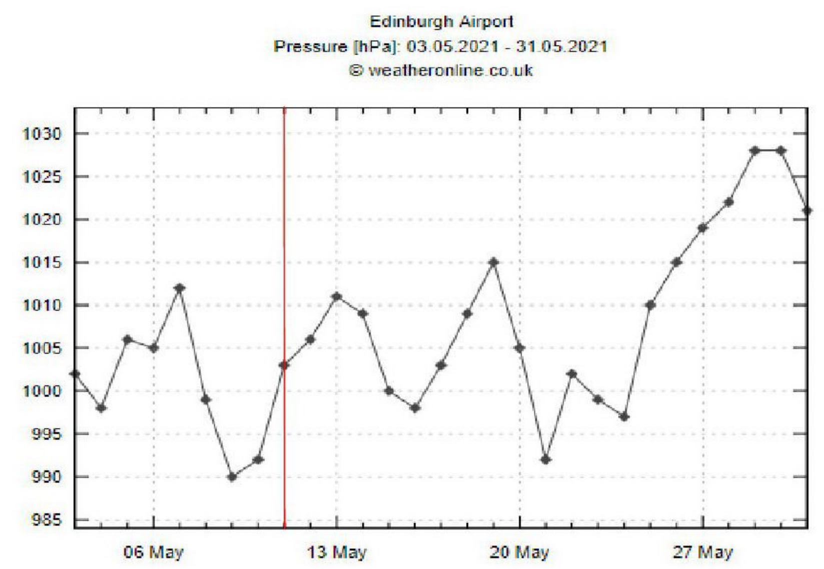
Appendix 9

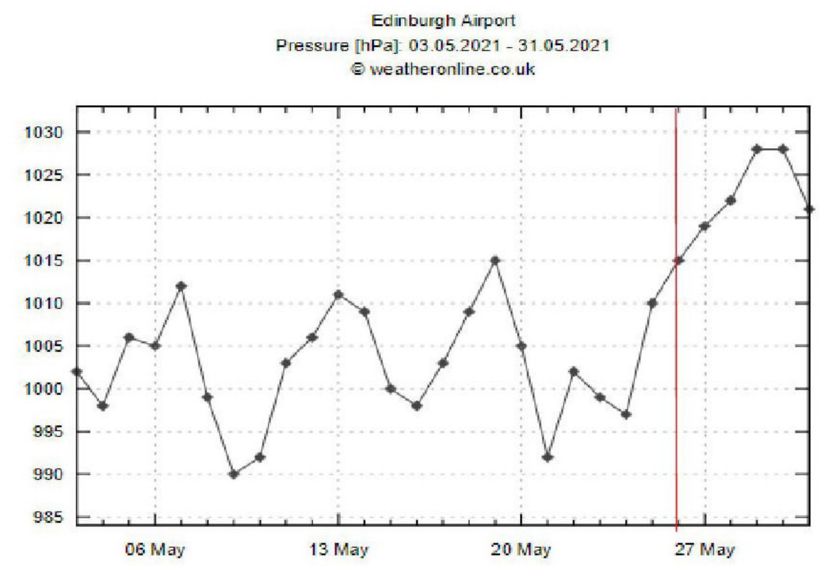
Ground Gas Assessment - Gas Screening Values (Carbon Dioxide)

Mason Evans Partnership

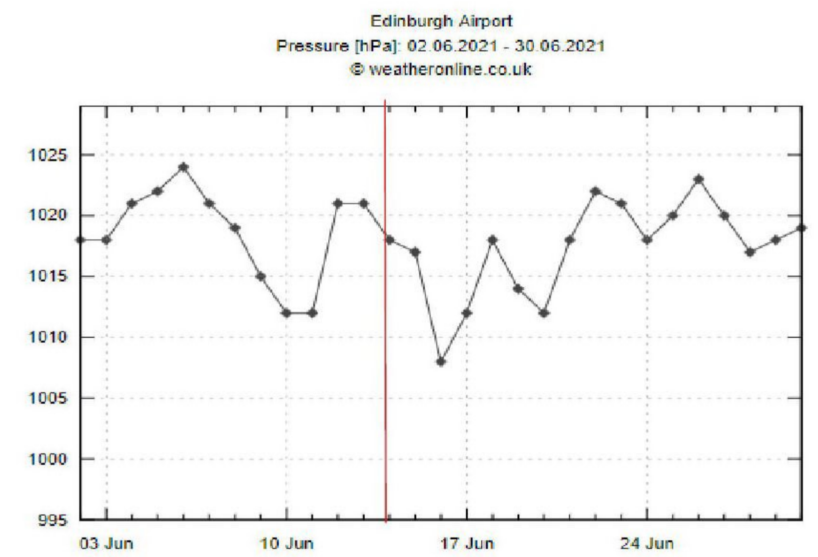
Round 1				
11/05/2021				
Borehole No.	CO2 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CO2)
BH01	0.6	0.0	0.1	0.0006
BH02	0.4	0.0	0.1	0.0004
BH03	0.7	0.0	0.1	0.0007
BH04	0.6	0.0	0.1	0.0006
BH05	0.4	0.0	0.1	0.0004
BH06	0.8	0.0	0.1	0.0008
R01	0.0	0.0	0.1	0
R02	0.0	0.0	0.1	0
R03	0.0	-35.4	35.4	0
R04	0.3	0.0	0.1	0.0003



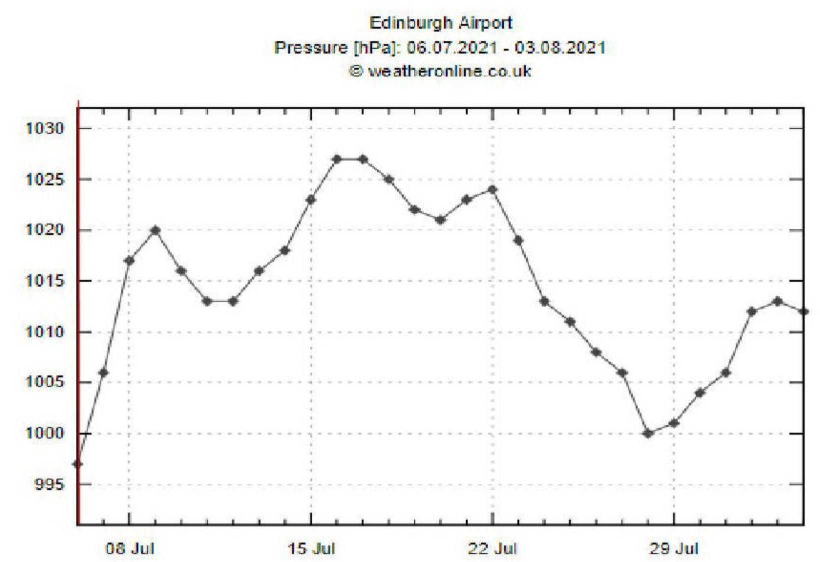
Round 2				
26/05/2021				
Borehole No.	CO2 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CO2)
BH01	0.3	0.0	0.1	0.0003
BH02	0.5	0.0	0.1	0.0005
BH03	1.0	0.0	0.1	0.001
BH04	-	0.0	0.1	-
BH05	0.8	0.0	0.1	0.0008
BH06	1.2	0.0	0.1	0.0012
R01	0.1	0.0	0.1	0.0001
R02	0.2	0.0	0.1	0.0002
R03	0.6	-17.6	17.6	0.1056
R04	0.2	0.0	0.1	0.0002



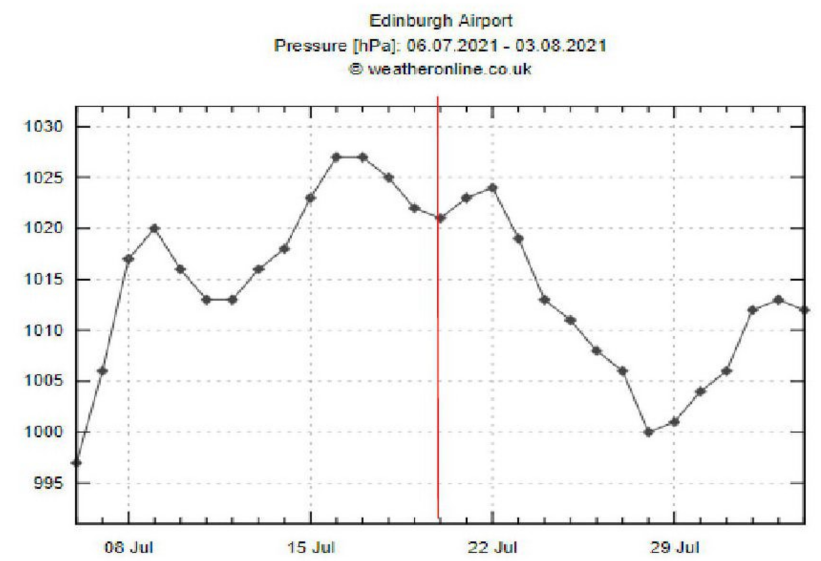
Round 3				
14/06/2021				
Borehole No.	CO2 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CO2)
BH01	0.7	0.0	0.1	0.0007
BH02	0.4	0.0	0.1	0.0004
BH03	1.4	0.0	0.1	0.0014
BH04	0.2	0.0	0.1	0.0002
BH05	0.6	0.0	0.1	0.0006
BH06	1.4	0.0	0.1	0.0014
R01	0.6	0.0	0.1	0.0006
R02	0.1	0.0	0.1	0.0001
R03	0.1	-2.1	2.1	0.0021
R04	0.6	0.0	0.1	0.0006



Round 4				
01/07/2021				
Borehole No.	CO2 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CO2)
BH01	0.9	0.0	0.1	0.0009
BH02	0.6	0.0	0.1	0.0006
BH03	1.1	0.0	0.1	0.0011
BH04	0.3	0.0	0.1	0.0003
BH05	1.0	0.0	0.1	0.001
BH06	1.6	0.0	0.1	0.0016
R01	0.7	0.0	0.1	0.0007
R02	0.2	0.0	0.1	0.0002
R03	0.2	-1.1	1.1	0.0022
R04	0.4	0.0	0.1	0.0004



Round 5				
20/07/2021				
Borehole No.	CO2 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CO2)
BH01	1.1	0.0	0.1	0.0011
BH02	0.8	0.0	0.1	0.0008
BH03	1.3	0.0	0.1	0.0013
BH04	0.4	0.0	0.1	0.0004
BH05	1.2	0.0	0.1	0.0012
BH06	1.8	0.0	0.1	0.0018
R01	0.6	0.0	0.1	0.0006
R02	0.4	0.0	0.1	0.0004
R03	0.2	-0.9	0.9	0.0018
R04	0.3	0.0	0.1	0.0003



*** Flow detection value 0.1 l/hr if no flow detected or flow value recorded**

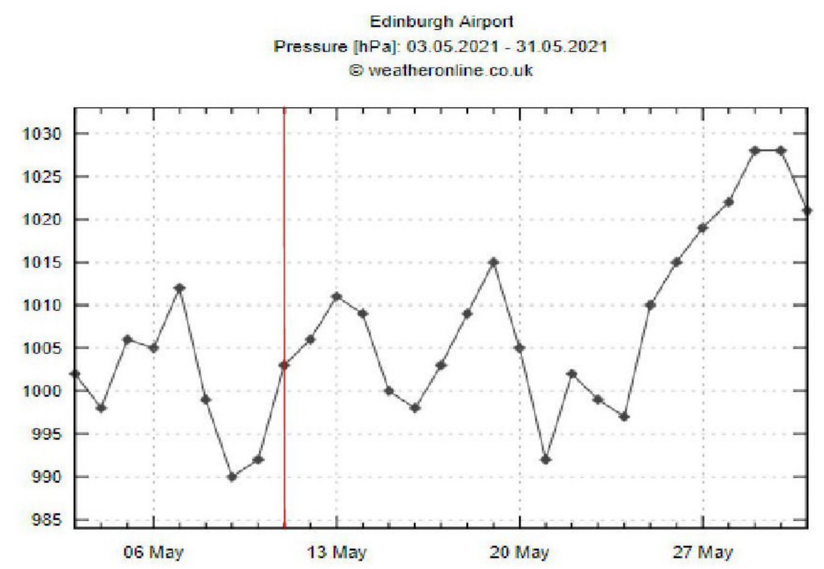
(green)	**Calculated GSV corresponds to 'Characteristic Situation 1' (i.e. <0.07 l/hr)**
(pink)	**Calculated GSV corresponds to 'Characteristic Situation 2' (i.e. 0.07 l/hr to <0.7 l/hr)**
(orange)	**Indicates elevated methane concentrations (i.e. >1.0%)**

Ground Gas Assessment - Gas Screening Values (Carbon Dioxcide)

Mason Evans Partnership

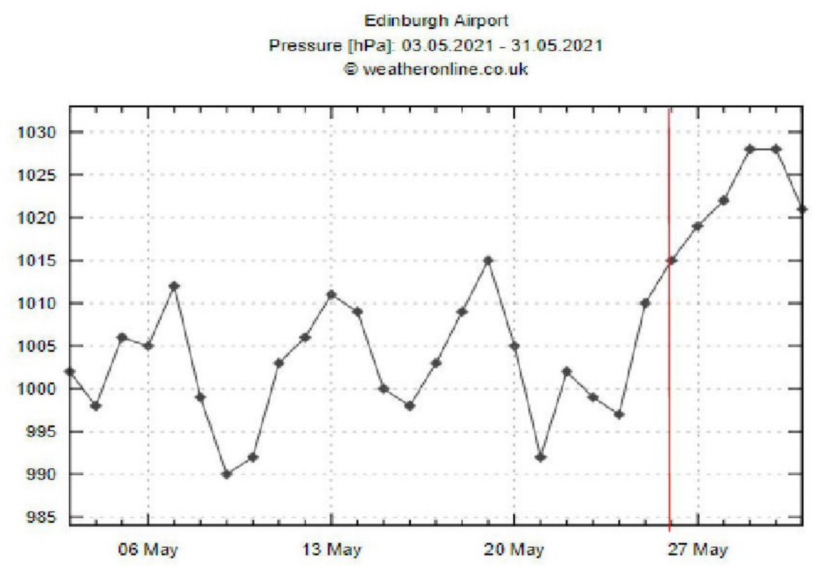
Round 1 — 11/05/2021

Borehole No.	CH4 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CH4)
BH01	0.0	0.0	0.1	0
BH02	0.0	0.0	0.1	0
BH03	0.0	0.0	0.1	0
BH04	0.0	0.0	0.1	0
BH05	0.0	0.0	0.1	0
BH06	0.0	0.0	0.1	0
R01	0.0	0.0	0.1	0
R02	0.0	0.0	0.1	0
R03	0.0	-35.4	35.4	0
R04	0.0	0.0	0.1	0



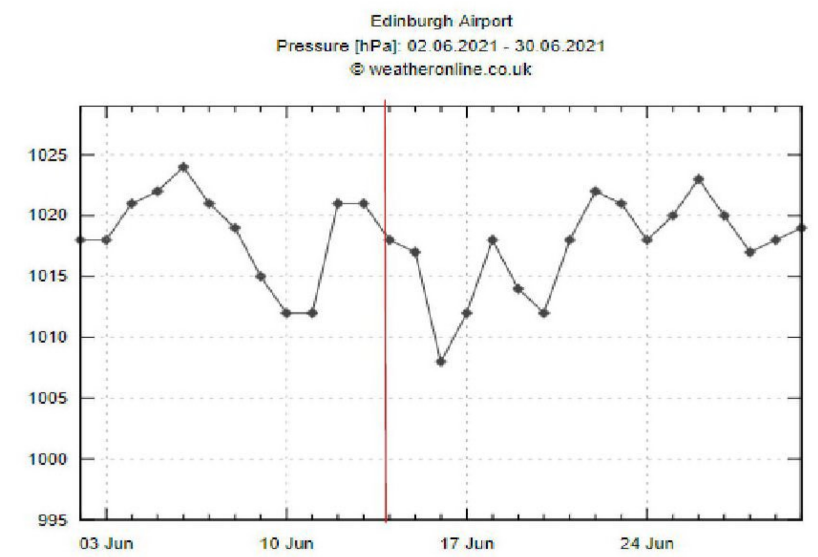
Round 2 — 26/05/2021

Borehole No.	CH4 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CH4)
BH01	0.0	0.0	0.1	0
BH02	0.0	0.0	0.1	0
BH03	0.0	0.0	0.1	0
BH04	0.0	0.0	0.1	-
BH05	0.0	0.0	0.1	0
BH06	0.0	0.0	0.1	0
R01	0.0	0.0	0.1	0
R02	0.0	0.0	0.1	0
R03	0.0	-17.6	17.6	0
R04	0.0	0.0	0.1	0



