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September 22nd 2022

Elevated phenol levels in the groundwater at Benduff Landfill, County Cork.

Cork County Council (Council) requested O'Callaghan Moran & Associates (OCM) to provide assistance in relation to the reporting of elevated phenols in the groundwater at the closed Benduff Landfill that is regulated by the Environmental Protection Agency (EPA).

Following a review of the routine quarterly monitoring report for Quarter 2 of 2022, the EPA requested the Council to submit the following additional information so that a complete assessment of the report may be completed:

- *Investigation of sources of Total Phenolics detected in groundwater samples during Q1 and Q2 2022 monitoring rounds;*
- *Contamination trends for Total Phenolics in all sampled groundwater wells for the period between 2019 to 2022; and,*
- *Laboratory certificates for analyses completed during Q1 & Q2 of 2022.*

OCM reviewed the Quarter 2 groundwater monitoring results. The samples were collected by Independent Analytical Supplies (IAS). A copy of the IAS laboratory report is in Appendix 1. The results indicated the presence of phenols in eight of the nine samples ranging from 0.0.56mg/l in MW-5 to 0.933mg/l in MW-6.

IAS carried out the phenol analysis using an in-house method that is not accredited by a national body with responsibility for accrediting laboratories. OCM recommended that, subject to EPA approval, the Council collect another round of samples and arrange for their analysis at an alternative laboratory that is accredited for phenol analysis.

The EPA approved the proposed monitoring programme and specifically requested the analysis of speciated phenols in all groundwater, surface water and leachate samples to be collected during the 3 monitoring round.

IAS collected the groundwater samples for the routine quarterly suite on August 24th 2022 but the analysis was subcontracted to ALS Global a UKAS accredited laboratory. ENVA was contracted to collect the groundwater, surface water and leachate samples for the analysis for speciated phenols. ENVA completed the sampling on August 25th and the analysis was subcontracted to ALS Laboratory in North Wales also a UKAS accredited laboratory.

The analysis reports for both laboratories are in Appendix 2. Both sets of analysis indicates that total and speciated phenols were not detected in any of the samples.

OCM has also reviewed the IAS laboratory reports for the period 2019 to 2022 (Q1). The phenol analysis was undertaken using an unaccredited methodology (colorimetry) on all occasions. OCM considers, on the basis of the results of the August 2022 monitoring which involved accredited methodologies (EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)) that the results reported for the period 2019 -2022 are unreliable and that phenols were unlikely to have been present in the groundwater.

OCM understand that Cork County Council will in future only use laboratories that use accredited methodologies for analysis as part of their monitoring programmes.

APPENDIX 1

IAS Results Quarter 2

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 9411S001

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	CUSTOMER
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240522B
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/05/2022
Sample Reference:	BENDUFF QUARTERLY	**Date Analysis Commenced:**	24/05/2022
Sample Description:	MW1	**Date Certificate Issued:**	08/06/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.8	pH units
Conductivity	SOP 2076	618	µS/cm 20°C
Depth*	Site	2.86	per 1000 gallons
Dissolved Oxygen*	Site	3.91	mg/l O_2
Temperature Lab*	In -house Method	12.1	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	2.35	mg/l N
Sodium	SOP 2125	18.9	mg/l
Potassium	SOP 2125	6.71	mg/l
Chloride	SOP 2065	29.84	mg/l
TOC*	In -house Method	2.4	mg/l
Phenols*	In -house Method	0.149	mg/l
Ammonia	SOP 2057	0.38	mg/l NH_3

Signed: Laura Kavanagh Date: 08/06/2022

Laura Kavanagh -

*** = not INAB Accredited ^ = Subcontracted**

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IAS Laboratories, Unit 4 Bagenalstown Bus. Park, Bagenalstown, Co Carlow, R21 YX99

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 9411S002

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	CUSTOMER
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240522B
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/05/2022
Sample Reference:	BENDUFF QUARTERLY	**Date Analysis Commenced:**	24/05/2022
Sample Description:	MW2	**Date Certificate Issued:**	08/06/2022

Parameter	Method	Result	Unit
pH	SOP 2004	7.6	pH units
Conductivity	SOP 2076	688	µS/cm 20°C
Depth*	Site	19.345	per 1000 gallons
Dissolved Oxygen*	Site	3.16	mg/l O_2
Temperature Lab*	In -house Method	11.8	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	LIGHT BROWN	-
Total Oxidised Nitrogen	SOP 2058	<0.50	mg/l N
Sodium	SOP 2125	25.4	mg/l
Potassium	SOP 2125	2.09	mg/l
Chloride	SOP 2065	50.67	mg/l
TOC*	In -house Method	1.1	mg/l
Phenols*	In -house Method	0.070	mg/l
Ammonia	SOP 2057	0.11	mg/l NH_3

Signed: Laura Kavanagh Date: 08/06/2022

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 9411S003

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	CUSTOMER
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240522B
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/05/2022
Sample Reference:	BENDUFF QUARTERLY	**Date Analysis Commenced:**	24/05/2022
Sample Description:	MW3	**Date Certificate Issued:**	08/06/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.1	pH units
Conductivity	SOP 2076	218	µS/cm 20°C
Depth*	Site	1.95	per 1000 gallons
Dissolved Oxygen*	Site	2.71	mg/l O_2
Temperature Lab*	In -house Method	12	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	0.68	mg/l N
Sodium	SOP 2125	18.0	mg/l
Potassium	SOP 2125	1.57	mg/l
Chloride	SOP 2065	35.54	mg/l
TOC*	In -house Method	2.3	mg/l
Phenols*	In -house Method	<0.05	mg/l
Ammonia	SOP 2057	0.07	mg/l NH_3

Signed: Laura Kavanagh Date: 08/06/2022

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 9411S004

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	CUSTOMER
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240522B
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/05/2022
Sample Reference:	BENDUFF QUARTERLY	**Date Analysis Commenced:**	24/05/2022
Sample Description:	MW4	**Date Certificate Issued:**	08/06/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.1	pH units
Conductivity	SOP 2076	118.6	µS/cm 20°C
Depth*	Site	4.39	per 1000 gallons
Dissolved Oxygen*	Site	7.36	mg/l O_2
Temperature Lab*	In -house Method	12	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	2.13	mg/l N
Sodium	SOP 2125	10.1	mg/l
Potassium	SOP 2125	<1.00	mg/l
Chloride	SOP 2065	19.86	mg/l
TOC*	In -house Method	1.8	mg/l
Phenols*	In -house Method	0.061	mg/l
Ammonia	SOP 2057	0.07	mg/l NH_3

