

Certificate of Analysis Landfill Waste Acceptance Criteria (WAC) (10:1)

Certificate Number : 18-09563-Issue 1-Page: 1

Report Fao: GEO RESULTS
Site Address: Poole Park Minature Railway
Customer Order No: 18-97284
Date of Sampling: 01/10/2018
Date Received: 15/10/2018
Report Date: 26/10/2018

Please find your certificates of test attached for your samples received in the laboratory on 15/10/2018 under our laboratory reference 18-09563.

Remarks:

None

Results reviewed by:



Eoin Byrne Technical Supervisor

Results approved by:



David Redfern Technical Supervisor

*Any opinions or interpretations indicated are outside the scope of our UKAS accreditation.
This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.
Excel copies of reports are valid only when accompanied by this PDF certificate.
Client's Sample Description / ACS Material Description are noted for reference only.*

Head Office

Unit 14B
Blackhill Road West
Holton Heath Trading Park
Poole
Dorset BH16 6LE

Tel 01202 628680

Fax 01202 628642

Registered Office

Unit 14B
Blackhill Road West
Holton Heath Trading Park
Poole
Dorset BH16 6LE
ACS Environmental Testing Limited
Registered in England and
Wales No. 6000065

**Quality Testing & Materials Consultancy
to the
Construction Industry**



ACSE Sample Number 38167
Sample ID 426801 - 18-97284
Clients Sample Ref. TP01
Material Source In Situ
Location / Sample Depth (m) 0.23-0.42m
Time Sampled
Date Sampled 01/10/2018
Sample Deviating Codes ef
Client's Sample Description
ACS Testing Material Description Brown sandy GRAVEL
Principal Matrix (as received) GRAVEL

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	93.3	g	Volume of Leachant Used (L10)	0.897	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	3.6	%	Volume of Eluate (VE10)	0.853	litres
Dry Matter Content (DR)	96.5	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	1.55
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	2.1
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	MT/ACSE/104	*	Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*	As received	363
PAHs (mg/kg)	MT/ACSE/106	*f	Air dried at 30 °C	33.3
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	10.6

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	11.0	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	52.20	
Arsenic	MT/ACSE/205	*	< 0.003	< 0.0300
Barium	MT/ACSE/205	*	0.0909	0.909
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.021	0.207
Copper	MT/ACSE/205	*	0.050	0.499
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	0.0017	0.017
Nickel	MT/ACSE/205	*	0.0030	0.030
Lead	MT/ACSE/205	*	< 0.004	< 0.040
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	< 0.006	< 0.060
Zinc	MT/ACSE/205	*	< 0.002	< 0.020
Chloride	MT/ACSE/204	*	8.59	85.92
Fluoride	MT/ACSE/204	*	< 0.01	< 0.050
Sulphate	MT/ACSE/204	*	8.03	80.26
Total dissolved solids	MT/ACSE/304	*	170	1700
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	7.81	78.10

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.

Eluates prepared in accordance with BS EN 12457-3:2002*

ACSE Sample Number 38169
Sample ID 426803 - 18-97284
Clients Sample Ref. TP02
Material Source In Situ
Location / Sample Depth (m) 0.21-0.63m
Time Sampled
Date Sampled 01/10/2018
Sample Deviating Codes ef
Client's Sample Description
ACS Testing Material Description Brown sandy GRAVEL
Principal Matrix (as received) GRAVEL

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	93.8	g	Volume of Leachant Used (L10)	0.896	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	4.2	%	Volume of Eluate (VE10)	0.847	litres
Dry Matter Content (DR)	96.0	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	1.82
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	2.7
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	MT/ACSE/104	*	Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*	As received	1000
PAHs (mg/kg)	MT/ACSE/106	*f	Air dried at 30 °C	59.0
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	10.6

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	10.7	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	23.10	
Arsenic	MT/ACSE/205	*	0.006	0.0590
Barium	MT/ACSE/205	*	0.108	1.083
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.007	0.068
Copper	MT/ACSE/205	*	0.035	0.351
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	0.0037	0.037
Nickel	MT/ACSE/205	*	0.0053	0.053
Lead	MT/ACSE/205	*	< 0.004	< 0.040
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	< 0.006	< 0.060
Zinc	MT/ACSE/205	*	< 0.002	< 0.020
Chloride	MT/ACSE/204	*	7.78	77.80
Fluoride	MT/ACSE/204	*	< 0.01	< 0.050
Sulphate	MT/ACSE/204	*	15.69	156.9
Total dissolved solids	MT/ACSE/304	*	165	1650
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	19.8	197.9

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.

