



Analysis Report

Client: BPS Design Consultants Limited
Seafields
Dodwell Lane
Bursledon
Southampton
SO31 1DJ

Project: WAC & Digest

Sample Details: 2 soil samples for Waste Acceptance Criteria (WAC) analysis

Date report issued: 17 October 2024 Issue Number: 1

Number of pages (including this one): 6

Accreditation

All analytes marked ^M have been analysed under the scope of our MCERTS accreditation

All analytes marked ^U have been analysed under the scope of our UKAS accreditation

All analytes marked ^m have been subcontracted and analysed under the scope of their MCERTS accreditation

All analytes marked ^u have been subcontracted and analysed under the scope of their UKAS accreditation

All results labelled with an asterisk (*) are non-conforming due to incorrect sample storage or handling. The result may be invalid.

All comments are beyond the scope of our accreditation.

The results shown in this test report specifically refer to the sample(s) tested as received unless otherwise stated.

This report shall not be reproduced except in full, without written approval of Envirochem.

Unless sampled by Envirochem, all sample details supplied by client.

Uncertainty of measurement is not accounted for in reported results

Signed on behalf of Envirochem by an authorised signatory

Dan Dockree

Authorised Signatory



LANDFILL WASTE ACCEPTANCE CRITERIA

Client:	BPS Design Consultants Limited	Date Sampled:	14 October 2024
Site:	Ropley, Botley Road	Date Received:	14 October 2024
Sample Description:	Soil - Clay Loam	Submitted by:	Client
Sample Details:	Sample 1	Date Analysis Started:	14 October 2024
Sampled By:	Client	Date Completed:	17 October 2024

Table 1: parameters determined on whole sample (all results in mg/kg dry wt except where stated)

Analyte	Method	Sample Lab Ref: Job: 24-44620 Samp. 143876	Landfill acceptance criteria for Inert waste	Stable non-reactive hazardous waste in non-hazardous	Hazardous waste landfill
Mineral oil (C10 - C40)	6.04	< 50.0	500	---	---
Loss on ignition (%)	5.01, 6.09	3.1	---	---	10 %
Total Organic Carbon (%)	6.07	2.6	3 %	5 %	6 %
BTEX	6.11	< 1.0	6	---	---
PCBs (7 congeners)	6.06	< 1.0	1	---	---
PAHs	6.05	6.8	100	---	---
% water (105°C)	6.01	19.2	---	---	---
% of material > 4mm	5.01	10.6	---	---	---

Table 2: parameters determined on leachate (all results in mg leached per kg dry material)

Analyte	Method	Sample Lab Ref: Job: 24-44620 Samp. 143876	Landfill acceptance criteria for Inert waste	Stable non-reactive hazardous waste in non-hazardous	Hazardous waste landfill
Arsenic ^U	5.04, 6.08	0.1	0.5	2	25
Antimony	5.04, 6.08	< 0.06	0.06	0.7	5
Barium ^U	5.04, 6.08	< 2.0	20	100	300
Cadmium ^U	5.04, 6.08	< 0.04	0.04	1	5
Chromium (total) ^U	5.04, 6.08	< 0.5	0.5	10	70
Copper ^U	5.04, 6.08	< 0.5	2	50	100
Lead ^U	5.04, 6.08	0.9	0.5	10	50
Mercury ^U	5.04, 6.08	< 0.01	0.01	0.2	2
Molybdenum	5.04, 6.08	< 0.5	0.5	10	30
Nickel ^U	5.04, 6.08	< 0.2	0.4	10	40
Selenium	5.04, 6.08	< 0.1	0.1	0.5	7
Zinc ^U	5.04, 6.08	2	4	50	200
Sulphate	5.04, 6.02	120	1000	20000	50000
Fluoride	5.04, 6.02	4.6	10	150	500
Chloride	5.04, 6.02	18.0	800	15000	25000
Phenol index	5.04, 6.19	< 1.0	1	---	---
pH (pH units)	5.04, 6.03	6.56	To be set	> 6	---
Total dissolved solids	5.04, 6.12	51	4000	60000	100000
Dissolved organic carbon	5.04, 6.07	230	500	800	1000

All analytes marked^U have been analysed under the scope of our UKAS accreditation
The limits are taken from BS EN 12457-3 for a liquid:solid ratio of 10:1

Table 3: parameters determined on aqua regia digest (all results in mg/kg dry weight)

