out for €10M which is more than sufficient to cover any unforeseen event contemplated within the ELRA.
	Submitted and agreed by EPA	
2	ELRA review status	
3	Amount of Financial Provision cover required as determined by the latest ELRA	
4	Financial Provision for ELRA status	
5	Financial Provision for ELRA - amount of cover	
6	Financial Provision for ELRA - type	
7	Financial provision for ELRA expiry date	Under condition 12.3.3 of the site licence Kilecullen Landfill is required to maintain a financial provision that is sufficient to cover all liabilities incurred whilst carrying on the activities to which this licence relates. As part of the licence transfer from KTK Landfill Ltd to Kilecullen landfill Ltd, the CRAMP liability was recalculated and agreed with the Office for Environmental Enforcement as being €3.42M as at 1 January 2013. Financial provision, to the satisfaction of the Board of the EPA, was then put in place sufficient to cover the cost of this CRAMP liability.
8	Closure plan initial agreement status	
9	Closure plan review status	
10	Financial Provision for Closure status	
11	Financial Provision for Closure - amount of cover	
12	Financial Provision for Closure - type	
13	Financial provision for Closure expiry date	

Environmental Management Programme/Continuous Improvement Programme template		Lic No:	W0081-04	Year	2016
Highlighted cells contain dropdown menu click to view		Additional Information			
1	Do you maintain an Environmental Management 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			

Environmental Management Programme (EMP) report					
Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
CRAMP	Complete installation of the permanent Surface Water Management System	before autumn 2017	Meetings held and documented	Facility Manager	Complete installation of the permanent Surface Water Management System
	Removal of surplus equipment and materials etc. on site	ongoing	Progressive final and intermediate capping, continuous gas extraction.	Facility Manager	Removal of surplus equipment and materials etc. on site
Minimise the amount of natural resources (water, power etc.) consumed at the Facility.	Conduct Energy Audit of Facility and identify opportunities for improved energy efficiency in aftercare phase.	before autumn 2017	Structured capping program due for completion in 2017	Site Manager	Conduct Energy Audit of Facility and identify opportunities for improved energy efficiency in aftercare phase.
Training	Continue to train staff on a regular basis in EMS system, waste licence and Emergency Response.	Ongoing Annual Basis	Regular landfill infrastructure checks and field balancing	Site Manager	Continue to train staff on a regular basis in EMS system, waste licence and Emergency Response.
CRAMP	Complete installation of the permanent Surface Water Management System	before autumn 2017	Placement of geohess on outer flank of landfill	Facility Manager	Complete installation of the permanent Surface Water Management System
	Removal of surplus equipment on site (Wheel wash and weighbridge)	End 2017	As per Target	Facility Manager	Removal of surplus equipment on site (Wheel wash and weighbridge)
Minimise the amount of natural resources (water, power etc.) consumed at the Facility.	Conduct Energy Audit of Facility and identify opportunities for improved energy efficiency in aftercare phase.	Sep-17	Weekly and quarterly checks completed	Facility and Assistant Manager	Conduct Energy Audit of Facility and identify opportunities for improved energy efficiency in aftercare phase.
Training	Continue to train staff on a regular basis in EMS system, waste licence and Emergency Response.	Ongoing Annual Basis	Approved by the Agency. Now implemented in Cells 3 and 4.	Facility and Assistant Manager	Continue to train staff on a regular basis in EMS system, waste licence and Emergency Response.
IMS System	Review and amend IMS system in accordance with the new AGB landfills IMS systems	End 2017	Cells filled on individual basis, on site checks are completed during cell construction	Facility and Assistant and H&S Manager	Review and amend IMS system in accordance with the new AGB landfills IMS systems
			Plans on hold		

Noise monitoring summary report

Lic No: W0081-04 Year: 2016

- 1 Was noise monitoring a licence requirement for the AER period?
If yes please fill in table N1 noise summary below
- 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?
- 3 Does your site have a noise reduction plan?
- 4 When was the noise reduction plan last updated?
- 5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

[Noise Guidance note NG4](#)

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	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 <u>site</u> compliant with noise limits (day/evening/night)?
								SELECT	SELECT		SELECT

*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?

** please explain the reason for not taking action/resolution of noise issues?

Any additional comments? (less than 200 words)

Resource Usage/Energy efficiency summary

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1 When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below

2 Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information

3 Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information

Additional information

	2016
No	
SELECT	Not Applicable

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)				
Total Energy Generated (MWHrs)				
Total Renewable Energy Generated (MWHrs)	8,916	7,423	-16.75%	
Electricity Consumption (MWHrs)	0.1926	0.199603	3.64%	
Fossil Fuels Consumption:				
Heavy Fuel Oil (m3)	0.11	0.03	-72.73%	
Light Fuel Oil (m3)	9	0.5	-94.50%	
Natural gas (m3)	NA	NA		
Coal/Solid fuel (metric tonnes)	NA	NA		
Peat (metric tonnes)				
Renewable Biomass				
Renewable energy generated on site				

* 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 ³ /yr):	Volume used i.e not discharged to environment e.g. released as steam m3/yr	Unaccounted for Water:
Groundwater							
Surface water							
Public supply	0.661	0.661	0				
Recycled water							
Total							

* 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

6,871

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

Resource Usage/Energy efficiency summary Lic No: W0081-04 Year 2016

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

Complaints and Incidents summary template Lic No: W0081-04 Year 2016

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	
No	

Date	Category	Other type (please specify)	Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
Total complaints open at start of reporting year	0						
Total new complaints received during reporting year	0						
Total complaints closed during reporting year	0						
Balance of complaints end of reporting year	0						

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	
Yes	

*For information on how to report and what constitutes an incident [What is an incident](#)

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
23/07/2016 08:00	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI011378	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
27/10/2016 09:30	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI011063	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
22/09/2016 07:15	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI010897	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
15/08/2016 13:00	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI010783	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
29/07/2016 08:30	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI010590	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
23/06/2016 07:00	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI010354	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
19/05/2016 08:00	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI010155	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
19/04/2016 13:00	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI010010	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
24/03/2016 09:00	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI009865	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
29/02/2016 14:00	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI009750	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
28/01/2016 12:00	Trigger Level Reached	Plant or equipment maintenance (Not at WWTP)	1. Minor	Air	Trigger Level Reached	INCI009559	Normal activities	EPA	New			Complete	30/01/2017 16:42	Low
% reduction/ increase	100%													

WASTE SUMMARY	Lic No:	W0081-04	Year	2016
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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

-> 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					

*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?

SELECT

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

SELECT

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

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
			SELECT	