Eluates prepared in accordance with BS EN 12457-3:2002*

ACSE Sample Number 38171
Sample ID 426805 - 18-97284
Clients Sample Ref. WS05
Material Source In Situ
Location / Sample Depth (m) 0.00-0.66m
Time Sampled
Date Sampled 01/10/2018
Sample Deviating Codes ef
Client's Sample Description
ACS Testing Material Description Brown gravelly silty SAND
Principal Matrix (as received) SILT

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	96.5	g	Volume of Leachant Used (L10)	0.894	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	7.2	%	Volume of Eluate (VE10)	0.861	litres
Dry Matter Content (DR)	93.3	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	1.49
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	3.2
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	MT/ACSE/104	*	Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*#	As received	256
PAHs (mg/kg)	MT/ACSE/106	*#f	Air dried at 30 °C	134
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	7.3

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	9.2	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	6.59	
Arsenic	MT/ACSE/205	*	< 0.003	< 0.0300
Barium	MT/ACSE/205	*	0.0800	0.800
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.002	0.024
Copper	MT/ACSE/205	*	0.022	0.219
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	< 0.0010	< 0.010
Nickel	MT/ACSE/205	*	< 0.0008	< 0.008
Lead	MT/ACSE/205	*	< 0.004	< 0.040
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	0.007	0.071
Zinc	MT/ACSE/205	*	0.020	0.200
Chloride	MT/ACSE/204	*	< 3.00	< 30.00
Fluoride	MT/ACSE/204	*	0.22	2.172
Sulphate	MT/ACSE/204	*	4.66	46.62
Total dissolved solids	MT/ACSE/304	*	70	700.0
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	13.9	139.2

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.

Eluates prepared in accordance with BS EN 12457-3:2002*

ACSE Sample Number 38173
Sample ID 426807 - 18-97284
Clients Sample Ref. WS07
Material Source In Situ
Location / Sample Depth (m) 0.08-0.32m
Time Sampled
Date Sampled 01/10/2018
Sample Deviating Codes ef
Client's Sample Description
ACS Testing Material Description Brown gravelly SAND
Principal Matrix (as received) SAND

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	93.4	g	Volume of Leachant Used (L10)	0.897	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	3.7	%	Volume of Eluate (VE10)	0.851	litres
Dry Matter Content (DR)	96.4	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	0.95
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	2.2
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	IHP-GCMS		Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*#	As received	384
PAHs (mg/kg)	MT/ACSE/106	*#f	Air dried at 30 °C	19.6
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	6.7

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	8.7	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	14.54	
Arsenic	MT/ACSE/205	*	< 0.003	< 0.0300
Barium	MT/ACSE/205	*	0.102	1.021
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.003	0.035
Copper	MT/ACSE/205	*	< 0.008	< 0.080
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	0.0012	0.012
Nickel	MT/ACSE/205	*	0.0019	0.019
Lead	MT/ACSE/205	*	< 0.004	< 0.040
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	< 0.006	< 0.060
Zinc	MT/ACSE/205	*	< 0.002	< 0.020
Chloride	MT/ACSE/204	*	< 3.00	< 30.00
Fluoride	MT/ACSE/204	*	0.19	1.897
Sulphate	MT/ACSE/204	*	17.97	179.7
Total dissolved solids	MT/ACSE/304	*	130	1300
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	7.99	79.90

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

 Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.

Eluates prepared in accordance with BS EN 12457-3:2002*

ACSE Sample Number 38174
Sample ID 426808 - 18-97284
Clients Sample Ref. WS07
Material Source In Situ
Location / Sample Depth (m) 0.47-0.74m
Time Sampled
Date Sampled 01/10/2018
Sample Deviating Codes ef
Client's Sample Description
ACS Testing Material Description Dark brown mottled dark grey sandy PEAT
Principal Matrix (as received) PEAT