Signed: Laura Kavanagh Date: 08/06/2022

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 9411S005

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	CUSTOMER
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240522B
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/05/2022
Sample Reference:	BENDUFF QUARTERLY	**Date Analysis Commenced:**	24/05/2022
Sample Description:	MW5	**Date Certificate Issued:**	08/06/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.4	pH units
Conductivity	SOP 2076	222	µS/cm 20°C
Depth*	Site	1.94	per 1000 gallons
Dissolved Oxygen*	Site	2.20	mg/l O_2
Temperature Lab*	In -house Method	12	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	1.07	mg/l N
Sodium	SOP 2125	16.7	mg/l
Potassium	SOP 2125	1.18	mg/l
Chloride	SOP 2065	31.00	mg/l
TOC*	In -house Method	2.0	mg/l
Phenols*	In -house Method	0.056	mg/l
Ammonia	SOP 2057	0.09	mg/l NH_3

Signed: Laura Kavanagh Date: 08/06/2022

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 9411S006

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	CUSTOMER
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240522B
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/05/2022
Sample Reference:	BENDUFF QUARTERLY	**Date Analysis Commenced:**	24/05/2022
Sample Description:	MW6	**Date Certificate Issued:**	08/06/2022

Parameter	Method	Result	Unit
pH	SOP 2004	7.2	pH units
Conductivity	SOP 2076	362	µS/cm 20°C
Depth*	Site	2.44	per 1000 gallons
Dissolved Oxygen*	Site	2.51	mg/l O_2
Temperature Lab*	In -house Method	11.8	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	BLACK	-
Total Oxidised Nitrogen	SOP 2058	<0.50	mg/l N
Sodium	SOP 2125	20.7	mg/l
Potassium	SOP 2125	1.06	mg/l
Chloride	SOP 2065	29.42	mg/l
TOC*	In -house Method	0.8	mg/l
Phenols*	In -house Method	0.933	mg/l
Ammonia	SOP 2057	0.09	mg/l NH_3

Signed: Laura Kavanagh Date: 08/06/2022

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 9411S007

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	CUSTOMER
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240522B
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/05/2022
Sample Reference:	BENDUFF QUARTERLY	**Date Analysis Commenced:**	24/05/2022
Sample Description:	SPJ1	**Date Certificate Issued:**	08/06/2022

Parameter	Method	Result	Unit
pH	SOP 2004	7.1	pH units
Conductivity	SOP 2076	375	µS/cm 20°C
Depth*	Site	N/A	per 1000 gallons
Dissolved Oxygen*	Site	3.36	mg/l O_2
Temperature Lab*	In -house Method	12	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	<0.50	mg/l N
Sodium	SOP 2125	14.7	mg/l
Potassium	SOP 2125	1.08	mg/l
Chloride	SOP 2065	29.53	mg/l
TOC*	In -house Method	0.7	mg/l
Phenols*	In -house Method	0.056	mg/l
Ammonia	SOP 2057	0.05	mg/l NH_3

Signed: Laura Kavanagh Date: 08/06/2022

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 9411S008

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	CUSTOMER
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240522B
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/05/2022
Sample Reference:	BENDUFF QUARTERLY	**Date Analysis Commenced:**	24/05/2022
Sample Description:	SPM2	**Date Certificate Issued:**	08/06/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.6	pH units
Conductivity	SOP 2076	294	µS/cm 20°C
Depth*	Site	4.66	per 1000 gallons
Dissolved Oxygen*	Site	4.73	mg/l O_2
Temperature Lab*	In -house Method	11.8	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	12.40	mg/l N
Sodium	SOP 2125	14.7	mg/l
Potassium	SOP 2125	12.5	mg/l
Chloride	SOP 2065	27.46	mg/l
TOC*	In -house Method	2.1	mg/l
Phenols*	In -house Method	0.071	mg/l
Ammonia	SOP 2057	0.09	mg/l NH_3

Signed: Laura Kavanagh Date: 08/06/2022

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APPENDIX 2

ALS Global and ALS Wales Analysis August 2022

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S001

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW1	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.8	pH units
Conductivity	SOP 2076	570	µS/cm 20°C
Depth*	Site	2.28	per 1000 gallons
Dissolved Oxygen*	Site	5.38	mg/l O_2
Temperature Lab*	In -house Method	12.2	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	LIGHT ORANGE	-
Total Oxidised Nitrogen	SOP 2058	2.91	mg/l N
Sodium	SOP 2125	18.2	mg/l
Potassium	SOP 2125	5.99	mg/l
Chloride	SOP 2065	30.08	mg/l
TOC*	In -house Method	2.7	mg/l
Ammonia	SOP 2057	0.09	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<10.0	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2-Chlorophenol*^	Subcontracted	<0.20	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.20	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.20	µg/l
2-methylphenol*^	Subcontracted	<0.20	µg/l
3&4-Methylphenol*^	Subcontracted	<0.20	µg/l
2-Nitrophenol*^	Subcontracted	<0.20	µg/l
4-Nitrophenol*^	Subcontracted	<10.0	µg/l

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S001

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW1	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.20	µg/l
Pentachlorophenol*^	Subcontracted	<2.00	µg/l
Phenol*^	Subcontracted	<1.00	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<4.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S002

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW2	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	7.5	pH units
Conductivity	SOP 2076	641	µS/cm 20°C
Depth*	Site	20.51	per 1000 gallons
Dissolved Oxygen*	Site	3.16	mg/l O_2
Temperature Lab*	In -house Method	10.8	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	LIGHT BROW	-
Total Oxidised Nitrogen	SOP 2058	1.48	mg/l N
Sodium	SOP 2125	25.0	mg/l
Potassium	SOP 2125	2.10	mg/l
Chloride	SOP 2065	47.56	mg/l
TOC*	In -house Method	2.6	mg/l
Ammonia	SOP 2057	0.07	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<10.0	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2-Chlorophenol*^	Subcontracted	<0.20	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.20	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.20	µg/l
2-methylphenol*^	Subcontracted	<0.20	µg/l
3&4-Methylphenol*^	Subcontracted	<0.20	µg/l
2-Nitrophenol*^	Subcontracted	<0.20	µg/l
4-Nitrophenol*^	Subcontracted	<10.0	µg/l