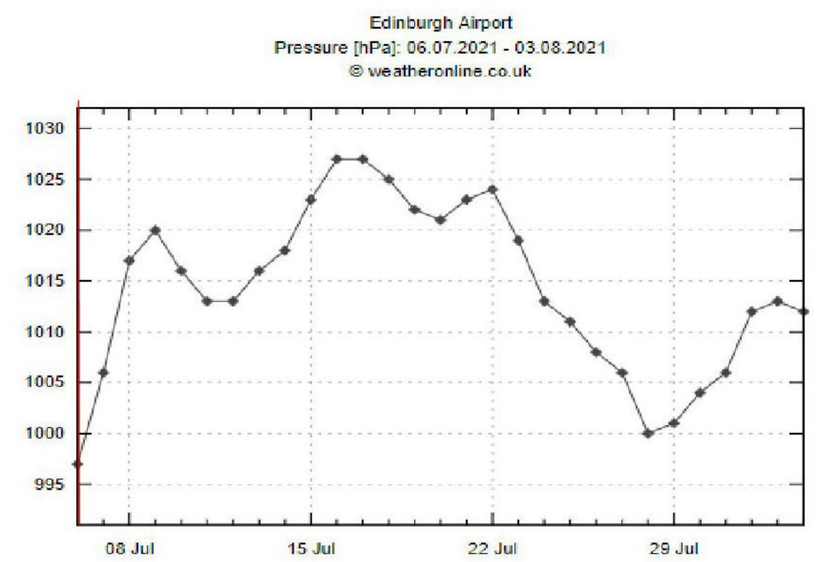
Round 3 — 14/06/2021

Borehole No.	CH4 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CH4)
BH01	0.0	0.0	0.1	0
BH02	0.0	0.0	0.1	0
BH03	0.0	0.0	0.1	0
BH04	0.0	0.0	0.1	0
BH05	0.0	0.0	0.1	0
BH06	0.0	0.0	0.1	0
R01	0.0	0.0	0.1	0
R02	0.0	0.0	0.1	0
R03	0.0	-2.1	2.1	0
R04	0.0	0.0	0.1	0



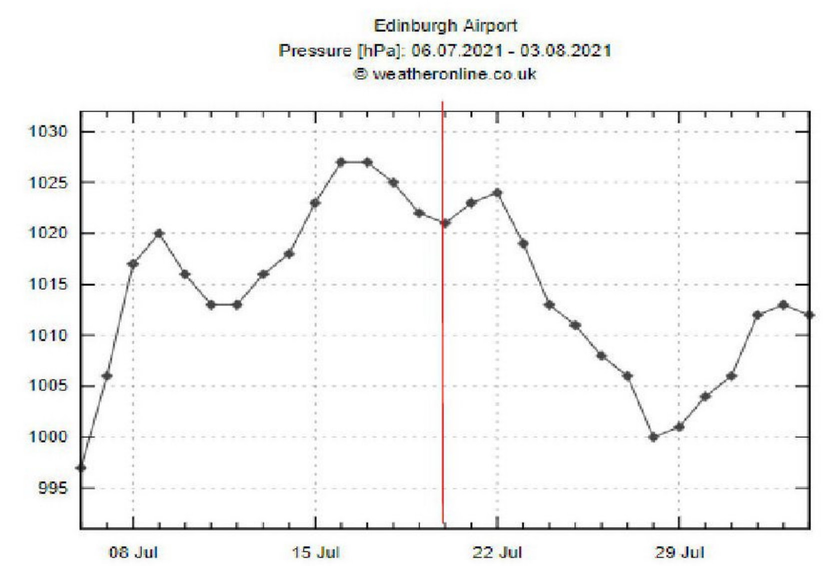
Round 4 — 01/07/2021

Borehole No.	CH4 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CH4)
BH01	0.0	0.0	0.1	0
BH02	0.0	0.0	0.1	0
BH03	0.0	0.0	0.1	0
BH04	0.0	0.0	0.1	0
BH05	0.0	0.0	0.1	0
BH06	0.0	0.0	0.1	0
R01	0.0	0.0	0.1	0
R02	0.0	0.0	0.1	0
R03	0.0	-1.1	1.1	0
R04	0.0	0.0	0.1	0



Round 5 — 20/07/2021

Borehole No.	CH4 (%)	Recorded Flow (l/hr)	Flow Detection Value (l/hr) *	GSV (l/hr) (CH4)
BH01	0.0	0.0	0.1	0
BH02	0.0	0.0	0.1	0
BH03	0.0	0.0	0.1	0
BH04	0.0	0.0	0.1	0
BH05	0.0	0.0	0.1	0
BH06	0.0	0.0	0.1	0
R01	0.0	0.0	0.1	0
R02	0.0	0.0	0.1	0
R03	0.0	-0.9	0.9	0
R04	0.0	0.0	0.1	0



*** Flow detection value 0.1 l/hr if no flow detected or flow value recorded**

(green)	**Calculated GSV corresponds to 'Characteristic Situation 1' (i.e. <0.07 l/hr)**
(pink)	**Calculated GSV corresponds to 'Characteristic Situation 2' (i.e. 0.07 l/hr to <0.7 l/hr)**
(orange)	**Indicates elevated methane concentrations (i.e. >1.0%)**

MASON EVANS
Geo-Environmental Consultants

Gas and Groundwater Monitoring Results

Project Number:	**P20-504**
Site:	**Sherriffhall South**
Date:	**11/05/21**
Readings taken by:	**CK**

Background Data

Weather Conditions	Clear
Ground Conditions (dry/wet):	Dry
Air Temperature (°C)	10
Atmospheric Pressure (mB) (start):	994
Atmospheric Pressure (mB) (finish):	993
O_2 (%)	20.6
CO_2 (%)	0.0
CH_4 (%)	0.0
N_2 (%)	0.0

Borehole No.		Gas													Groundwater		Sampling		
		O_2 (%)		CO_2 (%)		CH_4 (%)		H_2S (%)		CO (ppm)		LEL	Flow (l/hr)		Wd[3] (mbgl)	DoW[4] (m)	Pr[5]	R[6]	S[7]
		P[1]	SS[2]	P[1]	SS[2]	P[1]	SS[2]	P[1]	SS[2]	P[1]	SS[2]		P[1]	SS[2]					
BH01	**Time 09:30 to 12:00**	-	19.9	-	0.6	-	0.0	-	-	-	-	0.0	0.0	0.0	1.57	3.79	<2	SLOW	NS
BH02		-	20.3	-	0.4	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.87	-	-	-
BH03		-	19.7	-	0.7	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.68	-	-	-
BH04		-	19.8	-	0.6	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	4.09	-	-	-
BH05		-	20.1	-	0.4	-	0.0	-	-	-	-	0.0	0.0	0.0	3.35	3.73	-	-	-
BH06		-	19.4	-	0.8	-	0.0	-	-	-	-	0.0	0.0	0.0	DAMP	3.39	-	-	-
R01		-	19.1	-	0.0	-	0.0	-	-	-	-	0.0	0.0	0.0	7.05	20.46	-	-	-
R02		-	0.6	-	0.0	-	0.0	-	-	-	56	0.0	6.6	0.0	17.98	24.13	-	-	-
R03		-	20.5	-	0.0	-	0.0	-	-	-	-	0.0	-35.7	-35.4	18.97	19.10	-	-	-
R04		-	17.1	-	0.3	-	0.0	-	-	-	31	0.0	0.0	0.0	4.04	14.06	-	-	-

Remarks	BH04 – Cover sits too high, Damaged bung tap due to cover. R02 & R04 – C0
Borehole Damage Record/ Installation Record	
Borehole Condition Statement	We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.

Key:
1 – Peak
2 – Steady state
3 – Groundwater depth
4 – Depth of well
5 –Purged well volumes
6 – Recharge (yes/no)
7 – Sampled (yes/no)

Gas Monitor Model:	Serial No:	Recalibration Due:
GFM 430	10309	17/06/21

MASON EVANS

Geo-Environmental Consultants

Gas and Groundwater Monitoring Results

Project Number:	**P20-504**
Site:	**Sherriffhall South**
Date:	**26/05/21**
Readings taken by:	**CK**

Background Data		
	Weather Conditions	Overcast/Showers
	Ground Conditions (dry/wet):	Wet
	Air Temperature (°C)	11
	Atmospheric Pressure (mB) (start):	999
	Atmospheric Pressure (mB) (finish):	998
	O_2 (%)	20.5
	CO_2 (%)	0.0
	CH_4 (%)	0.0
	N_2 (%)	0.0

Borehole No.	**Time (hh:mm)**	**Gas**													**Groundwater**		**Sampling**		
		O_2 (%)		**CO_2 (%)**		**CH_4 (%)**		**H_2S (%)**		**CO (ppm)**		**LEL**	**Flow (l/hr)**		**Wd[3] (mbgl)**	**DoW[4] (m)**	**Pr[5]**	**R[6]**	**S[7]**
		P[1]	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**		**P[1]**	**SS[2]**					
BH01	09:30 – 11:00	-	20.1	-	0.3	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	1.73	3.79	<2	Slow	NS
BH02		-	20.0	-	0.5	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	DRY	3.87	-	-	-
BH03		-	19.4	-	1.0	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	DRY	3.68	-	-	-
BH04		-	-	-	-	-	-	-	-	-	-	-	-	-	DRY	4.09	-	-	-
BH05		-	19.6	-	0.8	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	3.17	3.73	-	-	-
BH06		-	19.0	-	1.2	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	3.12	3.39	-	-	-
R01		-	19.4	-	0.1	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	6.84	20.46	-	-	-
R02		-	1.1	-	0.2	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	17.67	24.13	-	-	-
R03		-	20.3	-	0.6	-	0.0	-	0.0	-	0.0	0.0	-17.8	-17.6	18.42	19.10	-	-	-
R04		-	18.4	-	0.2	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	4.19	14.06	-	-	-

Remarks			
Borehole Damage Record/ Installation Record		Key: 1 – Peak 2 – Steady state 3 – Groundwater depth 4 – Depth of well	5 –Purged well volumes 6 – Recharge (yes/no) 7 – Sampled (yes/no)
Borehole Condition Statement	We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.		
Gas Monitor Model:	**Serial No:**	**Recalibration Due:**	
GFM 430	10309	17/06/21	

MASON EVANS
Geo-Environmental Consultants

Gas and Groundwater Monitoring Results

Project Number:	**P20-504**
Site:	**Sherriffhall South**
Date:	**14/06/21**
Readings taken by:	**CK**

Background Data		
	Weather Conditions	Cloudy
	Ground Conditions (dry/wet):	Dry
	Air Temperature (°C)	15
	Atmospheric Pressure (mB) (start):	999
	Atmospheric Pressure (mB) (finish):	997
	O_2 (%)	20.4
	CO_2 (%)	0.0
	CH_4 (%)	0.0
	N_2 (%)	0.0

Borehole No.		**Gas**													**Groundwater**		**Sampling**		
		O_2 (%)		**CO_2 (%)**		**CH_4 (%)**		**H_2S (%)**		**CO (ppm)**		**LEL**	**Flow (l/hr)**		**Wd[3] (mbgl)**	**DoW[4] (m)**	**Pr[5]**	**R[6]**	**S[7]**
		P[1]	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**		**P[1]**	**SS[2]**					
BH01	**Time 13:30 to 16:00**	-	19.9	-	0.7	-	0.0	-	-	-	-	0.0	0.0	0.0	1.81	3.79	<2	SLOW	NS
BH02		-	20.2	-	0.4	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.87	-	-	-
BH03		-	19.1	-	1.4	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.68	-	-	-
BH04		-	20.3	-	0.2	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	4.09	-	-	-
BH05		-	19.8	-	0.6	-	0.0	-	-	-	-	0.0	0.0	0.0	3.12	3.73	-	-	-
BH06		-	18.7	-	1.4	-	0.0	-	-	-	-	0.0	0.0	0.0	3.19	3.39	-	-	-
R01		-	19.0	-	0.6	-	0.0	-	-	-	-	0.0	0.0	0.0	7.08	20.46	-	-	-
R02		-	1.2	-	0.1	-	0.0	-	-	-	37	0.0	0.2	0.0	17.24	24.13	-	-	-
R03		-	20.2	-	0.1	-	0.0	-	-	-	-	0.0	-2.4	-2.1	18.43	19.10	-	-	-
R04		-	17.1	-	0.6	-	0.0	-	-	-	14	0.0	0.0	0.0	3.99	14.06	-	-	-

Remarks	R02 & R04 – C0		
Borehole Damage Record/ Installation Record		Key: 1 – Peak 2 – Steady state 3 – Groundwater depth 4 – Depth of well	5 –Purged well volumes 6 – Recharge (yes/no) 7 – Sampled (yes/no)
Borehole Condition Statement	We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.		
Gas Monitor Model:	**Serial No:**	**Recalibration Due:**	
GFM 430	10309	17/06/21	

Gas and Groundwater Monitoring Results

Project Number:	**P20-504**
Site:	**Sherriffhall South**
Date:	**01/07/21**
Readings taken by:	**CK**

Background Data		
	Weather Conditions	Clear
	Ground Conditions (dry/wet):	Dry
	Air Temperature (°C)	18
	Atmospheric Pressure (mB) (start):	1012
	Atmospheric Pressure (mB) (finish):	1010
	O_2 (%)	20.4
	CO_2 (%)	0.0
	CH_4 (%)	0.0
	N_2 (%)	0.0

Borehole No.		Gas													Groundwater		Sampling		
		O_2 (%)		CO_2 (%)		CH_4 (%)		H_2S (%)		CO (ppm)		LEL	Flow (l/hr)		Wd[3] (mbgl)	DoW[4] (m)	Pr[5]	R[6]	S[7]
		P[1]	SS[2]	P[1]	SS[2]	P[1]	SS[2]	P[1]	SS[2]	P[1]	SS[2]		P[1]	SS[2]					
BH01	Time 13:00 to 15:30	-	19.6	-	0.9	-	0.0	-	-	-	-	0.0	0.0	0.0	1.84	3.79	3	SLOW	NS
BH02		-	20.0	-	0.6	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.87	-	-	-
BH03		-	19.4	-	1.1	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.68	-	-	-
BH04		-	20.1	-	0.3	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	4.09	-	-	-
BH05		-	19.4	-	1.0	-	0.0	-	-	-	-	0.0	0.0	0.0	3.02	3.73	-	-	-
BH06		-	18.4	-	1.6	-	0.0	-	-	-	-	0.0	0.0	0.0	3.11	3.39	-	-	-
R01		-	18.8	-	0.7	-	0.0	-	-	-	-	0.0	0.0	0.0	6.89	20.46	-	-	-
R02		-	1.4	-	0.2	-	0.0	-	-	-	24	0.0	0.0	0.0	17.13	24.13	-	-	-
R03		-	20.0	-	0.2	-	0.0	-	-	-	-	0.0	-1.2	-1.1	18.21	19.10	-	-	-
R04		-	17.7	-	0.4	-	0.0	-	-	-	10	0.0	0.0	0.0	4.02	14.06	-	-	-

Remarks	R02 & R04 – C0		
Borehole Damage Record/ Installation Record		Key: 1 – Peak 2 – Steady state 3 – Groundwater depth 4 – Depth of well	5 –Purged well volumes 6 – Recharge (yes/no) 7 – Sampled (yes/no)
Borehole Condition Statement	We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.		
Gas Monitor Model:	**Serial No:**	**Recalibration Due:**	
GFM 430	10309	17/06/21	

MASON EVANS
Geo-Environmental Consultants

Gas and Groundwater Monitoring Results

Project Number:	**P20-504**
Site:	**Sherriffhall South**
Date:	**20/07/21**
Readings taken by:	**CK**

Background Data		
	Weather Conditions	Clear
	Ground Conditions (dry/wet):	Dry
	Air Temperature (°C)	20
	Atmospheric Pressure (mB) (start):	1015
	Atmospheric Pressure (mB) (finish):	1012
	O_2 (%)	20.5
	CO_2 (%)	0.0
	CH_4 (%)	0.0
	N_2 (%)	0.0

Borehole No.		**Gas**													**Groundwater**		**Sampling**		
		O_2 (%)		**CO_2 (%)**		**CH_4 (%)**		**H_2S (%)**		**CO (ppm)**		**LEL**	**Flow (l/hr)**		**Wd³ (mbgl)**	**DoW⁴ (m)**	**Pr⁵**	**R⁶**	**S⁷**
		P¹	**SS²**	**P¹**	**SS²**	**P¹**	**SS²**	**P¹**	**SS²**	**P¹**	**SS²**		**P¹**	**SS²**					
BH01	**Time 09:30 to 12:30**	-	19.2	-	1.1	-	0.0	-	-	-	-	0.0	0.0	0.0	2.03	3.79	<2	SLOW	NS
BH02		-	19.7	-	0.8	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.87	-	-	-
BH03		-	19.1	-	1.3	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.68	-	-	-
BH04		-	19.9	-	0.4	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	4.09	-	-	-
BH05		-	19.2	-	1.2	-	0.0	-	-	-	-	0.0	0.0	0.0	2.91	3.73	-	-	-
BH06		-	18.2	-	1.8	-	0.0	-	-	-	-	0.0	0.0	0.0	3.02	3.39	-	-	-
R01		-	19.1	-	0.6	-	0.0	-	-	-	-	0.0	0.0	0.0	6.52	20.46	-	-	-
R02		-	2.4	-	0.4	-	0.0	-	-	-	18	0.0	0.0	0.0	16.84	24.13	-	-	-
R03		-	20.1	-	0.2	-	0.0	-	-	-	-	0.0	-1.0	-0.9	18.11	19.10	-	-	-
R04		-	18.3	-	0.3	-	0.0	-	-	-	7	0.0	0.0	0.0	4.16	14.06	-	-	-