Analyte	Method	Sample Lab Ref: Job: 24-44620 Samp. 143876	Soil Guideline Values		
			Residential	Allotment	Commercial
Arsenic ^M	5.18, 6.08	8.3	37†	43 †	640 †
Antimony	5.18, 6.08	< 1	—	—	—
Barium ^M	5.18, 6.08	57	---	---	---
Cadmium ^M	5.18, 6.08	1.0	11†	1.9†	190†
Chromium (total) ^M	5.18, 6.08	12	—	—	—
Cobalt ^M	5.18, 6.08	4	—	—	—
Copper ^M	5.18, 6.08	26	2400†	520†	68000†
Mercury ^M	5.18, 6.08	< 0.2	1.2 †	21†	25.8†
Molybdenum ^M	5.18, 6.08	< 1	---	—	—
Nickel ^M	5.18, 6.08	7	180 †	230 †	980 †
Lead ^M	5.18, 6.08	111	210 ††	84 ††	1100 ††
Selenium ^M	5.18, 6.08	< 1	250 †	88 †	12000 †
Thallium	5.18, 6.08	< 0.5	—	—	—
Vanadium	5.18, 6.08	25	410 †	91 †	9000 †
Zinc ^M	5.18, 6.08	146	3700 ††	620 ††	73000 ††

All analytes marked ^M have been analysed under the scope of our UKAS/Mcerts accreditation

Percentage of soil >2mm not	5.01	12.4
-----------------------------	------	------

Limits labelled '†' are LQM/CIEH S4ULs (suitable 4 use levels) taken from The LQM/CIEH S4ULs for Human Risk Assessment published by Land Quality Press 2015

Limits labelled '††' are provisional C4SLs (Category 4 Screening Levels) taken from Appendix H Provisional C4SLs for Lead, these are based upon soil guideline values published by DEFRA and the HPA Compendium of Chemical Hazards document



LANDFILL WASTE ACCEPTANCE CRITERIA

Client:	BPS Design Consultants Limited	Date Sampled:	14 October 2024
Site:	Ropley, Botley Road	Date Received:	14 October 2024
Sample Description:	Soil - Clay Loam	Submitted by:	Client
Sample Details:	Sample 2	Date Analysis Started:	14 October 2024
Sampled By:	Client	Date Completed:	17 October 2024

Table 1: parameters determined on whole sample (all results in mg/kg dry wt except where stated)

Analyte	Method	Sample Lab Ref: Job: 24-44620 Samp. 143877	Landfill acceptance criteria for Inert waste	Stable non-reactive hazardous waste in non-hazardous	Hazardous waste landfill
Mineral oil (C10 - C40)	6.04	< 50.0	500	---	---
Loss on ignition (%)	5.01, 6.09	3.4	---	---	10 %
Total Organic Carbon (%)	6.07	2.8	3 %	5 %	6 %
BTEX	6.11	< 1.0	6	---	---
PCBs (7 congeners)	6.06	< 1.0	1	---	---
PAHs	6.05	6.6	100	---	---
% water (105°C)	6.01	19.3	---	---	---
% of material > 4mm	5.01	15.8	---	---	---

Table 2: parameters determined on leachate (all results in mg leached per kg dry material)

Analyte	Method	Sample Lab Ref: Job: 24-44620 Samp. 143877	Landfill acceptance criteria for Inert waste	Stable non-reactive hazardous waste in non-hazardous	Hazardous waste landfill
Arsenic ^U	5.04, 6.08	0.2	0.5	2	25
Antimony	5.04, 6.08	< 0.06	0.06	0.7	5
Barium ^U	5.04, 6.08	< 2.0	20	100	300
Cadmium ^U	5.04, 6.08	< 0.04	0.04	1	5
Chromium (total) ^U	5.04, 6.08	< 0.5	0.5	10	70
Copper ^U	5.04, 6.08	< 0.5	2	50	100
Lead ^U	5.04, 6.08	0.9	0.5	10	50
Mercury ^U	5.04, 6.08	< 0.01	0.01	0.2	2
Molybdenum	5.04, 6.08	< 0.5	0.5	10	30
Nickel ^U	5.04, 6.08	< 0.2	0.4	10	40
Selenium	5.04, 6.08	< 0.1	0.1	0.5	7
Zinc ^U	5.04, 6.08	2	4	50	200
Sulphate	5.04, 6.02	125	1000	20000	50000
Fluoride	5.04, 6.02	4.7	10	150	500
Chloride	5.04, 6.02	23.0	800	15000	25000
Phenol index	5.04, 6.19	< 1.0	1	---	---
pH (pH units)	5.04, 6.03	6.33	To be set	> 6	---
Total dissolved solids	5.04, 6.12	66	4000	60000	100000
Dissolved organic carbon	5.04, 6.07	288	500	800	1000