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S002

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW2	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.20	µg/l
Pentachlorophenol*^	Subcontracted	<2.00	µg/l
Phenol*^	Subcontracted	<1.00	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<4.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

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IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S003

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW3	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.2	pH units
Conductivity	SOP 2076	204	µS/cm 20°C
Depth*	Site	2.41	per 1000 gallons
Dissolved Oxygen*	Site	2.95	mg/l O_2
Temperature Lab*	In -house Method	12.5	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	<0.50	mg/l N
Sodium	SOP 2125	17.7	mg/l
Potassium	SOP 2125	1.65	mg/l
Chloride	SOP 2065	35.10	mg/l
TOC*	In -house Method	2.0	mg/l
Ammonia	SOP 2057	0.12	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<10.0	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2-Chlorophenol*^	Subcontracted	<0.20	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.20	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.20	µg/l
2-methylphenol*^	Subcontracted	<0.20	µg/l
3&4-Methylphenol*^	Subcontracted	<0.20	µg/l
2-Nitrophenol*^	Subcontracted	<0.20	µg/l
4-Nitrophenol*^	Subcontracted	<10.0	µg/l

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S003

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW3	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.20	µg/l
Pentachlorophenol*^	Subcontracted	<2.00	µg/l
Phenol*^	Subcontracted	<1.00	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<4.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

*** = not INAB Accredited ^ = Subcontracted**

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S004

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW4	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.0	pH units
Conductivity	SOP 2076	87.2	µS/cm 20°C
Depth*	Site	4.46	per 1000 gallons
Dissolved Oxygen*	Site	5.28	mg/l O_2
Temperature Lab*	In -house Method	12.1	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	1.76	mg/l N
Sodium	SOP 2125	7.15	mg/l
Potassium	SOP 2125	<1.00	mg/l
Chloride	SOP 2065	12.05	mg/l
TOC*	In -house Method	1.1	mg/l
Ammonia	SOP 2057	0.43	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<10.0	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2-Chlorophenol*^	Subcontracted	<0.20	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.20	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.20	µg/l
2-methylphenol*^	Subcontracted	<0.20	µg/l
3&4-Methylphenol*^	Subcontracted	<0.20	µg/l
2-Nitrophenol*^	Subcontracted	<0.20	µg/l
4-Nitrophenol*^	Subcontracted	<10.0	µg/l

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S004

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW4	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.20	µg/l
Pentachlorophenol*^	Subcontracted	<2.00	µg/l
Phenol*^	Subcontracted	<1.00	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<4.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S005

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW5	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.1	pH units
Conductivity	SOP 2076	228	µS/cm 20°C
Depth*	Site	3.90	per 1000 gallons
Dissolved Oxygen*	Site	1.99	mg/l O_2
Temperature Lab*	In -house Method	12.3	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	2.31	mg/l N
Sodium	SOP 2125	20.5	mg/l
Potassium	SOP 2125	<1.00	mg/l
Chloride	SOP 2065	37.43	mg/l
TOC*	In -house Method	1.7	mg/l
Ammonia	SOP 2057	0.05	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<10.0	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2-Chlorophenol*^	Subcontracted	<0.20	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.20	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.20	µg/l
2-methylphenol*^	Subcontracted	<0.20	µg/l
3&4-Methylphenol*^	Subcontracted	<0.20	µg/l
2-Nitrophenol*^	Subcontracted	<0.20	µg/l
4-Nitrophenol*^	Subcontracted	<10.0	µg/l

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S005

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW5	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.20	µg/l
Pentachlorophenol*^	Subcontracted	<2.00	µg/l
Phenol*^	Subcontracted	<1.00	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<4.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S006

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW6	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	7.2	pH units
Conductivity	SOP 2076	326	µS/cm 20°C
Depth*	Site	2.78	per 1000 gallons
Dissolved Oxygen*	Site	2.97	mg/l O_2
Temperature Lab*	In -house Method	12.3	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	BLACK	-
Total Oxidised Nitrogen	SOP 2058	<0.50	mg/l N
Sodium	SOP 2125	15.9	mg/l
Potassium	SOP 2125	1.14	mg/l
Chloride	SOP 2065	29.03	mg/l
TOC*	In -house Method	1.5	mg/l
Ammonia	SOP 2057	0.23	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<10.0	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2-Chlorophenol*^	Subcontracted	<0.20	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.20	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.20	µg/l
2-methylphenol*^	Subcontracted	<0.20	µg/l
3&4-Methylphenol*^	Subcontracted	<0.20	µg/l
2-Nitrophenol*^	Subcontracted	<0.20	µg/l
4-Nitrophenol*^	Subcontracted	<10.0	µg/l

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S006

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW6	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.20	µg/l
Pentachlorophenol*^	Subcontracted	<2.00	µg/l
Phenol*^	Subcontracted	<1.00	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<4.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S007

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW7	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	7.0	pH units
Conductivity	SOP 2076	267	µS/cm 20°C
Depth*	Site	3.09	per 1000 gallons
Dissolved Oxygen*	Site	2.02	mg/l O_2
Temperature Lab*	In -house Method	11.1	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	<0.50	mg/l N
Sodium	SOP 2125	15.9	mg/l
Potassium	SOP 2125	1.19	mg/l
Chloride	SOP 2065	28.96	mg/l
TOC*	In -house Method	3.6	mg/l
Ammonia	SOP 2057	0.21	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<10.0	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2-Chlorophenol*^	Subcontracted	<0.20	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.20	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.20	µg/l
2-methylphenol*^	Subcontracted	<0.20	µg/l
3&4-Methylphenol*^	Subcontracted	<0.20	µg/l
2-Nitrophenol*^	Subcontracted	<0.20	µg/l
4-Nitrophenol*^	Subcontracted	<10.0	µg/l

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S007

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	MW7	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.20	µg/l
Pentachlorophenol*^	Subcontracted	<2.00	µg/l
Phenol*^	Subcontracted	<1.00	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<4.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S008