Remarks	R02 & R04 – C0		
Borehole Damage Record/ Installation Record		Key: 1 – Peak 2 – Steady state 3 – Groundwater depth 4 – Depth of well	5 –Purged well volumes 6 – Recharge (yes/no) 7 – Sampled (yes/no)
Borehole Condition Statement	We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.		
Gas Monitor Model:	**Serial No:**	**Recalibration Due:**	
GFM 430	10309	17/06/21	

MASON EVANS Geo-Environmental Consultants	**Gas and Groundwater Monitoring Results**

Project Number:	**P20-504**
Site:	**Sherriffhall South**
Date:	**03/08/21**
Readings taken by:	**CK**

Background Data	**Weather Conditions**	Cloudy
	Ground Conditions (dry/wet):	Dry
	Air Temperature (°C)	14
	Atmospheric Pressure (mB) (start):	1006
	Atmospheric Pressure (mB) (finish):	1005
	O_2 (%)	20.4
	CO_2 (%)	0.0
	CH_4 (%)	0.0
	N_2 (%)	0.0

Borehole No.		**Gas**													**Groundwater**		**Sampling**		
		O_2 (%)		**CO_2 (%)**		**CH_4 (%)**		**H_2S (%)**		**CO (ppm)**		**LEL**	**Flow (l/hr)**		**Wd[3] (mbgl)**	**DoW[4] (m)**	**Pr[5]**	**R[6]**	**S[7]**
		P[1]	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**	**P[1]**	**SS[2]**		**P[1]**	**SS[2]**					
BH01	**Time 09:30 to 12:00**	-	18.8	-	1.4	-	0.0	-	-	-	-	0.0	0.0	0.0	2.14	3.79	<2	SLOW	NS
BH02		-	20.1	-	0.4	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.87	-	-	-
BH03		-	19.3	-	1.1	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	3.68	-	-	-
BH04		-	20.2	-	0.2	-	0.0	-	-	-	-	0.0	0.0	0.0	DRY	4.09	-	-	-
BH05		-	18.4	-	1.9	-	0.0	-	-	-	-	0.0	0.0	0.0	2.81	3.73	-	-	-
BH06		-	18.7	-	1.6	-	0.0	-	-	-	-	0.0	0.0	0.0	2.97	3.39	-	-	-
R01		-	19.3	-	0.8	-	0.0	-	-	-	-	0.0	0.0	0.0	6.37	20.46	-	-	-
R02		-	5.1	-	0.3	-	0.0	-	-	-	11	0.0	0.0	0.0	16.27	24.13	-	-	-
R03		-	19.9	-	0.3	-	0.0	-	-	-	-	0.0	-0.2	-0.1	18.03	19.10	-	-	-
R04		-	18.7	-	0.2	-	0.0	-	-	-	2	0.0	0.0	0.0	4.03	14.06	-	-	-

Remarks	R02 & R04 – C0		
Borehole Damage Record/ Installation Record		Key: 1 – Peak 2 – Steady state 3 – Groundwater depth 4 – Depth of well	5 –Purged well volumes 6 – Recharge (yes/no) 7 – Sampled (yes/no)
Borehole Condition Statement	We confirm that the boreholes were left sealed correctly by Mason Evans personnel in accordance with good working practices on the above date.		
Gas Monitor Model:	**Serial No:**	**Recalibration Due:**	
GFM 430	10309	17/06/21	

TEST DATE AND CONDITIONS	
Date	17/06/20
Atmospheric Pressure	1000mB
Ambient Temp	22.9°C
Environics Serial No.	2633

GAS DATA LTD
Pegasus House
Seven Stars Estate
Wheler Rd
Coventry
CV3 4LB
Tel 02476303311 Fax 02476307711

GFM430-1 FINAL INSPECTION & CALIBRATION CHECK CERTIFICATE

INSTRUMENT DETAILS	
Serial No	Customer
10309	Mason Evans

INSTRUMENT CHECKS			
Keyboard	✓	Pump Flow	500cc/min
Display Contrast	✓	Pump Flow @ -200mB	300cc/min
Clock Set / Running	✓	S/W Version	G430-00.0024/0013
Labels Fitted	✓	Recalibration Date	17/06/21

GAS CHECKS							
Calibration Gas		Instrument Gas Channels Read					
Gas Type	Applied Conc.	CH4 (%)	tol. (% vol.)	CO2 (%)	tol. (% vol.)	O2 (%)	tol. (% vol.)
N2	100%	0.0	0.0	0.0	0.0	0.0	+0.1
CH4	5 %	5.1	+/-0.3	0.0	0.0	0.0	+0.1
	60%	59.7	+/-3.0	0.0	0.0	0.0	+0.1
CO2	5%	0.0	0.0	5.1	+/-0.3	0.0	+0.1
	40%	0.0	0	40.4	+/-3.0	0.0	+0.1
Air (20.9% O2, 400ppm CO2)	100%	0.0	0	0.1	+0.1	20.8	+/-0.5

OPTIONAL GAS CHECKS								
Calibration Gas		Instrument Gas Channels Read						
Gas Type	Applied Conc.	Label Range	H2S 2000ppm	CO 2000ppm				tol. (% vol.)
N2	100%		0	0				0.0
H2S	100ppm		100	0				+/- 5.0
H2S	1500ppm		1500	0				+/- 5.0
CO	1000ppm		20	1000				+/- 5.0
								+/- 5.0
								+/- 5.0

TEST DATE AND CONDITIONS	
Date	17/06/20
Atmospheric Pressure	1000mB
Ambient Temp	22.9°C
Environics Serial No.	2633

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PRESSURE CHECKS							
Calibration Pressure		Instrument Pressure Channels Read					
Pressure @	Applied Pressure	Atmospheric [Ap] (mB)	tol. (mB)				
All Ports	Current Atmospheric	1000	+/-2.0				
Ap Port (Internal)	+800mB(a)	798	+/-5.0				
	+1200mB(a)	1203	+/-5.0				

FLOW CHECKS					
Calibration Flow		Instrument Flow Channels Read			
Applied Flow (l/hour)	Applied Pressure (Pa)	Flow [Flow] (l/hour)	tol. (l/hour)	Differential Pressure [Dp] (Pa)	tol. (Pa)
-30.0	-264	-28.1	+/-3.0	-250	+/-50
-3.0	-13	-2.8	+/-1.0	-12	+/-6
0.0	0	0.0	0.0	0	0.0
+3.0	12	2.8	+/-0.5	12	+/-3
+30.0	279	28.5	+/-3.0	265	+/-50
+60.0	853	57.1	+/-6.0	811	+/-130
+90.0	1696	86.2	+/-9.0	1646	+/-250

TEMPERATURE CHECK		
Calibration Temperature	Instrument Temperature Channel Read	
Applied Equivalent Temperature (°C)	Temperature [Temp] (°C)	tol. (°C)
-10.0	-10.0	+/- 2.0
0.0	0.0	+/- 1.0
30.0	30.0	+/- 1.0
60.0	60.0	+/- 1.0
100.0	99.5	+/- 1.0

Notes:

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.

Gas Data Ltd is certified to BS EN ISO9001:2015. Certificate NQA 8374. Valid until 22/03/2019

TEST DATE AND CONDITIONS	
Date	12/5/21
Atmospheric Pressure	994 mB
Ambient Temp	23.7 °C
Environics Serial No.	N/A

GAS DATA LTD
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GFM430-1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS					
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)		
328333	GFM 43[redacted]	[redacted]	21155		

Calibration Technician [redacted] **DATE** 11-5-21

Inspection Technician [redacted] **DATE** 12/5/21

INSTRUMENT [redacted] CHECKS			[redacted] not applicable (NA)
Function Tests	Dust Caps Fitted		φ
	Keyboard Test (All Keys)		φ
	Backlight Test		φ
	Clock Set / Running		φ
	Comms Test		φ
	Pump Flow Test (In & Out)		φ
	Overall Leak Test (30mB)		N/A
	Battery Charge Test		φ
	Service Date set to?		11/5/22
Channel Test	Data Logging Enabled?		φ
	Verify CH4/LEL		φ
	Verify CO2		φ
	Verify O2		φ
	Verify LEL		φ
	Verify 1st Option gas	H2S	φ
	Verify 2nd Option gas	CO	φ
	Verify 3rd Option gas		N/A
	Verify 4th Option gas		N/A
	Verify atmospheric pressure		φ
	Verify static pressure		N/A
	Verify differential pressure		φ
	Verify flow		φ.
	Verify temperature probe input		φ
	Verify vane anemometer input		φ
DataBase Checks	Jobcard(s) completed and signed		φ
	Jobcard(s) booked off database		φ
	Calibration certificate completed		φ
	Complete & print QI record		N/A
Label Checks	No. of Calibration label fitted		10535.
	Warranty label fitted		φ.
H2S Range	H2S Range from Sales Order		8000 ppm
	H2S Range from Cal Cert		8000 ppm
	Over-range value correct?		

INSTRUMENT PACKING LIST		Tick if included
Instrument		✓
Leather Case		✓
Instrument Strap		✓
AC Battery Charger (UK)		✗
AC Battery Charger (EURO)		✗
AC Battery Charger (US)		✗
AC Battery Charger (AUS)		✗
Gas Sample Pipe		✓
Carry Case		✗
Spares Pot		✗
Allen Key		✗
Flow Sample Pipe		✓
Temperature Probe		✗
Vane Anemometer		✗
USB Cable		✗
USB Memory stick		✗
SiteMan Software	Ver	✗
Internal Filter Pack	Qty 1	✓
External Filter Pack	Qty	✗
Field Guide		✗
Operation Manual (hard copy)		✗

Extra Items:

Comments:

TEST DATE AND CONDITIONS	
Date	11/05/21
Atmospheric Pressure	1003mB
Ambient Temp	24.7°C
Environics Serial No.	2518

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GFM430-1 FINAL INSPECTION & CALIBRATION CHECK CERTIFICATE

INSTRUMENT DETAILS	
Serial No	Customer
10309	Mason Evans

INSTRUMENT CHECKS			
Keyboard	✓	Pump Flow	500cc/min
Display Contrast	✓	Pump Flow @ -200mB	300cc/min
Clock Set / Running	✓	S/W Version	G430.0024/0013
Labels Fitted	✓	Recalibration Date	11/05/22

GAS CHECKS							
Calibration Gas		Instrument Gas Channels Read					
Gas Type	Applied Conc.	CH4 (%)	tol. (% vol.)	CO2 (%)	tol. (% vol.)	O2 (%)	tol. (% vol.)
N2	100%	0.0	0.0	0.0	0.0	0.0	+0.1
CH4	5 %	5.0	+/-0.3	0.0	0.0	0.0	+0.1
	60%	60.0	+/-3.0	0.0	0.0	0.0	+0.1
CO2	5%	0.0	0.0	4.9	+/-0.3	0.0	+0.1
	40%	0.0	0.0	40.0	+/-3.0	0.0	+0.1
Air (20.9% O2, 400ppm CO2)	100%	0.0	0.0	0.1	+0.1	20.8	+/-0.5

OPTIONAL GAS CHECKS								
Calibration Gas		Instrument Gas Channels Read						
Gas Type	Applied Conc.	Label Range	H2S 2000ppm	CO 2000ppm				tol. (% vol.)
N2	100%		0	0				0.0
H2S	100ppm		100	0				+/- 5.0
H2S	1500ppm		1500	0				+/- 5.0
CO	1000ppm		95	1005				+/- 5.0
								+/- 5.0
								+/- 5.0

TEST DATE AND CONDITIONS	
Date	11/05/21
Atmospheric Pressure	1003mB
Ambient Temp	24.7°C
Environics Serial No.	2518

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GFM430-1 FINAL INSPECTION & CALIBRATION CHECK CERTIFICATE

PRESSURE CHECKS							
Calibration Pressure		Instrument Pressure Channels Read					
Pressure @	Applied Pressure	Atmospheric [Ap] (mB)	tol. (mB)				
All Ports	Current Atmospheric	1003	+/-2.0				
Ap Port (Internal)	+800mB(a)	799	+/-5.0				
	+1200mB(a)	1203	+/-5.0				

FLOW CHECKS					
Calibration Flow		Instrument Flow Channels Read			
Applied Flow (l/hour)	Applied Pressure (Pa)	Flow [Flow] (l/hour)	tol. (l/hour)	Differential Pressure [Dp] (Pa)	tol. (Pa)
-30.0	-243	-28.9	+/-3.0	-230	+/-50
-3.0	-15	-3.0	+/-1.0	-14	+/-6
0.0	0	0.0	0.0	0	0.0
+3.0	15	3.0	+/-0.5	13	+/-3
+30.0	253	29.4	+/-3.0	247	+/-50
+60.0	734	59.2	+/-6.0	730	+/-130
+90.0	1428	89.5	+/-9.0	1419	+/-250

TEMPERATURE CHECK		
Calibration Temperature	Instrument Temperature Channel Read	
Applied Equivalent Temperature (°C)	Temperature [Temp] (°C)	tol. (°C)
-10.0	-10.0	+/- 2.0
0.0	0.0	+/- 1.0
30.0	30.0	+/- 1.0
60.0	60.0	+/- 1.0
100.0	99.5	+/- 1.0

Notes:

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.