All analytes marked^U have been analysed under the scope of our UKAS accreditation
The limits are taken from BS EN 12457-3 for a liquid:solid ratio of 10:1



Table 3: parameters determined on aqua regia digest (all results in mg/kg dry weight)

Analyte	Method	Sample Lab Ref: Job: 24-44620 Samp. 143877	Soil Guideline Values		
			Residential	Allotment	Commercial
Arsenic ^M	5.18, 6.08	9.3	37†	43 †	640 †
Antimony	5.18, 6.08	< 1	—	—	—
Barium ^M	5.18, 6.08	61	---	---	---
Cadmium ^M	5.18, 6.08	0.8	11†	1.9†	190†
Chromium (total) ^M	5.18, 6.08	13	—	—	—
Cobalt ^M	5.18, 6.08	4	—	—	—
Copper ^M	5.18, 6.08	31	2400†	520†	68000†
Mercury ^M	5.18, 6.08	< 0.2	1.2 †	21†	25.8†
Molybdenum ^M	5.18, 6.08	< 1	---	—	—
Nickel ^M	5.18, 6.08	12	180 †	230 †	980 †
Lead ^M	5.18, 6.08	113	210 ††	84 ††	1100 ††
Selenium ^M	5.18, 6.08	< 1	250 †	88 †	12000 †
Thallium	5.18, 6.08	< 0.5	—	—	—
Vanadium	5.18, 6.08	28	410 †	91 †	9000 †
Zinc ^M	5.18, 6.08	148	3700 ††	620 ††	73000 ††

All analytes marked ^M have been analysed under the scope of our UKAS/Mcerts accreditation

Percentage of soil >2mm not	5.01	17.0
-----------------------------	------	------

Limits labelled '†' are LQM/CIEH S4ULs (suitable 4 use levels) taken from The LQM/CIEH S4ULs for Human Risk Assessment published by Land Quality Press 2015

Limits labelled '††' are provisional C4SLs (Category 4 Screening Levels) taken from Appendix H Provisional C4SLs for Lead, these are based upon soil guideline values published by DEFRA and the HPA Compendium of Chemical Hazards document



Method Summaries:-

- 5.01 - Soil sample pre-treatment, air-drying, crushing, sieving and subdividing (BS ISO 11464:2006)
- 5.02 - Solvent extraction (acetone/heptane) of soils for hydrocarbon analyses (BS 16703:2004)
- 5.04 - Aqueous leaching of soil and waste samples (BS 12457-2:2002)
- 5.05 - Soil texture classification
- 5.06 - Aqueous extraction of dried soils/sludges/waste in a ration of 2.5:1 (BS 1377-3:1990 Section 9)
- 5.18 - Digestion of solid samples in aqua-regia using hot-block for metals analysis (EPA 200.2 rev.2.8)
- 6.01 - Gravimetric determination of water content of solid samples by oven drying at 105°C.(BS 7755-3.1:1995)
- 6.02 - Determination of anions by ion chromatography (EPA 300.1 1999)
- 6.03 - Determination of pH in aqueous samples and extracts by pH electrode.
- 6.04 - Determination of petroleum hydrocarbons by Gas chromatography of solvent extracts (FID) (BS 16703:2004)
- 6.05 - Determination of poly-aromatic- hydrocarbons by gas chromatography linked mass spectrometry (GC-MS)
- 6.06 - Determination of poly-chlorinated-biphenyls (PCBs) by gas chromatography linked mass spectrometry (GC-MS)
- 6.07 - Determination of dissolved organic carbon (DOC) and total organic carbon (TOC) by furnace combustion and infra-red detection of carbon dioxide.
- 6.08 - Determination of metals in digests and leachates by inductively coupled plasma optical emission spectrophotometry (ICP-OES) (EPA 6010C)

Deviating Codes:

- A - No sample date provided
- B - No Sample time provided (water samples only)
- C - Incorrect sample container
- D - Incorrect storage temperature
- E - Insufficient sample
- F - Time from sampling to receipt exceeded
- G - Time from sampling to analysis exceeded
- P - No sample preservative (for bacti samples only)