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	SPJ1	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	5.9	pH units
Conductivity	SOP 2076	211	µS/cm 20°C
Depth*	Site	N/A	per 1000 gallons
Dissolved Oxygen*	Site	7.52	mg/l O_2
Temperature Lab*	In -house Method	12.2	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	2.53	mg/l N
Sodium	SOP 2125	14.6	mg/l
Potassium	SOP 2125	<1.00	mg/l
Chloride	SOP 2065	24.73	mg/l
TOC*	In -house Method	0.8	mg/l
Ammonia	SOP 2057	0.09	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.10	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.10	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<5.00	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.10	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.10	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.10	µg/l
2-Chlorophenol*^	Subcontracted	<0.10	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.10	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.10	µg/l
2-methylphenol*^	Subcontracted	<0.10	µg/l
3&4-Methylphenol*^	Subcontracted	<0.10	µg/l
2-Nitrophenol*^	Subcontracted	<0.10	µg/l
4-Nitrophenol*^	Subcontracted	<5.00	µg/l

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S008

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	SPJ1	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.10	µg/l
Pentachlorophenol*^	Subcontracted	<1.00	µg/l
Phenol*^	Subcontracted	<0.50	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<2.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S009

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	SPM2	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
pH	SOP 2004	6.4	pH units
Conductivity	SOP 2076	280	µS/cm 20°C
Depth*	Site	5.01	per 1000 gallons
Dissolved Oxygen*	Site	5.62	mg/l O_2
Temperature Lab*	In -house Method	11.6	Degree Celsius
Odour*	Site	NONE	-
Visual*	Site	CLEAR	-
Total Oxidised Nitrogen	SOP 2058	9.18	mg/l N
Sodium	SOP 2125	14.7	mg/l
Potassium	SOP 2125	13.4	mg/l
Chloride	SOP 2065	29.36	mg/l
TOC*	In -house Method	1.1	mg/l
Ammonia	SOP 2057	0.17	mg/l NH_3
2,4,3,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,3,5,6 TETRACHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2,4 DINITROPHENOL*^	Subcontracted	<10.0	µg/l
2,4,5-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,4,6-Trichlorophenol*^	Subcontracted	<0.20	µg/l
2,6 DICHLOROPHENOL*^	Subcontracted	<0.20	µg/l
2-Chlorophenol*^	Subcontracted	<0.20	µg/l
3,5 DIMETHYLPHENOL*^	Subcontracted	<0.20	µg/l
2,4-Dimethylphenol*^	Subcontracted	<0.20	µg/l
2-methylphenol*^	Subcontracted	<0.20	µg/l
3&4-Methylphenol*^	Subcontracted	<0.20	µg/l
2-Nitrophenol*^	Subcontracted	<0.20	µg/l
4-Nitrophenol*^	Subcontracted	<10.0	µg/l

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

IAS LABORATORIES

Independent Analytical Supplies

Test Report

Lab Report Number: 11464S009

Customer ID:	CORK.C2	**Analysis Type:**	CORK BENDUFF QTRLY GW (CK
Contact Name:	MAIREAD HALES	**Delivery By:**	IAS COLLECTION CHARGABLE
Company Name:	CORK CO.CO- ZONE 1	**Sample Card Number:**	240822.D5
Address:	HUME HOUSE WOLF TONE STREET CLONAKILTY CO.CORK	**Condition on Receipt:**	Acceptable
Sample Type:	GROUND WATER	**Date Sample Received:**	24/08/2022
Sample Reference:	BENDUFF GW QTR	**Date Analysis Commenced:**	24/08/2022
Sample Description:	SPM2	**Date Certificate Issued:**	07/09/2022

Parameter	Method	Result	Unit
4 CHLOROPHENOL*^	Subcontracted	<0.20	µg/l
Pentachlorophenol*^	Subcontracted	<2.00	µg/l
Phenol*^	Subcontracted	<1.00	µg/l
4,6 DINITRO-2-METHYLPHENOL*^	Subcontracted	<4.00	µg/l

Signed: Laura Kavanagh Date: 07/09/2022

Laura Kavanagh - Deputy Lab Manager

*** = not INAB Accredited ^ = Subcontracted**

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Landfill ENVA Cork
Raffeen Industrial Estate
Ringaskiddy Road
Monkstown
Cork
Co. Cork

Attention: Daniel Murphy

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 September 2022
Customer:	Landfill ENVA Cork
Sample Delivery Group (SDG):	220906-43
Your Reference:	Benduff Landfill
Location:	Benduff
Report No:	661324
Order Number:	38289

We received 10 samples on Friday September 02, 2022 and 10 of these samples were scheduled for analysis which was completed on Thursday September 15, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

Sonia McWhan

Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26833127	MW1		0.00 - 0.00	05/09/2022
26833156	MW2		0.00 - 0.00	05/09/2022
26833173	MW3		0.00 - 0.00	05/09/2022
26833193	MW4		0.00 - 0.00	05/09/2022
26833211	MW5		0.00 - 0.00	05/09/2022
26833226	MW6		0.00 - 0.00	05/09/2022
26833244	MW7		0.00 - 0.00	05/09/2022
26833263	S1		0.00 - 0.00	05/09/2022
26833282	SPJ1		0.00 - 0.00	05/09/2022
26833142	SPM2		0.00 - 0.00	05/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			26833127	MW1		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							1lplastic (ALE221)	GW
							250ml BOD (ALE212)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
			26833156	MW2		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							1lplastic (ALE221)	GW
							250ml BOD (ALE212)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
			26833173	MW3		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							1lplastic (ALE221)	GW
							250ml BOD (ALE212)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 10		X						X						X			
Ammonium Low	All	NDPs: 0 Tests: 10				X						X						X	
Anions by Kone (w)	All	NDPs: 0 Tests: 10		X						X						X			
BOD Unfiltered	All	NDPs: 0 Tests: 10			X						X						X		
COD Unfiltered	All	NDPs: 0 Tests: 10		X						X						X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 10					X							X					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10						X							X				X
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 10	X							X						X			
Fluoride	All	NDPs: 0 Tests: 10		X						X						X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10							X						X				
Mercury Dissolved	All	NDPs: 0 Tests: 10						X						X					X
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 10	X							X						X			
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 10	X							X						X			
pH Value	All	NDPs: 0 Tests: 10		X						X						X			
Phenols by HPLC (W)	All	NDPs: 0 Tests: 10				X						X						X	