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Appendix 10

Summary of Chemical Analysis
Sheriffhall South

P20-504

				Sample ID	BH01	TP08	BH05	TP10	TP06	TP05	TP04	TP03	TP02	TP07	TP11	TP09	TP10	TP12	BH01	BH02	BH03	BH03	BH04	BH04	BH05	BH06	R01	R02
				Depth	0.20	0.25	0.20	0.25	0.50	0.60	0.75	0.70	1.00	0.50	1.00	0.60	0.50	1.00	0.50	0.50	0.20	1.00	0.50	1.00	1.00	0.50	0.50	1.00
				Sample Type	Natural	Natural	Natural	Made Ground	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Made Ground	Natural	Natural	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Natural	Natural	Natural	Made Ground
				Sampling Date	13/04/2021	12/04/2021	13/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	15/04/2021	20/04/2021
Test	**Source**	**Lod**	**Commercial 6 % SOM SGV/GSV/SSV (mg/kg)***	**Units**																								
Preparation																												
Moisture Content	DETSC 1004	0.1	N/A	%	Not Tested			17	6.4	7	10	18	20	7.8	6.8	5.8	27	5.2	16	21	15	16	27	23	7.3	7.2	16	6.6
Metals																												
Arsenic	LQM/CIEH S4ULs (2015)	0.2	640	mg/kg	Not Tested			12	3	3.2	2.6	2.2	1.6	3.2	3	3.3	20	4.4	1.9	28	8.4	11	16	12	4.1	3.6	3.2	3.4
Boron, Water Soluble	LQM/CIEH S4ULs (2015)	0.2	240000	mg/kg				3.1	0.5	0.4	0.4	0.4	0.5	0.4	0.5	0.2	9.7	0.6	< 0.2	3.1	3.8	4.2	7.6	7.6	0.6	0.2	1.3	0.4
Cadmium	LQM/CIEH S4ULs (2015)	0.1	190	mg/kg				1.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2	0.4	0.1	2.3	0.5	0.7	1.7	1.2	0.1	0.1	0.2	< 0.1
Chromium	LQM/CIEH S4ULs (2015)	0.15	8600	mg/kg				30	11	12	10	9.6	13	11	15	11	36	14	13	32	17	18	38	29	14	15	12	13
Chromium, Hexavalent	LQM/CIEH S4ULs (2015)	1	33	mg/kg				< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	LQM/CIEH S4ULs (2015)	0.2	68000	mg/kg				1000	10	11	9.4	7.4	12	13	12	12	390	63	14	830	72	210	120	110	12	13	12	11
Copper (phytotoxic)	BS3882:2015	0.2	135	mg/kg				1000	10	11	9.4	7.4	12	13	12	12	390	63	14	830	72	210	120	110	12	13	12	11
Lead	LQM/CIEH S4ULs (2015)	0.3	6000	mg/kg				410	10	12	10	12	9.6	14	8.6	10	780	35	14	300	260	190	500	280	18	12	27	12
Mercury	LQM/CIEH S4ULs (2015)	0.05	1100	mg/kg				0.18	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05	< 0.05	0.22	0.05	< 0.05	0.39	0.13	0.11	0.7	0.43	< 0.05	0.05	0.07	< 0.05
Nickel	LQM/CIEH S4ULs (2015)	1	980	mg/kg				130	11	13	9.9	9.1	6.5	13	16	13	170	21	12	100	74	88	140	110	16	18	12	16
Nickel (phytotoxic)	BS3882:2015	1	75	mg/kg				130	11	13	9.9	9.1	6.5	13	16	13	170	21	12	100	74	88	140	110	16	18	12	16
Selenium	LQM/CIEH S4ULs (2015)	0.5	12000	mg/kg				0.8	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5	0.7	1.4	1.3	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	LQM/CIEH S4ULs (2015)	1	730000	mg/kg				310	28	30	27	36	16	36	29	29	830	65	26	710	300	280	640	560	44	38	53	31
Zinc (phytotoxic)	BS3882:2015	1	200	mg/kg				310	28	30	27	36	16	36	29	29	830	65	26	710	300	280	640	560	44	38	53	31
Inorganics																												
pH	n/a	n/a	N/A	pH	Not Tested			5.9	7.4	7.1	6.3	6.6	7.1	7.1	7.2	7.4	6.7	7.2	7.2	6.4	7.4	7.1	6.5	6.3	7.4	7.9	5.8	7.1
Cyanide, Total	AtRisk	0.1	34	mg/kg				0.4	< 0.1	0.1	0.2	0.2	< 0.1	0.1	< 0.1	< 0.1	3.6	0.1	0.1	1.5	0.8	1.2	1.9	1.6	0.1	< 0.1	0.5	< 0.1
Total Organic Carbon	n/a	0.5	N/A	%				3.8	0.3	0.4	0.9	0.6	0.8	0.4	0.4	0.2	1.5	0.4	0.9	15	13	15	30	30	1.2	< 0.5	3.3	< 0.5
Organic Matter (by calculation)	n/a	0.1	N/A	%				6.5	0.5	0.7	1.5	1	1.3	0.7	0.7	0.3	2.5	0.8	1.6	25	22	26	52	52	2	0.8	5.7	0.7
Sulphide	n/a	10	N/A	mg/kg				24	< 10	< 10	< 10	< 10	< 10	< 10	< 10	20	< 10	< 10	12	36	60	40	60	12	16	< 10	40	< 10
Sulphate as SO4, Total	LQM/CIEH S4ULs (2015)	0.01	10000	%				0.08	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.15	0.02	0.03	0.3	0.09	0.1	0.16	0.22	0.03	0.02	0.06	0.02
Petroleum Hydrocarbons																												
Aliphatic C5-C6	LQM/CIEH S4ULs (2015)	0.01	12,000	mg/kg	Not Tested			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	LQM/CIEH S4ULs (2015)	0.01	40,000	mg/kg				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	LQM/CIEH S4ULs (2015)	0.01	11,000	mg/kg				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	LQM/CIEH S4ULs (2015)	1.5	47,000	mg/kg				< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	LQM/CIEH S4ULs (2015)	1.2	90,000	mg/kg				< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	LQM/CIEH S4ULs (2015)	1.5	1,800,000	mg/kg				< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C16-C35	LQM/CIEH S4ULs (2015)	4.9	1,800,000	mg/kg				< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	9.4	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
Aliphatic C21-C35	LQM/CIEH S4ULs (2015)	3.4	1,800,000	mg/kg				< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	9.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	n/a	10	N/A	mg/kg				< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	LQM/CIEH S4ULs (2015)	0.01	86,000	mg/kg				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	LQM/CIEH S4ULs (2015)	0.01	180,000	mg/kg				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	LQM/CIEH S4ULs (2015)	0.01	17,000	mg/kg				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	LQM/CIEH S4ULs (2015)	0.9	34,000	mg/kg				< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	LQM/CIEH S4ULs (2015)	0.5	38,000	mg/kg				< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	LQM/CIEH S4ULs (2015)	0.6	28,000	mg/kg				< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	14	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	LQM/CIEH S4ULs (2015)	1.4	28,000	mg/kg				< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	77	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	n/a	10	N/A	mg/kg				< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	92	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	n/a	10	N/A	mg/kg				< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	100	< 10	< 10	< 10	< 10	< 10	< 10	< 10
PAHs																												
Naphthalene	LQM/CIEH S4ULs (2015)	0.1	1100	mg/kg	Not Tested			< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	LQM/CIEH S4ULs (2015)	0.1	100,000	mg/kg				0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	0.2	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	LQM/CIEH S4ULs (2015)	0.1	100,000	mg/kg				0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.7	0.3	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	LQM/CIEH S4ULs (2015)	0.1	71,000	mg/kg				0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	0.9	0.4	< 0.1	0.5	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	LQM/CIEH S4ULs (2015)	0.1	23,000	mg/kg				2.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.4	< 0.1	< 0.1	< 0.1	3.8	1.6	1.5	3.6	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	LQM/CIEH S4ULs (2015)	0.1	540,000	mg/kg				0.9	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	1.6	0.6	0.6	1.2	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	LQM/CIEH S4ULs (2015)	0.1	23,000	mg/kg				7.2	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	0.4	12	4.5	6.3	11	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	LQM/CIEH S4ULs (2015)	0.1	54,000	mg/kg				6.7	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	0.3	11	4.6	6	9.9	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	LQM/CIEH S4ULs (2015)	0.1	180	mg/kg				3.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.9	< 0.1	< 0.1	< 0.1	5.6	2.2	3.9	5.7	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	LQM/CIEH S4ULs (2015)	0.1	350	mg/kg				4.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.9	< 0.1	< 0.1	< 0.1	6.1	2.2	4.1	5.7	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	LQM/CIEH S4ULs (2015)	0.1	45	mg/kg				3.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.9	< 0.1	< 0.1	< 0.1	5.1	1.8	4.4	6	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	LQM/CIEH S4ULs (2015)	0.1	1200	mg/kg				1.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	< 0.1	< 0.1	< 0.1	2.8	1	2.4	3.5	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	LQM/CIEH S4ULs (2015)	0.1	36	mg/kg				3.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.1	< 0.1	< 0.1	< 0.1	6.2	2.2	4.7	7.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	LQM/CIEH S4ULs (2015)	0.1	510	mg/kg				2.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.9	< 0.1	< 0.1	< 0.1	5.1	1.6	3.9	6.6	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	LQM/CIEH S4ULs (2015)	0.1	3.6	mg/kg				0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	0.6	0.3	0.3	1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	LQM/CIEH S4ULs (2015)	0.1	4000	mg/kg				2.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.7	< 0.1	< 0.1	< 0.1	4.8	1.6	3.9	5.5	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	n/a	1.6	N/A	mg/kg				40	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	9.7	< 1.6	< 1.6	< 1.6	67	25	42	68	< 1.6	< 1.6	< 1.6	< 1.6
Phenols																												
Phenol - Monohydric	LQM/CIEH S4ULs (2015)	0.3	1300	mg/kg	Not Tested			< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Organochlorine Pesticides (OCPs)																												
alpha-BHC***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	Not Tested																			
gamma-BHC (Lindane)***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
beta-BHC***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
delta-BHC***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Heptachlor***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Aldrin***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Heptachlor epoxide***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
gamma-Chlordane***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Endosulphan I & Alpha-chlorodane***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
4,4-DDE***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Dieldrin***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Endrin***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Endosulphan II & 4,4-DDD***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Endrin aldehyde***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
4,4-DDT***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Endosulphan sulphate***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Methoxychlor***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Endrin ketone***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Organophosphorus Pesticides (OPPs)																												
Dichlorvos***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	Not Tested																			
Mevinphos***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Demeton-O***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Ethoprop***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Naled***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Phorate***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Demeton-S***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Diazinon***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Disulfoton***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Methylparathion***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Ronnel***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Fenthion***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Chlopyrifos***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Trichlorinate***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Merphos***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Stirofos***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Tokuthion***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Fensulfothion***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Bolstar***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Azinphos methyl***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Coumaphos***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Triazines																												
Atraton***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	Not Tested																			
Prometon***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Simazine***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Atrazine***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Propazine***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Terbuthylazine***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Secbumeton***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Symetryn***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Ametryn***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Prometryne***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				
Terbutryn***	LoD	0.1	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1																				

Based on an average pH of 6.96 (6 - 7)
Based on SOM of 6%. Average SOM recorded as 9.73 %

Toxic exceedances above relevant assessment criteria
Phytotoxic exceedances above relevant assessment criteria

Chemical Analysis Summary Table (Leachate Analysis - Surface Water Assessment)

Sheriffhall South

P20-504

				Sample ID	TP06	TP05	TP04	TP03	TP02	TP07	TP11	TP09	TP10	TP10	TP12
				Depth (m)	0.50	0.60	0.75	0.70	1.00	0.50	1.00	0.60	0.25	0.50	1.00
				Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
				Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
Test	**Relevant Guideline (EQS)**	**Source**	**Limit of Detection (LoD)**	**Units**											
Metals															
Arsenic	50	WAT-SG-53 (2019)	0.16	ug/l	0.32	0.36	0.44	0.28	0.16	0.22	< 0.16	0.2	1.3	0.48	0.26
Cadmium*	<0.08	WAT-SG-53 (2019)	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03	< 0.03	< 0.03
Calcium	N/A	N/A	0.09	mg/l	1.2	1.2	1.1	1.7	1.7	1.4	1.1	1.4	2.2	15	1.5
Chromium	4.7	WAT-SG-53 (2019)	0.25	ug/l	< 0.25	0.27	0.54	0.38	< 0.25	< 0.25	< 0.25	< 0.25	1.7	0.6	< 0.25
Copper (toxic)	1.00	WAT-SG-53 (2019)	0.4	ug/l	0.7	1.2	0.8	0.9	0.8	1.1	0.6	1	6	2.5	0.9
Lead	1.2	WAT-SG-53 (2019)	0.09	ug/l	0.54	0.66	0.91	0.33	0.1	0.54	0.15	0.25	2.8	0.8	0.5
Magnesium	N/A	N/A	0.02	mg/l	0.1	0.11	0.09	0.16	0.18	0.13	0.12	0.12	0.31	1.1	0.22
Mercury (inorganic)	0.07	WAT-SG-53 (2019)	0.01	ug/l	0.0028	0.0064	0.004	0.0021	0.0021	0.0012	0.0016	0.0014	0.0046	0.0024	0.0019
Nickel (toxic)	4.0	WAT-SG-53 (2019)	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	1.7	< 0.5
Selenium**	0.25	LoD	0.25	ug/l	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	1.9	1.4	0.44
Zinc (toxic)	11.9	WAT-SG-53 (2019)	1.3	ug/l	1.9	3.7	2.4	3.8	5.1	4.1	2.6	2.6	11	20	5.4
Inorganics															
Hardness	N/A	N/A	0.1	mg/l	3.31	3.31	3.09	4.91	5.06	4	3.3	4.06	6.82	41.9	4.63
Sulphate as SO4	400	WAT-SG-53 (2019)	0.1	mg/l	0.73	1	1.1	2.9	3.2	0.73	0.88	0.96	8.8	34	0.75
Sulphide	N/A	N/A	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenols															
Phenol	7.7	WAT-SG-53 (2019)	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

	Sample ID	BH01	BH02	BH03	BH03	BH04	BH04	BH05	BH06	R01	R02
	Depth (m)	0.50	0.50	0.20	1.00	0.50	1.00	1.00	0.50	0.50	1.00
	Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
	Sampling Date	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	15/04/2021	20/04/2021
Test	**Units**										
Metals											
Arsenic	ug/l	1.2	0.97	1	1.2	0.82	0.4	0.32	0.33	0.32	0.31
Cadmium*	ug/l	0.1	0.26	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Calcium	mg/l	2.3	20	21	18	14	22	6.6	5.2	3.5	1.8
Chromium	ug/l	3	1.7	1	1.1	1	0.64	< 0.25	< 0.25	< 0.25	0.33
Copper (toxic)	ug/l	4.9	18	3.1	2.6	1.8	0.9	1.7	1.7	2.7	1.1
Lead	ug/l	13	19	4.6	3.2	2.8	1.3	1.2	1.5	1.1	1.3
Magnesium	mg/l	0.22	1.2	1.6	1.5	0.79	1.1	0.43	0.34	0.41	0.18
Mercury (inorganic)	ug/l	0.018	0.035	0.0045	0.0078	0.022	0.0075	0.0041	0.0031	0.0066	0.0025
Nickel (toxic)	ug/l	1.9	4.4	3	2.9	3.8	2.7	< 0.5	< 0.5	0.7	< 0.5
Selenium**	ug/l	1.7	0.78	1.4	1.1	1.4	1.9	< 0.25	< 0.25	< 0.25	< 0.25
Zinc (toxic)	ug/l	18	180	25	13	19	60	10	5.5	12	6.3
Inorganics											
Hardness	mg/l	6.55	55	60.2	51.7	38.3	58.9	18.2	14.3	10.4	5.19
Sulphate as SO4	mg/l	2.5	19	14	6.1	8.7	42	4	0.84	3	1.8
Sulphide	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	12	< 10
Phenols											
Phenol	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

* Based on an average water hardness of 19.20mg/l

**Most conservative limit of detection used as no reporting value was available in the WAT-SG-53 (2015) document.

Exceedances above relevant assessment criteria

Summary of asbestos screening
Sheriffhall South
P20-504

Lab No	Sample ID	Material Type	Result	Comment	Analyst
1831672	TP06 0.50	SOIL	NAD	none	Colin Patrick
1831673	TP05 0.60	SOIL	NAD	none	Colin Patrick
1831674	TP04 0.75	SOIL	NAD	none	Colin Patrick
1831675	TP03 0.70	SOIL	NAD	none	Colin Patrick
1831676	TP02 1.00	SOIL	NAD	none	Colin Patrick
1831677	TP07 0.50	SOIL	NAD	none	Colin Patrick
1831678	TP11 1.00	SOIL	NAD	none	Colin Patrick
1831679	TP09 0.60	SOIL	NAD	none	Colin Patrick
1831680	TP10 0.25	SOIL	NAD	none	Colin Patrick
1831681	TP10 0.50	SOIL	NAD	none	Colin Patrick
1831682	TP12 1.00	SOIL	NAD	none	Colin Patrick
1836348	R1 0.50	SOIL	NAD	none	Lee Kerridge
1836350	R2 1.00	SOIL	NAD	none	Lee Kerridge
1832985	BH01 0.50	SOIL	NAD	none	Colin Patrick
1832986	BH02 0.50	SOIL	NAD	none	Colin Patrick
1832987	BH03 0.20	SOIL	NAD	none	Colin Patrick
1832988	BH03 1.00	SOIL	NAD	none	Colin Patrick
1832989	BH04 0.50	SOIL	NAD	none	Colin Patrick
1832990	BH04 1.00	SOIL	NAD	none	Colin Patrick
1832992	BH05 1.00	SOIL	NAD	none	Colin Patrick
1832993	BH06 0.50	SOIL	NAD	none	Colin Patrick

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

DETS

Certificate of Analysis

Certificate Number	21-07739	*Issued:*	20-Apr-21
Client	Mason Evans Partnership 95 Morrison Street Glasgow G5 8BE		

Our Reference	21-07739
Client Reference	P20-504
Order No	P ROURKE
Contract Title	P20-504 Sherrifhall South
Description	12 Soil samples, 11 Leachate samples.
Date Received	14-Apr-21
Date Started	14-Apr-21
Date Completed	20-Apr-21
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

Test	Method	LOD	Units						
			Lab No	1831672	1831673	1831674	1831675	1831676	1831677
			.Sample ID	TP06	TP05	TP04	TP03	TP02	TP07
			Depth	0.50	0.60	0.75	0.70	1.00	0.50
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Preparation									
Moisture Content	DETSC 1004	0.1	%	6.4	7.0	10	18	20	7.8
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	3.0	3.2	2.6	2.2	1.6	3.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5	0.4	0.4	0.4	0.5	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	11	12	10	9.6	13	11
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	10	11	9.4	7.4	12	13
Lead	DETSC 2301#	0.3	mg/kg	10	12	10	12	9.6	14
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08
Nickel	DETSC 2301#	1	mg/kg	11	13	9.9	9.1	6.5	13
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	28	30	27	36	16	36
Inorganics									
pH	DETSC 2008#		pH	7.4	7.1	6.3	6.6	7.1	7.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	0.2	0.2	< 0.1	0.1
Total Organic Carbon	DETSC 2002	0.1	%	0.3	0.4	0.9	0.6	0.8	0.4
Organic Matter (by calculation)	*	0.1	%	0.5	0.7	1.5	1.0	1.3	0.7
Sulphide	DETSC 2024*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02	0.01	0.02	0.02	0.02	0.02
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C16-C35	DETSC 3072#	4.9	mg/kg	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

			Lab No	1831672	1831673	1831674	1831675	1831676	1831677
			.Sample ID	TP06	TP05	TP04	TP03	TP02	TP07
			Depth	0.50	0.60	0.75	0.70	1.00	0.50
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
OCPs									
alpha-BHC	DETSC 3441*	0.1	mg/kg						
gamma-BHC (Lindane)	DETSC 3441*	0.1	mg/kg						
beta-BHC	DETSC 3441*	0.1	mg/kg						
delta-BHC	DETSC 3441*	0.1	mg/kg						
Heptachlor	DETSC 3441*	0.1	mg/kg						
Aldrin	DETSC 3441*	0.1	mg/kg						
Heptachlor epoxide	DETSC 3441*	0.1	mg/kg						
gamma-Chlordane	DETSC 3441*	0.1	mg/kg						
Endosulphan I & Alpha-chlorodane	DETSC 3441*	0.1	mg/kg						
4,4-DDE	DETSC 3441*	0.1	mg/kg						
Dieldrin	DETSC 3441*	0.1	mg/kg						
Endrin	DETSC 3441*	0.1	mg/kg						
Endosulphan II & 4,4-DDD	DETSC 3441*	0.1	mg/kg						
Endrin aldehyde	DETSC 3441*	0.1	mg/kg						
4,4-DDT	DETSC 3441*	0.1	mg/kg						
Endosulphan sulphate	DETSC 3441*	0.1	mg/kg						
Methoxychlor	DETSC 3441*	0.1	mg/kg						
Endrin ketone	DETSC 3441*	0.1	mg/kg						