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	182.3	g	Volume of Leachant Used (L10)	0.808	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	103	%	Volume of Eluate (VE10)	0.795	litres
Dry Matter Content (DR)	49.4	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	4.34
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	22
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	IHP-GCMS		Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*	As received	114
PAHs (mg/kg)	MT/ACSE/106	*f	Air dried at 30 °C	5.63
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	5.7

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	8.5	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	32.60	
Arsenic	MT/ACSE/205	*	< 0.003	< 0.0300
Barium	MT/ACSE/205	*	0.446	4.459
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.004	0.044
Copper	MT/ACSE/205	*	< 0.008	< 0.080
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	< 0.0010	< 0.010
Nickel	MT/ACSE/205	*	0.0016	0.016
Lead	MT/ACSE/205	*	< 0.004	< 0.040
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	0.016	0.161
Zinc	MT/ACSE/205	*	0.055	0.548
Chloride	MT/ACSE/204	*	9.96	99.58
Fluoride	MT/ACSE/204	*	0.18	1.810
Sulphate	MT/ACSE/204	*	137.9	1379
Total dissolved solids	MT/ACSE/304	*	220	2200
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	18.5	185.0

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.

Eluates prepared in accordance with BS EN 12457-3:2002*

Certificate No. 18-09563-Issue 1-Page: 7
Site Address Poole Park Minature Railway



ACSE Sample Number 38176
Sample ID 426810 - 18-97284
Clients Sample Ref. TP09
Material Source In Situ
Location / Sample Depth (m) 0.00-0.39m
Time Sampled
Date Sampled 01/10/2018
Sample Deviating Codes ef
Client's Sample Description
ACS Testing Material Description Brown gravelly silty SAND
Principal Matrix (as received) SILT

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	93.2	g	Volume of Leachant Used (L10)	0.897	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	3.6	%	Volume of Eluate (VE10)	0.843	litres
Dry Matter Content (DR)	96.6	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	2.03
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	7.2
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	MT/ACSE/104	*	Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*#	As received	< 50.0
PAHs (mg/kg)	MT/ACSE/106	*#f	Air dried at 30 °C	11.4
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	6.6

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	8.7	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	6.85	
Arsenic	MT/ACSE/205	*	< 0.003	< 0.0300
Barium	MT/ACSE/205	*	0.0970	0.970
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.003	0.030
Copper	MT/ACSE/205	*	0.026	0.257
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	0.0021	0.021
Nickel	MT/ACSE/205	*	0.0021	0.021
Lead	MT/ACSE/205	*	0.014	0.137
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	< 0.006	< 0.060
Zinc	MT/ACSE/205	*	0.010	0.095
Chloride	MT/ACSE/204	*	3.83	38.28
Fluoride	MT/ACSE/204	*	0.12	1.173
Sulphate	MT/ACSE/204	*	10.88	108.8
Total dissolved solids	MT/ACSE/304	*	45	450.0
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	10.8	108.2

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.

Eluates prepared in accordance with BS EN 12457-3:2002*

ACSE Sample Number 38178
Sample ID 426812 - 18-97284
Clients Sample Ref. TP11
Material Source In Situ
Location / Sample Depth (m) 0.00-0.21m
Time Sampled
Date Sampled 01/10/2018
Sample Deviating Codes ef
Client's Sample Description
ACS Testing Material Description Brown sandy gravelly SILT
Principal Matrix (as received) SILT

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	102.2	g	Volume of Leachant Used (L10)	0.888	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	13.6	%	Volume of Eluate (VE10)	0.835	litres
Dry Matter Content (DR)	88.0	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	6.55
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	8.9
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	MT/ACSE/104	*	Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*#	As received	410
PAHs (mg/kg)	MT/ACSE/106	*#f	Air dried at 30 °C	18.2
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	6.9

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	8.4	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	11.02	
Arsenic	MT/ACSE/205	*	< 0.003	< 0.0300
Barium	MT/ACSE/205	*	0.170	1.702
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.003	0.031
Copper	MT/ACSE/205	*	0.036	0.365
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	0.0014	0.014
Nickel	MT/ACSE/205	*	0.0058	0.058
Lead	MT/ACSE/205	*	< 0.004	< 0.040
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	0.010	0.096
Zinc	MT/ACSE/205	*	0.028	0.276
Chloride	MT/ACSE/204	*	9.12	91.23
Fluoride	MT/ACSE/204	*	0.61	6.124
Sulphate	MT/ACSE/204	*	4.61	46.07
Total dissolved solids	MT/ACSE/304	*	65	650.0
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	17.2	172.1

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.