26833226	MW6		0.00 - 0.00	HNO3 Filtered (ALE204)	GW								X				X						
				H2SO4 (ALE244)	GW			X															X
				250ml BOD (ALE212)	GW					X													
				1lplastic (ALE221)	GW		X			X			X				X					X	
				0.5l glass bottle (ALE227)	GW									X					X		X		
26833211	MW5		0.00 - 0.00	Vial (ALE297)	GW												X						
				NaOH (ALE245)	GW							X											
				HNO3 Filtered (ALE204)	GW								X				X						
				H2SO4 (ALE244)	GW			X															X
				250ml BOD (ALE212)	GW					X													
				1lplastic (ALE221)	GW		X			X			X				X					X	
				0.5l glass bottle (ALE227)	GW									X					X		X		
26833193	MW4		0.00 - 0.00	Vial (ALE297)	GW												X						
				NaOH (ALE245)	GW							X											
				HNO3 Filtered (ALE204)	GW								X				X						
				H2SO4 (ALE244)	GW			X															X
				250ml BOD (ALE212)	GW					X													
				1lplastic (ALE221)	GW		X			X			X				X					X	
				0.5l glass bottle (ALE227)	GW									X					X		X		
26833173	MW3		0.00 - 0.00	Vial (ALE297)	GW												X						
				NaOH (ALE245)	GW							X											

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			26833127							26833156							26833173				
Customer Sample Reference			MW1							MW2							MW3				
AGS Reference																					
Depth (m)			0.00 - 0.00							0.00 - 0.00							0.00 - 0.00				
Container			0.5l glass bottle (ALE227)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Phosphate by Kone (w)	All	NDPs: 0 Tests: 10		X							X							X			
Suspended Solids	All	NDPs: 0 Tests: 10		X							X							X			
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 10	X							X							X				
Total EPH (aq)	All	NDPs: 0 Tests: 10	X							X							X				
Total Metals by ICP-MS	All	NDPs: 0 Tests: 10		X							X							X			
VOC MS (W)	All	NDPs: 0 Tests: 10							X							X					

26833226	MW6		0.00 - 0.00	HNO3 Filtered (ALE204)	GW		
				H2SO4 (ALE244)	GW		
				250ml BOD (ALE212)	GW		
				1lplastic (ALE221)	GW	X	X
26833211	MW5		0.00 - 0.00	0.5l glass bottle (ALE227)	GW	X	X
				Vial (ALE297)	GW	X	
				NaOH (ALE245)	GW		
				HNO3 Filtered (ALE204)	GW		
				H2SO4 (ALE244)	GW		
				250ml BOD (ALE212)	GW		
26833193	MW4		0.00 - 0.00	1lplastic (ALE221)	GW	X	X
				0.5l glass bottle (ALE227)	GW	X	X
				Vial (ALE297)	GW	X	
				NaOH (ALE245)	GW		
				HNO3 Filtered (ALE204)	GW		
				H2SO4 (ALE244)	GW		
				250ml BOD (ALE212)	GW		
26833173	MW3		0.00 - 0.00	1lplastic (ALE221)	GW	X	X
				0.5l glass bottle (ALE227)	GW	X	X
				Vial (ALE297)	GW	X	
				NaOH (ALE245)	GW		

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				26833226							26833244						26833263				26833282
Customer Sample Reference				MW6							MW7						S1				SPJ1
AGS Reference																					
Depth (m)				0.00 - 0.00							0.00 - 0.00						0.00 - 0.00				0.00 - 0.00
Container			NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	Vial (ALE297)	0.5l glass bottle (ALE227)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 10				X							X						X		
Ammonium Low	All	NDPs: 0 Tests: 10						X							X						X
Anions by Kone (w)	All	NDPs: 0 Tests: 10				X							X						X		
BOD Unfiltered	All	NDPs: 0 Tests: 10					X							X						X	
COD Unfiltered	All	NDPs: 0 Tests: 10				X							X						X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 10	X							X			X								
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10							X							X					
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 10			X							X						X			
Fluoride	All	NDPs: 0 Tests: 10				X							X						X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10		X							X						X				
Mercury Dissolved	All	NDPs: 0 Tests: 10							X							X					
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 10			X							X						X			
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 10			X							X						X			
pH Value	All	NDPs: 0 Tests: 10				X							X						X		
Phenols by HPLC (W)	All	NDPs: 0 Tests: 10						X							X						X

26833142	SPM2		0.00 - 0.00	Vial (ALE297)	GW									X						
				NaOH (ALE245)	GW						X									
				HNO3 Filtered (ALE204)	GW							X				X				
				H2SO4 (ALE244)	GW		X													X
				250ml BOD (ALE212)	GW				X											
				1lplastic (ALE221)	GW	X		X		X				X					X	
				0.5l glass bottle (ALE227)	GW								X				X	X		
26833282	SPJ1		0.00 - 0.00	Vial (ALE297)	GW									X						
				NaOH (ALE245)	GW						X									
				HNO3 Filtered (ALE204)	GW							X				X				

Validated

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			26833226	MW6		0.00 - 0.00	NaOH (ALE245)	GW
							Vial (ALE297)	GW
							0.5l glass bottle (ALE227)	GW
							1lplastic (ALE221)	GW
							250ml BOD (ALE212)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
			26833244	MW7		0.00 - 0.00	NaOH (ALE245)	GW
							Vial (ALE297)	GW
							0.5l glass bottle (ALE227)	GW
							1lplastic (ALE221)	GW
							250ml BOD (ALE212)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
			26833263	S1		0.00 - 0.00	Vial (ALE297)	GW
							0.5l glass bottle (ALE227)	GW
							1lplastic (ALE221)	GW
							250ml BOD (ALE212)	GW
							H2SO4 (ALE244)	GW
			26833282	SPJ1		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							1lplastic (ALE221)	GW
							250ml BOD (ALE212)	GW
							H2SO4 (ALE244)	GW
Phosphate by Kone (w)	All	NDPs: 0 Tests: 10						
				X				
				X				
				X				
Suspended Solids	All	NDPs: 0 Tests: 10						
				X				
				X				
				X				
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 10						
					X			
					X			
					X			
Total EPH (aq)	All	NDPs: 0 Tests: 10						
					X			
					X			
					X			
Total Metals by ICP-MS	All	NDPs: 0 Tests: 10						
				X				
				X				
				X				
VOC MS (W)	All	NDPs: 0 Tests: 10						
			X					
			X					