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

			Lab No	1831672	1831673	1831674	1831675	1831676	1831677
			.Sample ID	TP06	TP05	TP04	TP03	TP02	TP07
			Depth	0.50	0.60	0.75	0.70	1.00	0.50
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
OPPs									
Dichlorvos	DETSC 3443*	0.1	mg/kg						
Mevinphos	DETSC 3443*	0.1	mg/kg						
Demeton-O	DETSC 3443*	0.1	mg/kg						
Ethoprop	DETSC 3443*	0.1	mg/kg						
Naled	DETSC 3443*	0.1	mg/kg						
Phorate	DETSC 3443*	0.1	mg/kg						
Demeton-S	DETSC 3443*	0.1	mg/kg						
Diazinon	DETSC 3443*	0.1	mg/kg						
Disulfoton	DETSC 3443*	0.1	mg/kg						
Methylparathion	DETSC 3443*	0.1	mg/kg						
Ronnel	DETSC 3443*	0.1	mg/kg						
Fenthion	DETSC 3443*	0.1	mg/kg						
Chlopyrifos	DETSC 3443*	0.1	mg/kg						
Trichlorinate	DETSC 3443*	0.1	mg/kg						
Merphos	DETSC 3443*	0.1	mg/kg						
Stirofos	DETSC 3443*	0.1	mg/kg						
Tokuthion	DETSC 3443*	0.1	mg/kg						
Fensulfothion	DETSC 3443*	0.1	mg/kg						
Bolstar	DETSC 3443*	0.1	mg/kg						
Azinphos methyl	DETSC 3443*	0.1	mg/kg						
Coumaphos	DETSC 3443*	0.1	mg/kg						
Triazines									
Atraton	DETSC 3445*	0.1	mg/kg						
Prometon	DETSC 3445*	0.1	mg/kg						
Simazine	DETSC 3445*	0.1	mg/kg						
Atrazine	DETSC 3445*	0.1	mg/kg						
Propazine	DETSC 3445*	0.1	mg/kg						
Terbuthylazine	DETSC 3445*	0.1	mg/kg						
Secbumeton	DETSC 3445*	0.1	mg/kg						
Symetryn	DETSC 3445*	0.1	mg/kg						
Ametryn	DETSC 3445*	0.1	mg/kg						
Prometryne	DETSC 3445*	0.1	mg/kg						
Terbutryn	DETSC 3445*	0.1	mg/kg						

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

			Lab No	1831678	1831679	1831680	1831681	1831682	1831683
			.Sample ID	TP11	TP09	TP10	TP10	TP12	TP08
			Depth	1.00	0.60	0.25	0.50	1.00	0.25
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Preparation									
Moisture Content	DETSC 1004	0.1	%	6.8	5.8	17	27	5.2	
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	3.0	3.3	12	20	4.4	
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5	0.2	3.1	9.7	0.6	
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	1.2	2.0	0.4	
Chromium	DETSC 2301#	0.15	mg/kg	15	11	30	36	14	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	12	12	1000	390	63	
Lead	DETSC 2301#	0.3	mg/kg	8.6	10	410	780	35	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.18	0.22	0.05	
Nickel	DETSC 2301#	1	mg/kg	16	13	130	170	21	
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	0.8	1.0	< 0.5	
Zinc	DETSC 2301#	1	mg/kg	29	29	310	830	65	
Inorganics									
pH	DETSC 2008#		pH	7.2	7.4	5.9	6.7	7.2	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.4	3.6	0.1	
Total Organic Carbon	DETSC 2002	0.1	%	0.4	0.2	3.8	1.5	0.4	
Organic Matter (by calculation)	*	0.1	%	0.7	0.3	6.5	2.5	0.8	
Sulphide	DETSC 2024*	10	mg/kg	< 10	20	24	< 10	< 10	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.01	0.02	0.08	0.15	0.02	
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	
Aliphatic C16-C35	DETSC 3072#	4.9	mg/kg	< 4.9	< 4.9	< 4.9	< 4.9	< 4.9	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

Test	Method	LOD	Units						
			Lab No	1831678	1831679	1831680	1831681	1831682	1831683
			.Sample ID	TP11	TP09	TP10	TP10	TP12	TP08
			Depth	1.00	0.60	0.25	0.50	1.00	0.25
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	< 0.1	
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1	< 0.1	
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	0.2	< 0.1	
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	2.3	0.4	< 0.1	
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.9	0.2	< 0.1	
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	7.2	1.4	< 0.1	
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	6.7	1.4	< 0.1	
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	3.8	0.9	< 0.1	
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	4.2	0.9	< 0.1	
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	3.2	0.9	< 0.1	
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	1.6	0.5	< 0.1	
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	3.5	1.1	< 0.1	
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	2.6	0.9	< 0.1	
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	0.2	< 0.1	
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	2.4	0.7	< 0.1	
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	40	9.7	< 1.6	
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	
OCPs									
alpha-BHC	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
gamma-BHC (Lindane)	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
beta-BHC	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
delta-BHC	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Heptachlor	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Aldrin	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Heptachlor epoxide	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
gamma-Chlordane	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Endosulphan I & Alpha-chlorodane	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
4,4-DDE	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Dieldrin	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Endrin	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Endosulphan II & 4,4-DDD	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Endrin aldehyde	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
4,4-DDT	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Endosulphan sulphate	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Methoxychlor	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1
Endrin ketone	DETSC 3441*	0.1	mg/kg			< 0.1			< 0.1

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

			Lab No	1831678	1831679	1831680	1831681	1831682	1831683
			.Sample ID	TP11	TP09	TP10	TP10	TP12	TP08
			Depth	1.00	0.60	0.25	0.50	1.00	0.25
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
OPPs									
Dichlorvos	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Mevinphos	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Demeton-O	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Ethoprop	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Naled	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Phorate	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Demeton-S	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Diazinon	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Disulfoton	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Methylparathion	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Ronnel	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Fenthion	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Chlopyrifos	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Trichlorinate	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Merphos	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Stirofos	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Tokuthion	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Fensulfothion	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Bolstar	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Azinphos methyl	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Coumaphos	DETSC 3443*	0.1	mg/kg			< 0.1			< 0.1
Triazines									
Atraton	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Prometon	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Simazine	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Atrazine	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Propazine	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Terbuthylazine	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Secbumeton	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Symetryn	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Ametryn	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Prometryne	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1
Terbutryn	DETSC 3445*	0.1	mg/kg			< 0.1			< 0.1

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

Test	Method	LOD	Units	1831684	1831685	1831686	1831687	1831688	1831689	1831690
			.Sample ID	TP06	TP05	TP04	TP03	TP02	TP07	TP11
			Depth	0.50	0.60	0.75	0.70	1.00	0.50	1.00
			Other ID							
			Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
			Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Preparation										
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y	Y	Y	Y	Y	Y
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.32	0.36	0.44	0.28	0.16	0.22	< 0.16
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	1.2	1.2	1.1	1.7	1.7	1.4	1.1
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.27	0.54	0.38	< 0.25	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.7	1.2	0.8	0.9	0.8	1.1	0.6
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.54	0.66	0.91	0.33	0.10	0.54	0.15
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.10	0.11	0.09	0.16	0.18	0.13	0.12
Mercury, Dissolved (Low Level)	DETSC 2324	0.001	ug/l	0.0028	0.0064	0.0040	0.0021	0.0021	0.0012	0.0016
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	1.9	3.7	2.4	3.8	5.1	4.1	2.6
Inorganics										
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	3.31	3.31	3.09	4.91	5.06	4.00	3.30
Sulphate as SO4	DETSC 2055	0.1	mg/l	0.73	1.0	1.1	2.9	3.2	0.73	0.88
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Phenols										
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

Test	Method	LOD	Units				
			Lab No	1831691	1831692	1831693	1831694
			.Sample ID	TP09	TP10	TP10	TP12
			Depth	0.60	0.25	0.50	1.00
			Other ID				
			Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE
			Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021
			Sampling Time	n/s	n/s	n/s	n/s
Preparation							
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y	Y	Y
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.20	1.3	0.48	0.26
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	0.03	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	1.4	2.2	15	1.5
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	1.7	0.60	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.0	6.0	2.5	0.9
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.25	2.8	0.80	0.50
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.12	0.31	1.1	0.22
Mercury, Dissolved (Low Level)	DETSC 2324	0.001	ug/l	0.0014	0.0046	0.0024	0.0019
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	1.9	1.7	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	1.9	1.4	0.44
Zinc, Dissolved	DETSC 2306	1.3	ug/l	2.6	11	20	5.4
Inorganics							
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	4.06	6.82	41.9	4.63
Sulphate as SO4	DETSC 2055	0.1	mg/l	0.96	8.8	34	0.75
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	< 10
Phenols							
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 21-07739
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1831672	TP06 0.50	SOIL	NAD	none	Colin Patrick
1831673	TP05 0.60	SOIL	NAD	none	Colin Patrick
1831674	TP04 0.75	SOIL	NAD	none	Colin Patrick
1831675	TP03 0.70	SOIL	NAD	none	Colin Patrick
1831676	TP02 1.00	SOIL	NAD	none	Colin Patrick
1831677	TP07 0.50	SOIL	NAD	none	Colin Patrick
1831678	TP11 1.00	SOIL	NAD	none	Colin Patrick
1831679	TP09 0.60	SOIL	NAD	none	Colin Patrick
1831680	TP10 0.25	SOIL	NAD	none	Colin Patrick
1831681	TP10 0.50	SOIL	NAD	none	Colin Patrick
1831682	TP12 1.00	SOIL	NAD	none	Colin Patrick

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Certificate of Analysis

Certificate Number	21-07930	*Issued:*	22-Apr-21

Client	Mason Evans Partnership 95 Morrison Street Glasgow G5 8BE

Our Reference	21-07930
Client Reference	P20-504
Order No	P ROURKE
Contract Title	P20-504 Sherrifhall South 1B
Description	10 Soil samples, 8 Leachate samples.
Date Received	16-Apr-21
Date Started	16-Apr-21
Date Completed	22-Apr-21
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

Test	Method	LOD	Units						
			Lab No	1832984	1832985	1832986	1832987	1832988	1832989
			.Sample ID	BH01	BH01	BH02	BH03	BH03	BH04
			Depth	0.20	0.50	0.50	0.20	1.00	0.50
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Preparation									
Moisture Content	DETSC 1004	0.1	%		16	21	15	16	27
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg		1.9	28	8.4	11	16
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg		< 0.2	3.1	3.8	4.2	7.6
Cadmium	DETSC 2301#	0.1	mg/kg		0.1	2.3	0.5	0.7	1.7
Chromium	DETSC 2301#	0.15	mg/kg		13	32	17	18	38
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg		14	830	72	210	120
Lead	DETSC 2301#	0.3	mg/kg		14	300	260	190	500
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05	0.39	0.13	0.11	0.70
Nickel	DETSC 2301#	1	mg/kg		12	100	74	88	140
Selenium	DETSC 2301#	0.5	mg/kg		< 0.5	< 0.5	< 0.5	0.7	1.4
Zinc	DETSC 2301#	1	mg/kg		26	710	300	280	640
Inorganics									
pH	DETSC 2008#		pH		7.2	6.4	7.4	7.1	6.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.1	1.5	0.8	1.2	1.9
Total Organic Carbon	DETSC 2084#	0.5	%		0.9	15	13	15	30
Organic Matter (by calculation)	*	0.1	%		1.6	25	22	26	52
Sulphide	DETSC 2024*	10	mg/kg		12	36	60	40	60
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.03	0.30	0.09	0.10	0.16
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C16-C35	DETSC 3072#	4.9	mg/kg		< 4.9	< 4.9	9.4	< 4.9	< 4.9
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4	< 3.4	9.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		< 0.5	< 0.5	0.9	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6	< 0.6	14	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4	< 1.4	77	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10	< 10	92	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg		< 10	< 10	100	< 10	< 10

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

Test	Method	LOD	Units	1832984	1832985	1832986	1832987	1832988	1832989
			.Sample ID	BH01	BH01	BH02	BH03	BH03	BH04
			Depth	0.20	0.50	0.50	0.20	1.00	0.50
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	0.2	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	0.3	< 0.1	0.2
Acenaphthene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	0.7	0.3	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	0.9	0.4	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	3.8	1.6	1.5
Anthracene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	1.6	0.6	0.6
Fluoranthene	DETSC 3301	0.1	mg/kg		< 0.1	0.4	12	4.5	6.3
Pyrene	DETSC 3301	0.1	mg/kg		< 0.1	0.3	11	4.6	6.0
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	5.6	2.2	3.9
Chrysene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	6.1	2.2	4.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	5.1	1.8	4.4
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	2.8	1.0	2.4
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	6.2	2.2	4.7
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	5.1	1.6	3.9
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	0.6	0.3	0.3
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg		< 0.1	< 0.1	4.8	1.6	3.9
PAH Total	DETSC 3301	1.6	mg/kg		< 1.6	< 1.6	67	25	42
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3	0.4	< 0.3	< 0.3	< 0.3
OCPs									
alpha-BHC	DETSC 3441*	0.1	mg/kg	< 0.1					
gamma-BHC (Lindane)	DETSC 3441*	0.1	mg/kg	< 0.1					
beta-BHC	DETSC 3441*	0.1	mg/kg	< 0.1					
delta-BHC	DETSC 3441*	0.1	mg/kg	< 0.1					
Heptachlor	DETSC 3441*	0.1	mg/kg	< 0.1					
Aldrin	DETSC 3441*	0.1	mg/kg	< 0.1					
Heptachlor epoxide	DETSC 3441*	0.1	mg/kg	< 0.1					
gamma-Chlordane	DETSC 3441*	0.1	mg/kg	< 0.1					
Endosulphan I & Alpha-chlorodane	DETSC 3441*	0.1	mg/kg	< 0.1					
4,4-DDE	DETSC 3441*	0.1	mg/kg	< 0.1					
Dieldrin	DETSC 3441*	0.1	mg/kg	< 0.1					
Endrin	DETSC 3441*	0.1	mg/kg	< 0.1					
Endosulphan II & 4,4-DDD	DETSC 3441*	0.1	mg/kg	< 0.1					
Endrin aldehyde	DETSC 3441*	0.1	mg/kg	< 0.1					
4,4-DDT	DETSC 3441*	0.1	mg/kg	< 0.1					
Endosulphan sulphate	DETSC 3441*	0.1	mg/kg	< 0.1					
Methoxychlor	DETSC 3441*	0.1	mg/kg	< 0.1					
Endrin ketone	DETSC 3441*	0.1	mg/kg	< 0.1					

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Summary of Chemical Analysis
Soil Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

			Lab No	1832984	1832985	1832986	1832987	1832988	1832989
			.Sample ID	BH01	BH01	BH02	BH03	BH03	BH04
			Depth	0.20	0.50	0.50	0.20	1.00	0.50
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
OPPs									
Dichlorvos	DETSC 3443*	0.1	mg/kg	< 0.1					
Mevinphos	DETSC 3443*	0.1	mg/kg	< 0.1					
Demeton-O	DETSC 3443*	0.1	mg/kg	< 0.1					
Ethoprop	DETSC 3443*	0.1	mg/kg	< 0.1					
Naled	DETSC 3443*	0.1	mg/kg	< 0.1					
Phorate	DETSC 3443*	0.1	mg/kg	< 0.1					
Demeton-S	DETSC 3443*	0.1	mg/kg	< 0.1					
Diazinon	DETSC 3443*	0.1	mg/kg	< 0.1					
Disulfoton	DETSC 3443*	0.1	mg/kg	< 0.1					
Methylparathion	DETSC 3443*	0.1	mg/kg	< 0.1					
Ronnel	DETSC 3443*	0.1	mg/kg	< 0.1					
Fenthion	DETSC 3443*	0.1	mg/kg	< 0.1					
Chlopyrifos	DETSC 3443*	0.1	mg/kg	< 0.1					
Trichlorinate	DETSC 3443*	0.1	mg/kg	< 0.1					
Merphos	DETSC 3443*	0.1	mg/kg	< 0.1					
Stirofos	DETSC 3443*	0.1	mg/kg	< 0.1					
Tokuthion	DETSC 3443*	0.1	mg/kg	< 0.1					
Fensulfothion	DETSC 3443*	0.1	mg/kg	< 0.1					
Bolstar	DETSC 3443*	0.1	mg/kg	< 0.1					
Azinphos methyl	DETSC 3443*	0.1	mg/kg	< 0.1					
Coumaphos	DETSC 3443*	0.1	mg/kg	< 0.1					
Triazines									
Atraton	DETSC 3445*	0.1	mg/kg	< 0.1					
Prometon	DETSC 3445*	0.1	mg/kg	< 0.1					
Simazine	DETSC 3445*	0.1	mg/kg	< 0.1					
Atrazine	DETSC 3445*	0.1	mg/kg	< 0.1					
Propazine	DETSC 3445*	0.1	mg/kg	< 0.1					
Terbuthylazine	DETSC 3445*	0.1	mg/kg	< 0.1					
Secbumeton	DETSC 3445*	0.1	mg/kg	< 0.1					
Symetryn	DETSC 3445*	0.1	mg/kg	< 0.1					
Ametryn	DETSC 3445*	0.1	mg/kg	< 0.1					
Prometryne	DETSC 3445*	0.1	mg/kg	< 0.1					
Terbutryn	DETSC 3445*	0.1	mg/kg	< 0.1					