Eluates prepared in accordance with BS EN 12457-3:2002*

ACSE Sample Number 38180
 Sample ID 426814 - 18-97284
 Clients Sample Ref. TP13
 Material Source In Situ
 Location / Sample Depth (m) 0.00-0.64m
 Time Sampled
 Date Sampled 01/10/2018
 Sample Deviating Codes ef
 Client's Sample Description
 ACS Testing Material Description Multicoloured gravelly SAND
 Principal Matrix (as received) SAND

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	90.0	g	Volume of Leachant Used (L10)	0.900	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	0.0	%	Volume of Eluate (VE10)	0.846	litres
Dry Matter Content (DR)	100	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	2.55
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	2.1
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	MT/ACSE/104	*	Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*#	As received	423
PAHs (mg/kg)	MT/ACSE/106	*#f	Air dried at 30 °C	19.8
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	7.0

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	8.7	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	4.34	
Arsenic	MT/ACSE/205	*	< 0.003	< 0.0300
Barium	MT/ACSE/205	*	0.0715	0.715
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.002	0.023
Copper	MT/ACSE/205	*	0.015	0.145
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	0.0024	0.024
Nickel	MT/ACSE/205	*	0.0020	0.020
Lead	MT/ACSE/205	*	< 0.004	< 0.040
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	< 0.006	< 0.060
Zinc	MT/ACSE/205	*	< 0.002	< 0.020
Chloride	MT/ACSE/204	*	< 3.00	< 30.00
Fluoride	MT/ACSE/204	*	0.52	5.173
Sulphate	MT/ACSE/204	*	< 3.00	< 30.00
Total dissolved solids	MT/ACSE/304	*	< 25	< 100.0
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	7.31	73.10

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.

Eluates prepared in accordance with BS EN 12457-3:2002*

ACSE Sample Number 38182
 Sample ID 426816 - 18-97284
 Clients Sample Ref. TP14
 Material Source In Situ
 Location / Sample Depth (m) 0.15-0.60m
 Time Sampled
 Date Sampled 01/10/2018
 Sample Deviating Codes ef
 Client's Sample Description
 ACS Testing Material Description Grey sandy GRAVEL
 Principal Matrix (as received) SAND

LANDFILL WASTE ACCEPTANCE CRITERIA (WAC)

TEST VALUES

Mass of Undried Test Portion (Mw)	90.7	g	Volume of Leachant Used (L10)	0.899	litres
Mass of Dried Test Portion (Mp)	90.0	g			
Moisture Content Ratio (MC)	0.8	%	Volume of Eluate (VE10)	0.868	litres
Dry Matter Content (DR)	99.2	%			

SOLIDS ANALYSIS

Analyte	Method	AS	Sample Condition for Analysis	Results
Total Organic Carbon (%)	MT/ACSE/102	*	As received	15.4
Loss on ignition (%)	MT/ACSE/302	*f	Air dried at 30 °C	2.9
BTEX (mg/kg)	MT/ACSE/101	*ef	As received	< 0.60
PCBs (7 congeners) (mg/kg)	MT/ACSE/104	*	Air dried at 30 °C	< 1.00
Mineral oil (C10 - C40) (mg/kg)	MT/ACSE/105	*#	As received	152
PAHs (mg/kg)	MT/ACSE/106	*#f	Air dried at 30 °C	36.2
pH (units)	MT/ACSE/301	*ef	Air dried at 30 °C	7.2