26833142	SPM2		0.00 - 0.00	Vial (ALE297)	GW												X
				NaOH (ALE245)	GW												
				HNO3 Filtered (ALE204)	GW												
				H2SO4 (ALE244)	GW												
				250ml BOD (ALE212)	GW												
				1lplastic (ALE221)	GW		X		X						X		
				0.5l glass bottle (ALE227)	GW						X		X				
26833282	SPJ1		0.00 - 0.00	Vial (ALE297)	GW												X
				NaOH (ALE245)	GW												
				HNO3 Filtered (ALE204)	GW												

Validated

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
			Sample Time	-	-	-	-	-	-
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
			SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
			Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		<2 #	375 #	54.5 #	16 #	11.8 #	346 #
Alkalinity, Total as CaCO3	<2 mg/l	TM043		205 #	215 #	50 #	6.5 #	43.5 #	120 #
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		<0.01 #	0.015 #	0.049 #	<0.01 #	<0.01 #	0.014 #
Fluoride	<0.5 mg/l	TM104		<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
COD, unfiltered	<7 mg/l	TM107		11.3 #	93.2 #	18.1 #	<7 #	<7 #	80 #
Antimony (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Arsenic (diss.filt)	<0.5 µg/l	TM152		1.66 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	2.12 #
Barium (diss.filt)	<0.2 µg/l	TM152		4.32 #	1.94 #	2.05 #	0.81 #	2.27 #	1.86 #
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Boron (diss.filt)	<10 µg/l	TM152		43.7 #	16.4 #	12.2 #	<10 #	21 #	11.7 #
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #	0.0895 #	<0.08 #	<0.08 #	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Cobalt (diss.filt)	<0.5 µg/l	TM152		<0.5 #	<0.5 #	3.97 #	<0.5 #	<0.5 #	1.24 #
Copper (diss.filt)	<0.3 µg/l	TM152		1.24 #	<0.3 #	0.875 #	1.11 #	1.22 #	<0.3 #
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #
Manganese (diss.filt)	<3 µg/l	TM152		558 #	47.8 #	1610 #	3.2 #	137 #	654 #
Phosphorus (tot.unfilt)	<20 µg/l	TM152		<20 2 #	223 2 #	86.9 2 #	36.4 2 #	32.2 2 #	165 2 #
Molybdenum (diss.filt)	<3 µg/l	TM152		<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Nickel (diss.filt)	<0.4 µg/l	TM152		3.2 #	<0.4 #	3.92 #	1.39 #	1.14 #	1.13 #
Selenium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Tellurium (diss.filt)	<2 µg/l	TM152		<2	<2	<2	<2	<2	<2
Thallium (diss.filt)	<2 µg/l	TM152		<2 #	<2 #	<2 #	<2 #	<2 #	<2 #
Uranium (diss.filt)	<0.5 µg/l	TM152		1.06 #	2.8 #	<0.5 #	<0.5 #	<0.5 #	0.739 #
Vanadium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc (diss.filt)	<1 µg/l	TM152		3.16 #	9.37 #	9.03 #	33.4 #	7.05 #	8.26 #
Tin (Diss.Filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Silver (diss.filt)	<0.5 µg/l	TM152		<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152		19.7 #	28.2 #	18 #	5.6 #	18.8 #	14.9 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		18.6 #	11.5 #	4.37 #	1.18 #	4.3 #	10 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152		6.55 #	1.55 #	1.71 #	0.429 #	0.946 #	0.828 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152		97 #	111 #	16 #	4.45 #	19.3 #	44.9 #
Iron (Dis.Filt)	<0.019 mg/l	TM152		<0.019 #	<0.019 #	0.139 #	<0.019 #	<0.019 #	<0.019 #

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
			Sample Time	.	.	.	.	.	.
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
			SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
			Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
			AGS Reference						
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172		<100 #	<500 #	<100 #	<100 #	<100 #	<500 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172		<100	<100	<100	<100	<100	<100
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
Sulphate	<2 mg/l	TM184		116 #	96.3 #	7.4 #	5.3 #	10.9 #	35.1 #
Chloride	<2 mg/l	TM184		32.9 #	47 #	34.6 #	8 #	38 #	30.3 #
Phosphate (Ortho as P)	<0.02 mg/l	TM184		<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #	<0.02 #
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		2.79 #	0.241 #	0.1 #	1.82 #	2.2 #	<0.1 #
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
pH	<1 pH Units	TM256		7.56 #	8.13 #	6.79 #	6.36 #	6.56 #	7.53 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM256		0.616 #	0.629 #	0.205 #	0.0688 #	0.235 #	0.352 #
Phenol	<0.002 mg/l	TM259		<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #
Cresols	<0.006 mg/l	TM259		<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #	<0.006 #
Xylenols	<0.008 mg/l	TM259		<0.008 #	<0.008 #	<0.008 #	<0.008 #	<0.008 #	<0.008 #
Phenols, Total Detected monohydric	<0.016 mg/l	TM259		<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
Aldrin	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
Isodrin	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
Endrin	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
o,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.05	<0.02	<0.02	<0.03	<0.04
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend
ISO17025 accredited.
M mCERTS accredited.
aq Aqueous / settled sample.
diss.filt Dissolved / filtered sample.
tot.unfilt Total / unfiltered sample.
* Subcontracted - refer to subcontractor report for accreditation status.
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F) Trigger breach confirmed
1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
			Sample Time	.	.	.	.	.	.
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
			SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
			Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
			AGS Reference						
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.1	<0.02	<0.02	<0.03	<0.04
p,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.05	<0.02	<0.02	<0.03	<0.04
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.05	<0.02	<0.02	<0.03	<0.04
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.05	<0.02	<0.02	<0.03	<0.04
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.02	<0.1	<0.04	<0.04	<0.06	<0.08
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.05	<0.01	<0.01	<0.015	<0.02
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.02	<0.02
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Phorate	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Diazinon	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Triallate	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Atrazine	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Simazine	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Malathion	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Fenthion	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
			Sample Time	.	.	.	.	.	.
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
			SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
			Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
			AGS Reference						
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Parathion	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Ethion	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Triazophos	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Phosalone	<0.01 µg/l	TM344		<0.01	<0.05	<0.01	<0.01	<0.01	<0.02
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.1	<0.02	<0.02	<0.02	<0.04
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.1	<0.02	<0.02	<0.02	<0.04