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Summary of Chemical Analysis
Soil Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

Test	Method	LOD	Units				
			Lab No	1832990	1832991	1832992	1832993
			.Sample ID	BH04	BH05	BH05	BH06
			Depth	1.00	0.20	1.00	0.50
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s
Preparation							
Moisture Content	DETSC 1004	0.1	%	23		7.3	7.2
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	12		4.1	3.6
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	7.6		0.6	0.2
Cadmium	DETSC 2301#	0.1	mg/kg	1.2		0.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	29		14	15
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	110		12	13
Lead	DETSC 2301#	0.3	mg/kg	280		18	12
Mercury	DETSC 2325#	0.05	mg/kg	0.43		< 0.05	0.05
Nickel	DETSC 2301#	1	mg/kg	110		16	18
Selenium	DETSC 2301#	0.5	mg/kg	1.3		< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	560		44	38
Inorganics							
pH	DETSC 2008#		pH	6.3		7.4	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.6		0.1	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	30		1.2	< 0.5
Organic Matter (by calculation)	*	0.1	%	52		2.0	0.8
Sulphide	DETSC 2024*	10	mg/kg	12		16	< 10
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.22		0.03	0.02
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5
Aliphatic C16-C35	DETSC 3072#	4.9	mg/kg	< 4.9		< 4.9	< 4.9
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10

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Summary of Chemical Analysis
Soil Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

Test	Method	LOD	Units				
			Lab No	1832990	1832991	1832992	1832993
			.Sample ID	BH04	BH05	BH05	BH06
			Depth	1.00	0.20	1.00	0.50
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	0.1		< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.2		< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	0.4		< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	0.5		< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	3.6		< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	1.2		< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	11		< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	9.9		< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	5.7		< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	5.7		< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	6.0		< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	3.5		< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	7.1		< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	6.6		< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	1.0		< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	5.5		< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	68		< 1.6	< 1.6
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3
OCPs							
alpha-BHC	DETSC 3441*	0.1	mg/kg		< 0.1		
gamma-BHC (Lindane)	DETSC 3441*	0.1	mg/kg		< 0.1		
beta-BHC	DETSC 3441*	0.1	mg/kg		< 0.1		
delta-BHC	DETSC 3441*	0.1	mg/kg		< 0.1		
Heptachlor	DETSC 3441*	0.1	mg/kg		< 0.1		
Aldrin	DETSC 3441*	0.1	mg/kg		< 0.1		
Heptachlor epoxide	DETSC 3441*	0.1	mg/kg		< 0.1		
gamma-Chlordane	DETSC 3441*	0.1	mg/kg		< 0.1		
Endosulphan I & Alpha-chlorodane	DETSC 3441*	0.1	mg/kg		< 0.1		
4,4-DDE	DETSC 3441*	0.1	mg/kg		< 0.1		
Dieldrin	DETSC 3441*	0.1	mg/kg		< 0.1		
Endrin	DETSC 3441*	0.1	mg/kg		< 0.1		
Endosulphan II & 4,4-DDD	DETSC 3441*	0.1	mg/kg		< 0.1		
Endrin aldehyde	DETSC 3441*	0.1	mg/kg		< 0.1		
4,4-DDT	DETSC 3441*	0.1	mg/kg		< 0.1		
Endosulphan sulphate	DETSC 3441*	0.1	mg/kg		< 0.1		
Methoxychlor	DETSC 3441*	0.1	mg/kg		< 0.1		
Endrin ketone	DETSC 3441*	0.1	mg/kg		< 0.1		

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Summary of Chemical Analysis
Soil Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

Test	Method	LOD	Units				
			Lab No	1832990	1832991	1832992	1832993
			.Sample ID	BH04	BH05	BH05	BH06
			Depth	1.00	0.20	1.00	0.50
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s
OPPs							
Dichlorvos	DETSC 3443*	0.1	mg/kg		< 0.1		
Mevinphos	DETSC 3443*	0.1	mg/kg		< 0.1		
Demeton-O	DETSC 3443*	0.1	mg/kg		< 0.1		
Ethoprop	DETSC 3443*	0.1	mg/kg		< 0.1		
Naled	DETSC 3443*	0.1	mg/kg		< 0.1		
Phorate	DETSC 3443*	0.1	mg/kg		< 0.1		
Demeton-S	DETSC 3443*	0.1	mg/kg		< 0.1		
Diazinon	DETSC 3443*	0.1	mg/kg		< 0.1		
Disulfoton	DETSC 3443*	0.1	mg/kg		< 0.1		
Methylparathion	DETSC 3443*	0.1	mg/kg		< 0.1		
Ronnel	DETSC 3443*	0.1	mg/kg		< 0.1		
Fenthion	DETSC 3443*	0.1	mg/kg		< 0.1		
Chlopyrifos	DETSC 3443*	0.1	mg/kg		< 0.1		
Trichlorinate	DETSC 3443*	0.1	mg/kg		< 0.1		
Merphos	DETSC 3443*	0.1	mg/kg		< 0.1		
Stirofos	DETSC 3443*	0.1	mg/kg		< 0.1		
Tokuthion	DETSC 3443*	0.1	mg/kg		< 0.1		
Fensulfothion	DETSC 3443*	0.1	mg/kg		< 0.1		
Bolstar	DETSC 3443*	0.1	mg/kg		< 0.1		
Azinphos methyl	DETSC 3443*	0.1	mg/kg		< 0.1		
Coumaphos	DETSC 3443*	0.1	mg/kg		< 0.1		
Triazines							
Atraton	DETSC 3445*	0.1	mg/kg		< 0.1		
Prometon	DETSC 3445*	0.1	mg/kg		< 0.1		
Simazine	DETSC 3445*	0.1	mg/kg		< 0.1		
Atrazine	DETSC 3445*	0.1	mg/kg		< 0.1		
Propazine	DETSC 3445*	0.1	mg/kg		< 0.1		
Terbuthylazine	DETSC 3445*	0.1	mg/kg		< 0.1		
Secbumeton	DETSC 3445*	0.1	mg/kg		< 0.1		
Symetryn	DETSC 3445*	0.1	mg/kg		< 0.1		
Ametryn	DETSC 3445*	0.1	mg/kg		< 0.1		
Prometryne	DETSC 3445*	0.1	mg/kg		< 0.1		
Terbutryn	DETSC 3445*	0.1	mg/kg		< 0.1		

Summary of Chemical Analysis
Leachate Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

			Lab No	1832994	1832995	1832996	1832997	1832998	1832999
			.Sample ID	BH01	BH02	BH03	BH03	BH04	BH04
			Depth	0.50	0.50	0.20	1.00	0.50	1.00
			Other ID						
			Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Preparation									
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.2	0.97	1.0	1.2	0.82	0.40
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.10	0.26	0.04	< 0.03	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	2.3	20	21	18	14	22
Chromium, Dissolved	DETSC 2306	0.25	ug/l	3.0	1.7	1.0	1.1	1.0	0.64
Copper, Dissolved	DETSC 2306	0.4	ug/l	4.9	18	3.1	2.6	1.8	0.9
Lead, Dissolved	DETSC 2306	0.09	ug/l	13	19	4.6	3.2	2.8	1.3
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.22	1.2	1.6	1.5	0.79	1.1
Mercury, Dissolved (Low Level)	DETSC 2324	0.001	ug/l	0.018	0.035	0.0045	0.0078	0.022	0.0075
Nickel, Dissolved	DETSC 2306	0.5	ug/l	1.9	4.4	3.0	2.9	3.8	2.7
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.7	0.78	1.4	1.1	1.4	1.9
Zinc, Dissolved	DETSC 2306	1.3	ug/l	18	180	25	13	19	60
Inorganics									
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	6.55	55.0	60.2	51.7	38.3	58.9
Sulphate as SO4	DETSC 2055	0.1	mg/l	2.5	19	14	6.1	8.7	42
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Phenols									
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

Test	Method	LOD	Units		
			Lab No	1833000	1833001
			.Sample ID	BH05	BH06
			Depth	1.00	0.50
			Other ID		
			Sample Type	LEACHATE	LEACHATE
			Sampling Date	n/s	n/s
			Sampling Time	n/s	n/s
Preparation					
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.32	0.33
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	6.6	5.2
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.7	1.7
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.2	1.5
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.43	0.34
Mercury, Dissolved (Low Level)	DETSC 2324	0.001	ug/l	0.0041	0.0031
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	10	5.5
Inorganics					
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	18.2	14.3
Sulphate as SO4	DETSC 2055	0.1	mg/l	4.0	0.84
Sulphide	DETSC 2208	10	ug/l	< 10	< 10
Phenols					
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 21-07930
Client Ref P20-504
Contract Title P20-504 Sherrifhall South 1B

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1832985	BH01 0.50	SOIL	NAD	none	Colin Patrick
1832986	BH02 0.50	SOIL	NAD	none	Colin Patrick
1832987	BH03 0.20	SOIL	NAD	none	Colin Patrick
1832988	BH03 1.00	SOIL	NAD	none	Colin Patrick
1832989	BH04 0.50	SOIL	NAD	none	Colin Patrick
1832990	BH04 1.00	SOIL	NAD	none	Colin Patrick
1832992	BH05 1.00	SOIL	NAD	none	Colin Patrick
1832993	BH06 0.50	SOIL	NAD	none	Colin Patrick

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

DETS

Certificate of Analysis

Certificate Number	21-08434	*Issued:*	29-Apr-21

Client Mason Evans Partnership
95 Morrison Street
Glasgow
G5 8BE

Our Reference 21-08434

Client Reference P20-504

Order No P ROURKE

Contract Title P20-504 Sherrifhall South

Description 3 Soil samples, 2 Leachate samples.

Date Received 23-Apr-21

Date Started 23-Apr-21

Date Completed 29-Apr-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved B[redacted]

Adam Fenwick
Contracts Manager

UKAS
TESTING
2139

Summary of Chemical Analysis
UKWIR Samples

Our Ref 21-08434
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

Test	Method	LOD	Units	
			Lab No	1836349
			.Sample ID	R1
			Depth	1.40
			Other ID	
			Sample Type	SOIL
			Sampling Date	n/s
			Sampling Time	n/s
Conductivity	DETSC 2009	1	uS/cm	140
pH	DETSC 2008#		pH	6.4
Redox Potential	DETSC 2016*	-500	mV	190
Mineral Oil(C11-C20)	DETSC 3311	10	mg/kg	< 10
Mineral Oil(C20-C40)	DETSC 3311	10	mg/kg	< 10
Total VOCs	DETSC 3431*	0.01	mg/kg	< 0.01
BTEX + MTBE	DETSC 3431	0.01	mg/kg	< 0.01
Total SVOCs	DETSC 3433*	0.1	mg/kg	< 0.1
Phenol	DETSC 3433	0.1	mg/kg	< 0.1
Cresols and Chlorinated Phenols	DETSC 3433*	0.1	mg/kg	< 0.1
TICs (Ethers,Ketones,Aldehydes,Amines,Nitrobenzene)			mg/kg	None

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-08434
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

			Lab No	1836348	1836350
			.Sample ID	R1	R2
			Depth	0.50	1.00
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	n/s	n/s
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
Moisture Content	DETSC 1004	0.1	%	16	6.6
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	3.2	3.4
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.3	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	12	13
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	12	11
Lead	DETSC 2301#	0.3	mg/kg	27	12
Mercury	DETSC 2325#	0.05	mg/kg	0.07	< 0.05
Nickel	DETSC 2301#	1	mg/kg	12	16
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	53	31
Inorganics					
Conductivity	DETSC 2009	1	uS/cm		
pH	DETSC 2008#		pH	5.8	7.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	3.3	< 0.5
Organic Matter (by calculation)	*	0.1	%	5.7	0.7
Redox Potential	DETSC 2016*	-500	mV		
Sulphide	DETSC 2024*	10	mg/kg	40	< 10
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.06	0.02

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-08434
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

			Lab No	1836348	1836350
			.Sample ID	R1	R2
			Depth	0.50	1.00
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	n/s	n/s
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C16-C35	DETSC 3072#	4.9	mg/kg	< 4.9	< 4.9
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
EPH (C11-C20)	DETSC 3311	10	mg/kg		
EPH (C20-C40)	DETSC 3311	10	mg/kg		
PAHs					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 21-08434
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

			Lab No	1836351	1836352
			.Sample ID	R1	R2
			Depth	0.50	1.00
			Other ID		
			Sample Type	LEACHATE	LEACHATE
			Sampling Date	n/s	n/s
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
Leachate 2:1 250g Non-WAC	DETSC 1009*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.32	0.31
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Calcium, Dissolved	DETSC 2306	0.09	mg/l	3.5	1.8
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.33
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.7	1.1
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.1	1.3
Magnesium, Dissolved	DETSC 2306	0.02	mg/l	0.41	0.18
Mercury, Dissolved (Low Level)	DETSC 2324	0.001	ug/l	0.0066	0.0025
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.7	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	12	6.3
Inorganics					
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l	10.4	5.19
Sulphate as SO4	DETSC 2055	0.1	mg/l	3.0	1.8
Sulphide	DETSC 2208	10	ug/l	12	< 10
Phenols					
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 21-08434
Client Ref P20-504
Contract Title P20-504 Sherrifhall South

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1836348	R1 0.50	SOIL	NAD	none	Lee Kerridge
1836350	R2 1.00	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Appendix 11

Metal Bioavailability Assessment Tool (M-BAT)

Back

Calculate

Clear Data

INPUT DATA

ID	Location	Waterbody	Date	Measured Cu Concentration (dissolved) ($\mu g\ l^{-1}$)	Measured Zn Concentration (dissolved) ($\mu g\ l^{-1}$)	Measured Mn Concentration (dissolved) ($\mu g\ l^{-1}$)	Measured Ni Concentration (dissolved) ($\mu g\ l^{-1}$)	pH	DOC	Ca
1	TP06	River North Esk	12/04/2021	0.7	1.9		0.5	5.9	10	1.2
2	TP05	River North Esk	12/04/2021	1.2	3.7		0.5	7.4	10	1.2
3	TP04	River North Esk	12/04/2021	0.8	2.4		0.5	7.1	10	1.1
4	TP03	River North Esk	12/04/2021	0.9	3.8		0.5	6.3	10	1.7
5	TP02	River North Esk	12/04/2021	0.8	5.1		0.5	6.6	10	1.7
6	TP07	River North Esk	12/04/2021	1.1	4.1		0.5	7.1	10	1.4
7	TP11	River North Esk	12/04/2021	0.6	2.6		0.5	7.1	10	1.1
8	TP09	River North Esk	12/04/2021	1	2.6		0.5	7.2	10	1.4
9	TP10	River North Esk	12/04/2021	6	11		1.9	7.4	10	2.2
10	TP10	River North Esk	12/04/2021	2.5	20		1.7	6.7	10	15
11	TP12	River North Esk	12/04/2021	0.9	5.4		0.5	7.2	10	1.5
12	BH01	River North Esk	13/04/2021	4.9	18		1.9	7.2	10	2.3
13	BH02	River North Esk	13/04/2021	18	180		4.4	6.4	10	20
14	BH03	River North Esk	13/04/2021	3.1	25		3	7.4	10	21
15	BH03	River North Esk	13/04/2021	2.6	13		2.9	7.1	10	18
16	BH04	River North Esk	13/04/2021	1.8	19		3.8	6.5	10	14
17	BH04	River North Esk	13/04/2021	0.9	60		2.7	6.3	10	22
18	BH05	River North Esk	13/04/2021	1.7	10		0.5	7.4	10	6.6
19	BH06	River North Esk	13/04/2021	1.7	5.5		0.5	7.9	10	5.2
20	R01	River North Esk	15/04/2021	2.7	12		0.7	5.8	10	3.5
21	R02	River North Esk	20/04/2021	1.1	6.3		0.5	7.1	10	1.8
22										