ELUATE ANALYSIS

Analyte	Method	AS	Concentration in Eluate (mg/l)	Amount Leached (mg/kg)
Eluate Preparation	LP/ACSE/104			
Liquid : Solid Ratio (L/S)	LP/ACSE/101	*	L/S 10	L/S 10
pH (units)	MT/ACSE/301	*	8.5	
Temperature (°C)	MT/ACSE/301		20	
Conductivity (mS/m)	MT/ACSE/303	*	5.10	
Arsenic	MT/ACSE/205	*	< 0.003	< 0.0300
Barium	MT/ACSE/205	*	0.0730	0.730
Cadmium	MT/ACSE/205	*	< 0.0008	< 0.008
Chromium (total)	MT/ACSE/205	*	0.003	0.027
Copper	MT/ACSE/205	*	0.023	0.233
Mercury	MT/ACSE/202	*	< 0.0001	< 0.0010
Molybdenum	MT/ACSE/205	*	0.0023	0.023
Nickel	MT/ACSE/205	*	0.0020	0.020
Lead	MT/ACSE/205	*	< 0.004	< 0.040
Antimony	MT/ACSE/205	*	< 0.003	< 0.030
Selenium	MT/ACSE/205	*	< 0.006	< 0.060
Zinc	MT/ACSE/205	*	< 0.002	< 0.020
Chloride	MT/ACSE/204	*	< 3.00	< 30.00
Fluoride	MT/ACSE/204	*	0.61	6.137
Sulphate	MT/ACSE/204	*	< 3.00	< 30.00
Total dissolved solids	MT/ACSE/304	*	60	600.0
Phenol index	MT/ACSE/107	*	< 0.05	< 0.50
Dissolved organic carbon	MT/ACSE/103	*	4.54	45.40

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
3 %	5 %	6 %
---	---	10 %
6	---	---
1	---	---
500	---	---
100	---	---
---	>6	---

LANDFILL WASTE ACCEPTANCE CRITERIA SPECIFICATION

BS EN 12457-2:2002 LIMIT VALUES (mg/kg) at L/S 10		
Inert Waste	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15000	25000
10	150	500
1000	20000	50000
4000	60000	100000
1	---	---
500	800	1000

Comments: (comments are beyond the scope of UKAS accreditation)

Key (at clients request):

Individual test result exceeds the landfill waste acceptance criteria limit for inert waste.

The landfill waste acceptance criteria limits are provided for guidance only.
 Eluates prepared in accordance with BS EN 12457-3:2002*

Technical Information for Analytical Results

Analysis

* - denotes analysis covered by our UKAS accreditation

- denoted analysis covered by our MCERTS certification

AD = Sample tested in air dried condition.

AR = Sample tested in as-received condition.

D = Sample tested in dry condition.

L = Laboratory prepared leachate

SC = sub contracted

All MCERTS certified test values reported on a dry weight basis.

UKAS uncertainty available on request.

Where results are less than the limit of detection, the value of 0 is used in calculations.

For Phenol index, m- and p- cresol are reported as mixed isomers, calibrated with reference to a p-cresol reference solution.

The individual concentrations of m- and p- cresol cannot be quantified using this method, however, the result reported for the mixed isomers will be an over estimation of the true result in samples where m-cresol is present.

Deviating Codes

Deviating Samples

The use of any of the following symbols indicates that the sample was deviating and it is possible therefore that the results provided may not be representative of the sample taken.

- a – The date and /or time of sampling has not been provided, therefore it is not known if the time lapse between sampling and analysis has exceeded the acceptable holding time(s)*.
- b – The test item was received in a container which has not been recommended*.
- c – On receipt, the temperature of the sample received was found to fall outside the recommendations of BS ISO 18512:2007, Soil Quality. Guidance on long and short term storage of soil samples*.
- d – The sample was received in a container that had not been filled as recommended*.
- e – The delay between sampling and sample receipt is greater than the recommended holding time for the analyte of interest in this matrix*.
- f – The delay between sampling and analysis is greater than the recommended holding time for the analyte of interest in this matrix*.

*In accordance with the requirements of Technical Policy Statement TPS 63; UKAS Policy on Deviating Samples, all UKAS accredited testing laboratories are required to notify their clients that calibration or test results may be invalid where samples are found to be deviating. It is the opinion of ACSE that the term invalid should be interpreted as 'not fully representative of the sample taken at source'.

The following Additional Deviating Sample Codes may also be used.

I/S – Insufficient sample mass/volume received for accurate quantification of this analyte.

U/S – The sample received was deemed unsuitable for accurate determination of this analyte using the Test Methods available.

Head Office

Unit 14B
Blackhill Road West
Holton Heath Trading Park
Poole
Dorset BH16 6LE

Tel 01202 628680

Fax 01202 628680

Registered Office

Unit 14B
Blackhill Road West
Holton Heath Trading Park
Poole
Dorset BH16 6LE
ACS Environmental Testing Limited
Registered in England and
Wales No. 6000065

**Quality Testing & Materials Consultancy
to the
Construction Industry**