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	-	-	-	-		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		3.25 #	2.8 #	7.2 #	<2 #		
Alkalinity, Total as CaCO3	<2 mg/l	TM043		100 #	320 #	60 #	60 #		
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1 #	<1 #	<1 #		
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.051 #	2.45 #	<0.01 #	0.036 #		
Fluoride	<0.5 mg/l	TM104		<0.5 #	<0.5 #	<0.5 #	<0.5 #		
COD, unfiltered	<7 mg/l	TM107		<7 #	10.5 #	7 #	<7 #		
Antimony (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #		
Arsenic (diss.filt)	<0.5 µg/l	TM152		3.27 #	0.58 #	<0.5 #	0.753 #		
Barium (diss.filt)	<0.2 µg/l	TM152		4.59 #	4.48 #	0.67 #	2.42 #		
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1 #	<0.1 #	<0.1 #	<0.1 #		
Boron (diss.filt)	<10 µg/l	TM152		13 #	66.8 #	16.6 #	18.7 #		
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #	0.0926 #	<0.08 #		
Chromium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #		
Cobalt (diss.filt)	<0.5 µg/l	TM152		1.41 #	0.953 #	<0.5 #	<0.5 #		
Copper (diss.filt)	<0.3 µg/l	TM152		<0.3 #	0.666 #	58.4 #	2.62 #		
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	<0.2 #	0.289 #	<0.2 #		
Manganese (diss.filt)	<3 µg/l	TM152		1670 #	1360 #	8.42 #	8.67 #		
Phosphorus (tot.unfilt)	<20 µg/l	TM152		33 2 #	166 2 #	34.4 2 #	76.7 2 #		
Molybdenum (diss.filt)	<3 µg/l	TM152		<3 #	<3 #	<3 #	<3 #		
Nickel (diss.filt)	<0.4 µg/l	TM152		1.19 #	2.92 #	2.34 #	<0.4 #		
Selenium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	1.18 #		
Tellurium (diss.filt)	<2 µg/l	TM152		<2	<2	<2	<2		
Thallium (diss.filt)	<2 µg/l	TM152		<2 #	<2 #	<2 #	<2 #		
Uranium (diss.filt)	<0.5 µg/l	TM152		<0.5 #	2.17 #	<0.5 #	<0.5 #		
Vanadium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #		
Zinc (diss.filt)	<1 µg/l	TM152		2.83 #	11.5 #	522 #	27.2 #		
Tin (Diss.Filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #		
Silver (diss.filt)	<0.5 µg/l	TM152		<0.5 #	<0.5 #	<0.5 #	<0.5 #		
Sodium (Dis.Filt)	<0.076 mg/l	TM152		16.1 #	22.1 #	12.6 #	13.4 #		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		6.79 #	19.9 #	4.08 #	3.43 #		
Potassium (Dis.Filt)	<0.2 mg/l	TM152		0.736 #	11.8 #	0.77 #	14 #		
Calcium (Dis.Filt)	<0.2 mg/l	TM152		37.1 #	139 #	24.2 #	31.2 #		
Iron (Dis.Filt)	<0.019 mg/l	TM152		1.07 #	0.0225 #	<0.019 #	<0.019 #		

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	.	.	.	.		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172		<100 #	<100 #	<100 #	<100 #		
Total EPH (C6-C40) (aq)	<100 µg/l	TM172		<100	<100	<100	<100		
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #	<0.01 #	<0.01 #		
Sulphate	<2 mg/l	TM184		17 #	122 #	13 #	20.2 #		
Chloride	<2 mg/l	TM184		31.6 #	36 #	25.8 #	29.6 #		
Phosphate (Ortho as P)	<0.02 mg/l	TM184		<0.02 #	0.126 #	<0.02 #	0.0555 #		
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.215 #	3.62 #	2.37 #	8.98 #		
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 2 #	<0.05 #	<0.05 #		
pH	<1 pH Units	TM256		7.55 #	7.51 #	6.54 #	7.12 #		
Conductivity @ 20 deg.C	<0.02 mS/cm	TM256		0.304 #	0.788 #	0.216 #	0.297 #		
Phenol	<0.002 mg/l	TM259		<0.002 #	<0.002 #	<0.002 #	<0.002 #		
Cresols	<0.006 mg/l	TM259		<0.006 #	<0.006 #	<0.006 #	<0.006 #		
Xylenols	<0.008 mg/l	TM259		<0.008 #	<0.008 #	<0.008 #	<0.008 #		
Phenols, Total Detected monohydric	<0.016 mg/l	TM259		<0.016 #	<0.016 #	<0.016 #	<0.016 #		
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
Aldrin	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
Isodrin	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
Endrin	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
o,p'-DDT	<0.01 µg/l	TM343		<0.02	<0.03	<0.02	<0.02		
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	.	.	.	.		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.03	<0.02	<0.02		
p,p'-DDT	<0.01 µg/l	TM343		<0.02	<0.03	<0.02	<0.02		
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.03	<0.02	<0.02		
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.03	<0.02	<0.02		
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.04	<0.06	<0.04	<0.04		
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.015	<0.01	<0.01		
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.02		
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Phorate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Diazinon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triallate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Atrazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Simazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Malathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Fenthion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	.	.	.	.		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Parathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Ethion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triazophos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Phosalone	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.02	<0.02	<0.02		
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.02	<0.02	<0.02		

Validated

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

GRO by GC-FID (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
			Sample Time	-	-	-	-	-	-
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
			SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
			Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
			AGS Reference						
GRO >C5-C10	<10 µg/l	TM245		<10	<10	<10	<10	<10 3	<10
EPH (C6-C10)	<100 µg/l	TM245		<100	<100	<100	<100	<100 3	<100

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

GRO by GC-FID (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	-	-	-	-		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
GRO >C5-C10	<10 µg/l	TM245		<10	<10	<10	<10		
EPH (C6-C10)	<100 µg/l	TM245		<100	<100	<100	<100		

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

SVOC MS (W) - Aqueous

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
			Sample Time	-	-	-	-	-	-
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
			SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
			Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<4	<1	<1	<1	<1
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<4	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
4-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<4	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Acenaphthylene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Acenaphthene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Anthracene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 #	<8 #	<2 #	<2 #	<2 #	<2 #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
			Sample Time	.	.	.	.	.	.
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
			SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
			Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
			AGS Reference						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Carbazole (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Chrysene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Dibenzofuran (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Diethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5 #	<20 #	<5 #	<5 #	<5 #	<5 #
Fluoranthene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Fluorene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<4	<1	<1	<1	<1
Phenol (aq)	<1 µg/l	TM176		<1	<4	<1	<1	<1	<1
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Hexachloroethane (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Nitrobenzene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Naphthalene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Isophorone (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<4	<1	<1	<1	<1
Phenanthrene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #
Pyrene (aq)	<1 µg/l	TM176		<1 #	<4 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