ID	Location	RESULTS (Copper)				RESULTS (Zinc)				RESULTS (Mn)				RESULTS (Ni)			
		Site-specific PNEC Dissolved Copper ($\mu g\ l^{-1}$)	BioF	Bioavailable Copper Concentration ($\mu g\ l^{-1}$)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Zinc ($\mu g\ l^{-1}$)	BioF	Bioavailable Zinc Concentration ($\mu g\ l^{-1}$)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Manganese ($\mu g\ l^{-1}$)	BioF	Bioavailable Manganese Concentration ($\mu g\ l^{-1}$)	Risk Characterisation Ratio	Site-specific PNEC Dissolved Nickel ($\mu g\ l^{-1}$)	BioF	Bioavailable Nickel Concentration ($\mu g\ l^{-1}$)	Risk Characterisation Ratio
1	TP06	14.77	0.07	0.05	0.05	30.91	0.35	0.67	0.06	123.00	1.00			20.69	0.19	0.10	0.02
2	TP05	43.67	0.02	0.03	0.03	46.30	0.24	0.87	0.08	123.00	1.00			24.03	0.17	0.08	0.02
3	TP04	40.62	0.02	0.02	0.02	43.00	0.25	0.61	0.06	123.00	1.00			24.37	0.16	0.08	0.02
4	TP03	16.92	0.06	0.05	0.05	34.21	0.32	1.21	0.11	123.00	1.00			20.69	0.19	0.10	0.02
5	TP02	25.90	0.04	0.03	0.03	37.50	0.29	1.48	0.14	123.00	1.00			23.52	0.17	0.09	0.02
6	TP07	40.62	0.02	0.03	0.03	43.00	0.25	1.04	0.10	123.00	1.00			24.37	0.16	0.08	0.02
7	TP11	40.62	0.02	0.01	0.01	43.00	0.25	0.66	0.06	123.00	1.00			24.37	0.16	0.08	0.02
8	TP09	42.27	0.02	0.02	0.02	44.10	0.25	0.64	0.06	123.00	1.00			24.33	0.16	0.08	0.02
9	TP10	43.67	0.02	0.14	0.14	46.30	0.24	2.59	0.24	123.00	1.00			23.94	0.17	0.32	0.08
10	TP10	29.55	0.03	0.08	0.08	34.77	0.31	6.27	0.58	583.77	0.21			21.28	0.19	0.32	0.08
11	TP12	42.27	0.02	0.02	0.02	44.10	0.25	1.33	0.12	123.00	1.00			24.33	0.16	0.08	0.02
12	BH01	42.27	0.02	0.12	0.12	44.10	0.25	4.45	0.41	123.00	1.00			24.21	0.17	0.31	0.08
13	BH02	18.94	0.05	0.95	0.95	30.43	0.36	64.47	5.91	693.99	0.18			20.28	0.20	0.87	0.22
14	BH03	44.45	0.02	0.07	0.07	42.51	0.26	6.41	0.59	399.21	0.31			19.05	0.21	0.63	0.16
15	BH03	41.47	0.02	0.06	0.06	39.18	0.28	3.62	0.33	671.96	0.18			20.54	0.19	0.56	0.14
16	BH04	22.38	0.04	0.08	0.08	32.54	0.33	6.36	0.58	549.56	0.22			21.17	0.19	0.72	0.18
17	BH04	16.00	0.06	0.06	0.06	28.96	0.38	22.58	2.07	734.07	0.17			20.51	0.20	0.53	0.13
18	BH05	43.83	0.02	0.04	0.04	44.76	0.24	2.43	0.22	339.57	0.36			22.23	0.18	0.09	0.02
19	BH06	36.14	0.03	0.05	0.05	50.90	0.21	1.18	0.11	144.53	0.85			20.21	0.20	0.10	0.02
20	R01	14.74	0.07	0.18	0.18	30.47	0.36	4.29	0.39	130.78	0.94			20.46	0.20	0.14	0.03
21	R02	40.62	0.02	0.03	0.03	43.00	0.25	1.60	0.15	123.00	1.00			24.37	0.16	0.08	0.02
22																	

Pb Screening Tool 1.0

Back

Calculate

Clear Data

INPUT DATA						RESULTS (Pb)			
ID	Location	Waterbody	Date	Measured Pb Concentration (dissolved) ($\mu g\ l^{-1}$)	DOC	Site Specific PNEC Dissolved Pb ($\mu g\ l^{-1}$)	BioF	Available Pb ($\mu g\ l^{-1}$)	Risk Characterisation Ratio
1	TP06	River North E	12/04/2021	0.54	10.00	12.00	0.10	0.05	0.05
2	TP05	River North E	12/04/2021	0.66	10.00	12.00	0.10	0.07	0.06
3	TP04	River North E	12/04/2021	0.91	10.00	12.00	0.10	0.09	0.08
4	TP03	River North E	12/04/2021	0.33	10.00	12.00	0.10	0.03	0.03
5	TP02	River North E	12/04/2021	0.10	10.00	12.00	0.10	0.01	0.01
6	TP07	River North E	12/04/2021	0.54	10.00	12.00	0.10	0.05	0.05
7	TP11	River North E	12/04/2021	0.15	10.00	12.00	0.10	0.02	0.01
8	TP09	River North E	12/04/2021	0.25	10.00	12.00	0.10	0.03	0.02
9	TP10	River North E	12/04/2021	2.80	10.00	12.00	0.10	0.28	0.23
10	TP10	River North E	12/04/2021	0.80	10.00	12.00	0.10	0.08	0.07
11	TP12	River North E	12/04/2021	0.50	10.00	12.00	0.10	0.05	0.04
12	BH01	River North E	12/04/2022	13.00	10.00	12.00	0.10	1.30	1.08
13	BH02	River North E	12/04/2023	19.00	10.00	12.00	0.10	1.90	1.58
14	BH03	River North E	12/04/2024	4.60	10.00	12.00	0.10	0.46	0.38
15	BH03	River North E	12/04/2025	3.20	10.00	12.00	0.10	0.32	0.27
16	BH04	River North E	12/04/2026	2.80	10.00	12.00	0.10	0.28	0.23
17	BH04	River North E	12/04/2027	1.30	10.00	12.00	0.10	0.13	0.11
18	BH05	River North E	12/04/2028	1.20	10.00	12.00	0.10	0.12	0.10
19	BH06	River North E	12/04/2029	1.50	10.00	12.00	0.10	0.15	0.13
20	R01	River North E	12/04/2030	1.10	10.00	12.00	0.10	0.11	0.09
21	R02	River North E	12/04/2031	1.30	10.00	12.00	0.10	0.13	0.11

Appendix 12

R&D Publication 20 Remedial Targets Worksheet, Release 3.2

Level 3 - Groundwater

See Note

Input Parameters (using pull down menu)

	Variable	Value	Unit	Source
Contaminant		**Cadmium**		from Level 1
Target Concentration	C_T	**1.00E-04**	mg/l	from Level 1

Select analytical solution (click on brown cell below, then on pull-down menu)

Domenico - Steady state | **Equations in HRA publication**

Approach for simulating vertical dispersion: **Simulate vertical dispersion in 1 direction**

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: **Apply degradation rate to dissolved pollutants only**

	Variable	Value	Unit	Source of parameter value
Initial contaminant concentration in groundwater at plume core	C_0	2.60E-04	mg/l	*Maximum Conc. Recorded*
Half life for degradation of contaminant in water	$t_{1/2}$	9.99E+99	days	*Assumed no decay*
Calculated decay rate	λ	6.94E-101	$days^{-1}$	
Width of plume in aquifer at source (perpendicular to flow)	Sz	1.25E+04	m	*Width of Site*
Plume thickness at source	Sy	2.22E-01	m	*Conjectured - 10% saturated aquifer*
Saturated aquifer thickness	da	2.22E+00	m	*Max. recorded thickness (Soils Bores)*
Bulk density of aquifer materials	ρ	1.76E+03	g/cm^3	*Gravel (Anvals Valve PVT Ltd)*
Effective porosity of aquifer	n	4.20E-01	fraction	*Freeze and Cherry (1979) for gravel*
Hydraulic gradient	i	8.36E-03	fraction	*Calculated between BH06 and BH01*
Hydraulic conductivity of aquifer	K	8.64E+01	m/d	*Bear (1972) Sand and Gravel*
Distance to compliance point	x	7.20E+02	m	*Distance from site to compliance point alor*
Distance (lateral) to compliance point perpendicular to flow direction	z		m	
Distance (depth) to compliance point perpendicular to flow direction	y		m	
Time since pollutant entered groundwater	t	1.00E+100	days	*time variant options only*
Parameters values determined from options				
Partition coefficient	Kd	3.98E+03	l/kg	*see options*
Longitudinal dispersivity	ax	7.20E+01	m	*see options*
Transverse dispersivity	az	7.20E+00	m	*see options*
Vertical dispersivity	ay	7.20E-01	m	*see options*

Calculated Parameters

	Variable	Value	Unit
Groundwater flow velocity	v	1.72E+00	m/d
Retardation factor	Rf	1.67E+07	fraction
Decay rate used	λ	4.16E-108	d^{-1}
Rate of contaminant flow due to retardation	u	1.03E-07	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	C_{ED}	1.43E-06	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	**AF**	**1.82E+02**	

Remedial Targets

Remedial Target	**1.82E-02**	**mg/l**	For comparison with measured groundwater concentration.
Domenico - Steady state			
Distance to compliance point	**720**	**m**	
Concentration of contaminant at compliance point C_{ED}/C_0	**1.43E-06**	**mg/l**	Domenico - Steady state

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target.
The recommended value for time when calculating the remedial target is 9.9E+99.

Select Method for deriving Partition Co-efficient (using pull down menu)

User specified value for partition coefficient

Entry if specify partition coefficient (option)			
Soil water partition coefficient	Kd	3.98E+03	l/kg
Entry for non-polar organic chemicals (option)			
Fraction of organic carbon in aquifer	foc		fraction
Organic carbon partition coefficient	Koc		l/kg
Entry for ionic organic chemicals (option)			
Sorption coefficient for related species	$K_{oc,n}$		l/kg
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg
pH value	pH		
acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	3.98E+03	l/kg

Define dispersivity (click brown cell and use pull down list)

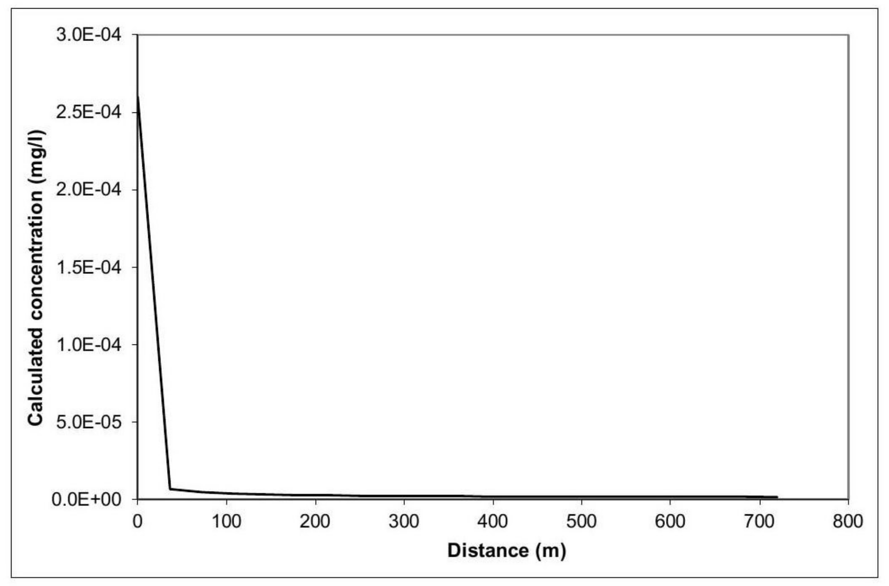
Dispersivities 10%, 1%, 0.1% of pathway length

		Enter value	Calc value	Xu & Eckstein	m
Longitudinal dispersivity	**ax**	0.00E+00	7.20E+01	1.05E+01	m
Transverse dispersivity	**az**	0.00E+00	7.20E+00	1.05E+00	m
Vertical dispersivity	**ay**	0.00E+00	7.20E-01	1.05E-01	

Note values of dispersivity must be > 0

For calculated value, assumes ax = 0.1 *x, az = 0.01 * x, ay = 0.001 * x

Xu & Eckstein (1995) report $ax = 0.83(\log_{10}x)^{2.414}$; az = ax/10, ay = ax/100 are assumed



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best desribed by an electron limited degradation such as oxidation by O2, NO3, SO4 etc than an alternative solution should be used

Site being assessed:	Sherrifhall South
Completed by:	PR
Date:	########
Version:	3.2

Calculated concentrations for distance-concentration graph

Domenico - Steady state
From calculation sheet

Distance	**Concentration**
	mg/l
0	**2.6E-04**
36.0	**6.40E-06**
72.0	**4.52E-06**
108.0	**3.69E-06**
144.0	**3.20E-06**
180.0	**2.86E-06**
216.0	**2.61E-06**
252.0	**2.42E-06**
288.0	**2.26E-06**
324.0	**2.13E-06**
360.0	**2.02E-06**
396.0	**1.93E-06**
432.0	**1.85E-06**
468.0	**1.77E-06**
504.0	**1.71E-06**
540.0	**1.65E-06**
576.0	**1.60E-06**
612.0	**1.55E-06**
648.0	**1.51E-06**
684.0	**1.47E-06**
720.0	**1.43E-06**

R&D Publication 20 Remedial Targets Worksheet, Release 3.2

Environment Agency

Level 3 - Groundwater

See Note

Input Parameters (using pull down menu)

Parameter	Variable	Value	Unit	Source
Contaminant		Lead		from Level 1
Target Concentration	C_T	1.20E-03	mg/l	from Level 1

Select analytical solution (click on brown cell below, then on pull-down menu)

Domenico - Steady state | Equations in HRA publication

Approach for simulating vertical dispersion: Simulate vertical dispersion in 1 direction

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

Parameter	Variable	Value	Unit	Source of parameter value
Initial contaminant concentration in groundwater at plume core	C_0	1.20E-02	mg/l	*max bioavailable concentration*
Half life for degradation of contaminant in water	$t_{1/2}$	9.90E+99	days	*Assumed no decay*
Calculated decay rate	λ	7.00E-101	$days^{-1}$	
Width of plume in aquifer at source (perpendicular to flow)	Sz	1.25E+04	m	*Width of Site*
Plume thickness at source	Sy	2.22E-01	m	*Conjectured - 10% saturated aquifer*
Saturated aquifer thickness	da	2.22E+00	m	*Max. recorded thickness (Soils Bores)*
Bulk density of aquifer materials	ρ	1.76E+03	g/cm^3	*Gravel (Anvals Valve PVT Ltd)*
Effective porosity of aquifer	n	4.20E-01	fraction	*Freeze and Cherry (1979) for gravel*
Hydraulic gradient	i	8.36E-03	fraction	*Calculated between BH06 and BH01*
Hydraulic conductivity of aquifer	K	8.64E+01	m/d	*Bear (1972) Sand and Gravel*
Distance to compliance point	x	7.20E+02	m	*Distance from site to compliance point alon*
Distance (lateral) to compliance point perpendicular to flow direction	z	[redacted]	m	
Distance (depth) to compliance point perpendicular to flow direction	y		m	
Time since pollutant entered groundwater	t		days	*time variant options only*
Parameters values determined from options				
Partition coefficient	Kd	1.58E+04	l/kg	*see options*
Longitudinal dispersivity	ax	7.20E+01	m	*see options*
Transverse dispersivity	az	7.20E+00	m	*see options*
Vertical dispersivity	ay	7.20E-01	m	*see options*

Calculated Parameters

Parameter	Variable	Value	Unit
Groundwater flow velocity	v	1.72E+00	m/d
Retardation factor	Rf	6.64E+07	fraction
Decay rate used	λ	1.05E-108	d^{-1}
Rate of contaminant flow due to retardation	u	2.59E-08	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	C_{ED}	6.60E-05	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	**AF**	**1.82E+02**	

Remedial Targets

Remedial Target	**2.18E-01**	**mg/l**	For comparison with measured groundwater concentration.
Domenico - Steady state			
Distance to compliance point	**720**	**m**	
Concentration of contaminant at compliance point C_{ED}/C_0	**6.60E-05**	**mg/l**	Domenico - Steady state

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target.
The recommended value for time when calculating the remedial target is 9.9E+99.