SVOC MS (W) - Aqueous

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	-	-	-	-		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1		
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1		
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
4-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1		
Azobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Acenaphthylene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Acenaphthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 #	<2 #	<2 #	<2 #		
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

SVOC MS (W) - Aqueous

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	.	.	.	.		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Carbazole (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Chrysene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Dibenzofuran (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Diethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5 #	<5 #	<5 #	<5 #		
Fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Fluorene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1		
Phenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1		
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Hexachloroethane (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Nitrobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Naphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Isophorone (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<1	<1	<1		
Phenanthrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		
Pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<1 #	<1 #		

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
			Sample Time	-	-	-	-	-	-
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
			SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
			Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
			AGS Reference						
Dibromofluoromethane**	%	TM208		110	108	111	107	108 3	110
Toluene-d8**	%	TM208		93.7	99.8	99.4	99.4	98.9 3	98.3
4-Bromofluorobenzene**	%	TM208		90	97.7	97.4	97.1	97.1 3	90.7
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Dichloromethane	<3 µg/l	TM208		<3 #	<7.5 #	<8.5 #	<8.5 #	<8.5 3 #	<7.5 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1 3	<1
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 3 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

VOC MS (W)

Results Legend	Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
# ISO17025 accredited.							
M mCERTS accredited.							
aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
tot.unfilt Total / unfiltered sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
* Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	.	.	.	.	.	.
	Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
(F) Trigger breach confirmed	SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
1-4+§@ Sample deviation (see appendix)	Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
	AGS Reference						

Component	LOD/Units	Method						
Tetrachloroethene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Chlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Ethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
o-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Styrene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Bromoform	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Bromobenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Propylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1		<1		<1	<1	<1 3	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
Naphthalene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1 #	<1 #	<1 3 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1		<1		<1	<1	<1 3	<1

Validated

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

VOC MS (W)

Results Legend		Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
tot.unfilt	Total / unfiltered sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022	05/09/2022
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	.	.	.	.	.	.
		Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022	02/09/2022
		SDG Ref	220906-43	220906-43	220906-43	220906-43	220906-43	220906-43
(F)	Trigger breach confirmed	Lab Sample No.(s)	26833127	26833156	26833173	26833193	26833211	26833226
1-4+§@	Sample deviation (see appendix)	AGS Reference						

Component	LOD/Units	Method						
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<5	<5 3	<5

13:19:53 15/09/2022

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	-	-	-	-		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
Dibromofluoromethane**	%	TM208		108	109	107	110		
Toluene-d8**	%	TM208		99	99.5	99.5	99.2		
4-Bromofluorobenzene**	%	TM208		97.3	96.9	97.8	97.3		
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dichloromethane	<3 µg/l	TM208		<7.5 #	<8 #	<8.5 #	<8.5 #		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

VOC MS (W)

Results Legend
- # ISO17025 accredited.
- M mCERTS accredited.
- aq Aqueous / settled sample.
- diss.filt Dissolved / filtered sample.
- tot.unfilt Total / unfiltered sample.
- * Subcontracted - refer to subcontractor report for accreditation status.
- ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
- (F) Trigger breach confirmed
- 1-4+§@ Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	.	.	.	.		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1		

Validated

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	MW7	S1	SPJ1	SPM2		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	05/09/2022	05/09/2022	05/09/2022	05/09/2022		
			Sample Time	.	.	.	.		
			Date Received	02/09/2022	02/09/2022	02/09/2022	02/09/2022		
			SDG Ref	220906-43	220906-43	220906-43	220906-43		
			Lab Sample No.(s)	26833244	26833263	26833282	26833142		
			AGS Reference						
Sum of BTEX	<5 µg/l	TM208		<5	<5	<5	<5		

Table of Results - Appendix

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 220906-43 **Report Number:** 661324 **Superseded Report:**
Client Ref.: Benduff Landfill **Location:** Benduff

Test Completion Dates

Lab Sample No(s)	26833127	26833156	26833173	26833193	26833211	26833226	26833244	26833263	26833282	26833142
Customer Sample Ref.	MW1	MW2	MW3	MW4	MW5	MW6	MW7	S1	SPJ1	SPM2
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Alkalinity as CaCO3	07-Sep-2022	07-Sep-2022	07-Sep-2022	08-Sep-2022	08-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022
Ammonium Low	12-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	12-Sep-2022	08-Sep-2022	12-Sep-2022	12-Sep-2022	08-Sep-2022
Anions by Kone (w)	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022
BOD Unfiltered	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022
COD Unfiltered	10-Sep-2022	10-Sep-2022	10-Sep-2022	11-Sep-2022	10-Sep-2022	12-Sep-2022	11-Sep-2022	11-Sep-2022	10-Sep-2022	11-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022
Dissolved Metals by ICP-MS	14-Sep-2022	14-Sep-2022	14-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	12-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022
EPH (DRO) (C10-C40) Aqueous (W)	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	09-Sep-2022
Fluoride	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022
GRO by GC-FID (W)	13-Sep-2022	12-Sep-2022	08-Sep-2022	12-Sep-2022	12-Sep-2022	08-Sep-2022	12-Sep-2022	08-Sep-2022	12-Sep-2022	08-Sep-2022
Mercury Dissolved	08-Sep-2022	08-Sep-2022	08-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022
Pesticides (Suite I) by GCMS	13-Sep-2022	13-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022
Pesticides (Suite II) by GCMS	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022
pH Value	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022
Phenols by HPLC (W)	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022	09-Sep-2022
Phosphate by Kone (w)	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022	07-Sep-2022
Suspended Solids	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	12-Sep-2022	13-Sep-2022	13-Sep-2022	12-Sep-2022
SVOC MS (W) - Aqueous	13-Sep-2022	14-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	15-Sep-2022	13-Sep-2022
Total EPH (aq)	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	13-Sep-2022	09-Sep-2022
Total Metals by ICP-MS	09-Sep-2022	09-Sep-2022	09-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022
VOC MS (W)	13-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022	08-Sep-2022

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.