Select Method for deriving Partition Co-efficient (using pull down menu)

User specified value for partition coefficient

Parameter	Variable	Value	Unit
Entry if specify partition coefficient (option)			
Soil water partition coefficient	Kd	1.58E+04	l/kg
Entry for non-polar organic chemicals (option)			
Fraction of organic carbon in aquifer	foc	[redacted]	fraction
Organic carbon partition coefficient	Koc		l/kg
Entry for ionic organic chemicals (option)			
Sorption coefficient for related species	$K_{oc,n}$	[redacted]	l/kg
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg
pH value	pH		
acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	1.58E+04	l/kg

Define dispersivity (click brown cell and use pull down list)

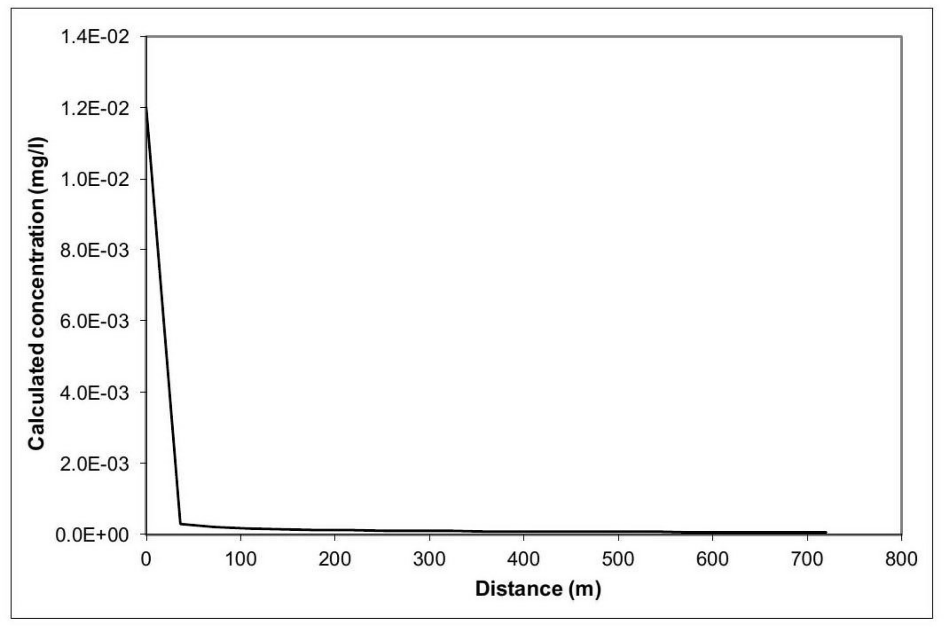
Dispersivities 10%, 1%, 0.1% of pathway length

		Enter value	Calc value	Xu & Eckstein	m
Longitudinal dispersivity	**ax**	0.00E+00	7.20E+01	1.05E+01	m
Transverse dispersivity	**az**	0.00E+00	7.20E+00	1.05E+00	m
Vertical dispersivity	**ay**	0.00E+00	7.20E-01	1.05E-01	

Note values of dispersivity must be > 0

For calculated value, assumes ax = 0.1 *x, az = 0.01 * x, ay = 0.001 * x

Xu & Eckstein (1995) report ax = $0.83(\log_{10}x)^{2.414}$; az = ax/10, ay = ax/100 are assumed



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best desribed by an electron limited degradation such as oxidation by O2, NO3, SO4 etc than an alternative solution should be used

Site being assessed:	Sherrifhall South
Completed by:	PR
Date:	########
Version:	3.2

Calculated concentrations for distance-concentration graph

Domenico - Steady state
From calculation sheet

Distance	Concentration
	mg/l
0	1.2E-02
36.0	2.95E-04
72.0	2.09E-04
108.0	1.70E-04
144.0	1.48E-04
180.0	1.32E-04
216.0	1.21E-04
252.0	1.12E-04
288.0	1.04E-04
324.0	9.84E-05
360.0	9.34E-05
396.0	8.90E-05
432.0	8.52E-05
468.0	8.19E-05
504.0	7.89E-05
540.0	7.62E-05
576.0	7.38E-05
612.0	7.16E-05
648.0	6.96E-05
684.0	6.77E-05
720.0	6.60E-05

R&D Publication 20 Remedial Targets Worksheet, Release 3.2

Level 3 - Groundwater

See Note

Environment Agency

Input Parameters (using pull down menu)

	Variable	Value	Unit	Source
Contaminant		Selenium		from Level 1
Target Concentration	C_T	2.50E-04	mg/l	from Level 1

Select analytical solution (click on brown cell below, then on pull-down menu)

Domenico - Steady state — **Equations in HRA publication**

Approach for simulating vertical dispersion: **Simulate vertical dispersion in 1 direction**

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: **Apply degradation rate to dissolved pollutants only**

	Variable	Value	Unit	Source of parameter value
Initial contaminant concentration in groundwater at plume core	C_0	1.90E-03	mg/l	*BH04/TP10 Max Concentration*
Half life for degradation of contaminant in water	$t_{1/2}$	9.00E+99	days	*Metal - assumed no decay*
Calculated decay rate	λ	7.70E-101	$days^{-1}$	
Width of plume in aquifer at source (perpendicular to flow)	Sz	1.25E+04	m	*Width of Site*
Plume thickness at source	Sy	2.22E-01	m	*Conjectured - 10% saturated aquifer*
Saturated aquifer thickness	da	2.22E+00	m	*Max. recorded thickness (Soils Bores)*
Bulk density of aquifer materials	ρ	1.76E+03	g/cm^3	*Gravel (Anvals Valve PVT Ltd)*
Effective porosity of aquifer	n	4.20E-01	fraction	*Freeze and Cherry (1979) for gravel*
Hydraulic gradient	i	8.36E-03	fraction	*Calculated between BH06 and BH01*
Hydraulic conductivity of aquifer	K	8.64E+01	m/d	*Bear (1972) Sand and Gravel*
Distance to compliance point	x	7.20E+02	m	*Distance from site to compliance point alor*
Distance (lateral) to compliance point perpendicular to flow direction	z		m	
Distance (depth) to compliance point perpendicular to flow direction	y		m	
Time since pollutant entered groundwater	t	1.00E+100	days	*time variant options only*
Parameters values determined from options				
Partition coefficient	Kd	2.00E+03	l/kg	*see options*
Longitudinal dispersivity	ax	7.20E+01	m	*see options*
Transverse dispersivity	az	7.20E+00	m	*see options*
Vertical dispersivity	ay	7.20E-01	m	*see options*

Select Method for deriving Partition Co-efficient (using pull down menu)

User specified value for partition coefficient

Entry if specify partition coefficient (option)			
Soil water partition coefficient	Kd	2.00E+03	l/kg
Entry for non-polar organic chemicals (option)			
Fraction of organic carbon in aquifer	foc		fraction
Organic carbon partition coefficient	Koc		l/kg
Entry for ionic organic chemicals (option)			
Sorption coefficient for related species	$K_{oc,n}$		l/kg
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg
pH value	pH		
acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	2.00E+03	l/kg

Define dispersivity (click brown cell and use pull down list)

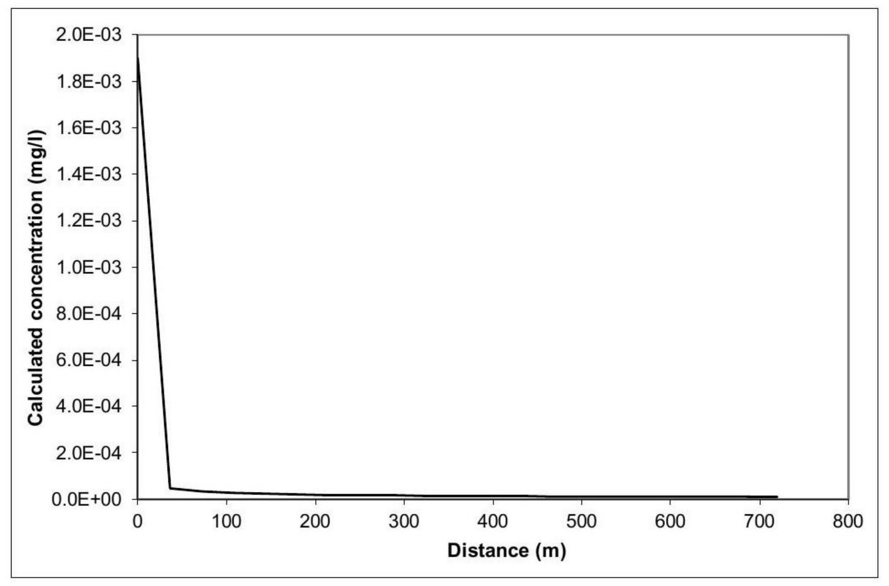
Dispersivities 10%, 1%, 0.1% of pathway length

		Enter value	Calc value	Xu & Eckstein	m
Longitudinal dispersivity	**ax**	0.00E+00	7.20E+01	1.05E+01	m
Transverse dispersivity	**az**	0.00E+00	7.20E+00	1.05E+00	m
Vertical dispersivity	**ay**	0.00E+00	7.20E-01	1.05E-01	

Note values of dispersivity must be > 0

For calculated value, assumes ax = 0.1 *x, az = 0.01 * x, ay = 0.001 * x

Xu & Eckstein (1995) report ax = $0.83(\log_{10}x)^{2.414}$; az = ax/10, ay = ax/100 are assumed



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Calculated concentrations for distance-concentration graph

Domenico - Steady state
From calculation sheet

Distance	Concentration
	mg/l
0	1.9E-03
36.0	4.67E-05
72.0	3.30E-05
108.0	2.70E-05
144.0	2.34E-05
180.0	2.09E-05
216.0	1.91E-05
252.0	1.77E-05
288.0	1.65E-05
324.0	1.56E-05
360.0	1.48E-05
396.0	1.41E-05
432.0	1.35E-05
468.0	1.30E-05
504.0	1.25E-05
540.0	1.21E-05
576.0	1.17E-05
612.0	1.13E-05
648.0	1.10E-05
684.0	1.07E-05
720.0	1.05E-05

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best desribed by an electron limited degradation such as oxidation by O2, NO3, SO4 etc than an alternative solution should be used

Calculated Parameters

	Variable		
Groundwater flow velocity	v	1.72E+00	m/d
Retardation factor	Rf	8.36E+06	fraction
Decay rate used	λ	9.21E-108	d^{-1}
Rate of contaminant flow due to retardation	u	2.06E-07	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	C_{ED}	1.05E-05	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	**AF**	**1.82E+02**	

Site being assessed:	Sherrifhall South
Completed by:	PR
Date:	########
Version:	3.2

Remedial Targets

Remedial Target		**4.54E-02**	**mg/l**	For comparison with measured groundwater concentration.
Domenico - Steady state				
Distance to compliance point		**720**	**m**	
Concentration of contaminant at compliance point	C_{ED}/C_0	**1.05E-05**	**mg/l**	Domenico - Steady state

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target.
The recommended value for time when calculating the remedial target is 9.9E+99.

R&D Publication 20 Remedial Targets Worksheet, Release 3.2

Environment Agency

Level 3 - Groundwater

See Note

Input Parameters (using pull down menu)

	Variable	Value	Unit	Source
Contaminant		Zinc		from Level 1
Target Concentration	C_T	1.02E-02	mg/l	from Level 1

Select analytical solution (click on brown cell below, then on pull-down menu)

Domenico - Steady state — Equations in HRA publication

Approach for simulating vertical dispersion: Simulate vertical dispersion in 1 direction

Select nature of decay rate (click on brown cell below, then on pull-down menu)

Approach for simulating degradation of pollutants: Apply degradation rate to dissolved pollutants only

	Variable	Value	Unit	Source of parameter value
Initial contaminant concentration in groundwater at plume core	C_0	6.45E-02	mg/l	*max bioavailable concentration*
Half life for degradation of contaminant in water	$t_{1/2}$	9.00E+99	days	*Metal - assumed no decay*
Calculated decay rate	λ	7.70E-101	$days^{-1}$	
Width of plume in aquifer at source (perpendicular to flow)	Sz	1.25E+04	m	*Width of Site*
Plume thickness at source	Sy	2.22E-01	m	*Conjectured - 10% saturated aquifer*
Saturated aquifer thickness	da	2.22E+00	m	*Max. recorded thickness (Soils Bores)*
Bulk density of aquifer materials	ρ	1.76E+03	g/cm^3	*Gravel (Anvals Valve PVT Ltd)*
Effective porosity of aquifer	n	4.20E-01	fraction	*Freeze and Cherry (1979) for gravel*
Hydraulic gradient	i	8.36E-03	fraction	*Calculated between BH06 and BH01*
Hydraulic conductivity of aquifer	K	8.64E+01	m/d	*Bear (1972) Sand and Gravel*
Distance to compliance point	x	7.20E+02	m	*Distance from site to compliance point alon*
Distance (lateral) to compliance point perpendicular to flow direction	z		m	
Distance (depth) to compliance point perpendicular to flow direction	y		m	
Time since pollutant entered groundwater	t	1.00E+100	days	*time variant options only*
Parameters values determined from options				
Partition coefficient	Kd	3.07E+04	l/kg	*see options*
Longitudinal dispersivity	ax	7.20E+01	m	*see options*
Transverse dispersivity	az	7.20E+00	m	*see options*
Vertical dispersivity	ay	7.20E-01	m	*see options*

Select Method for deriving Partition Co-efficient (using pull down menu)

User specified value for partition coefficient

Entry if specify partition coefficient (option)			
Soil water partition coefficient	Kd	3.07E+04	l/kg
Entry for non-polar organic chemicals (option)			
Fraction of organic carbon in aquifer	foc		fraction
Organic carbon partition coefficient	Koc		l/kg
Entry for ionic organic chemicals (option)			
Sorption coefficient for related species	$K_{oc,n}$		l/kg
Sorption coefficient for ionised species	$K_{oc,i}$		l/kg
pH value	pH		
acid dissociation constant	pKa		
Fraction of organic carbon in aquifer	foc		fraction
Soil water partition coefficient	Kd	3.07E+04	l/kg

Define dispersivity (click brown cell and use pull down list)

Dispersivities 10%, 1%, 0.1% of pathway length

		Enter value	Calc value	Xu & Eckstein	m
Longitudinal dispersivity	**ax**	0.00E+00	7.20E+01	1.05E+01	m
Transverse dispersivity	**az**	0.00E+00	7.20E+00	1.05E+00	m
Vertical dispersivity	**ay**	0.00E+00	7.20E-01	1.05E-01	

Note values of dispersivity must be > 0

For calculated value, assumes ax = 0.1 *x, az = 0.01 * x, ay = 0.001 * x

Xu & Eckstein (1995) report ax = $0.83(\log_{10}x)^{2.414}$; az = ax/10, ay = ax/100 are assumed

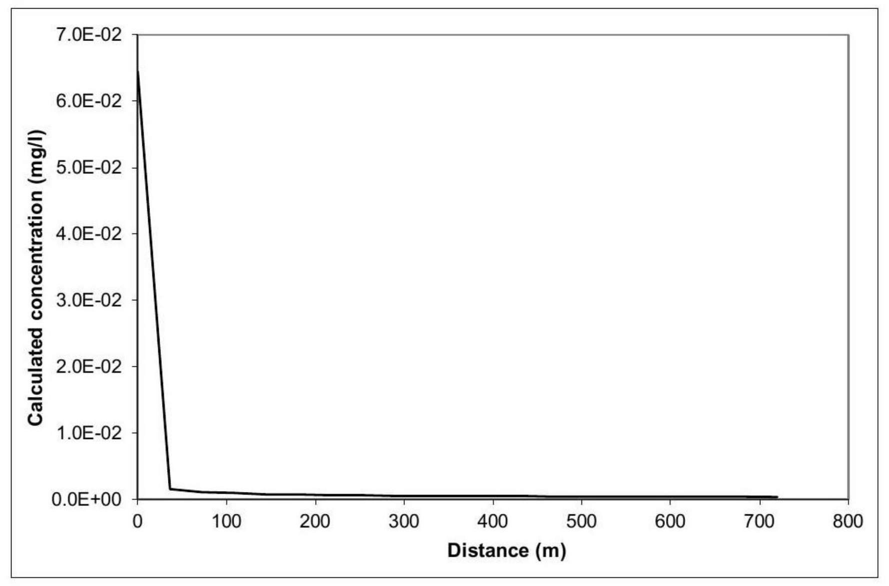
Calculated Parameters

	Variable		
Groundwater flow velocity	v	1.72E+00	m/d
Retardation factor	Rf	1.28E+08	fraction
Decay rate used	λ	6.00E-109	d^{-1}
Rate of contaminant flow due to retardation	u	1.34E-08	m/d
Contaminant concentration at distance x, assuming one-way vertical dispersion	C_{ED}	3.55E-04	mg/l
Attenuation factor (one way vertical dispersion, CO/CED)	**AF**	**1.82E+02**	

Remedial Targets

Remedial Target	**1.85E+00**	**mg/l**	For comparison with measured groundwater concentration.
Domenico - Steady state			
Distance to compliance point	**720**	**m**	
Concentration of contaminant at compliance point C_{ED}/C_0	**3.55E-04**	**mg/l**	Domenico - Steady state

Care should be used when calculating remedial targets using the time variant options as this may result in an overestimate of the remedial target.
The recommended value for time when calculating the remedial target is 9.9E+99.



Note graph assumes plume disperses vertically in one direction only. An alternative solution assuming the centre of the plume is located at the mid-depth of the aquifer is presented in the calculation sheets.

Note

This sheet calculates the Level 3 remedial target for groundwater, based on the distance to the receptor or compliance located down hydraulic gradient of the source Three solution methods are included, the preferred option is Ogata Banks.

By setting a long travel time it will give the steady state solution, which should be used to calculate remedial targets.

The measured groundwater concentration should be compared with the Level 3 remedial target to determine the need for further action.

Note if contaminant is not subject to first order degradation, then set half life as 9.0E+99.

This worksheet should be used if pollutant transport and degradation is best described by a first order reaction. If degradation is best desribed by an electron limited degradation such as oxidation by O2, NO3, SO4 etc than an alternative solution should be used

Site being assessed:	Sherrifhall South
Completed by:	PR
Date:	########
Version:	3.2

Calculated concentrations for distance-concentration graph

Domenico - Steady state
From calculation sheet

Distance	Concentration
	mg/l
0	6.4E-02
36.0	1.59E-03
72.0	1.12E-03
108.0	9.16E-04
144.0	7.93E-04
180.0	7.09E-04
216.0	6.47E-04
252.0	5.99E-04
288.0	5.61E-04
324.0	5.29E-04
360.0	5.02E-04
396.0	4.78E-04
432.0	4.58E-04
468.0	4.40E-04
504.0	4.24E-04
540.0	4.10E-04
576.0	3.97E-04
612.0	3.85E-04
648.0	3.74E-04
684.0	3.64E-04
720.0	3.55E-04

Appendix 13

MATtest Limited
materials testing & consultancy

LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

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Certificate No :	**21/731 - 01**
To :	**Peter Rourke**
Client :	**Mason Evans Partnership** The Piazza 95 Morrison Street Glasgow G5 8BE

Dear Sirs,

LABORATORY TESTING OF SOIL

Introduction

We refer to samples taken from Sheriffhall South and delivered to our laboratory on 21st June 2021.

Material & Source

Sample Reference	:	See Report Plates
Sampled By	:	Client
Sampling Certificate	:	Not Supplied
Location	:	See Report Plates
Description	:	See Page 2
Date Sampled	:	Not Supplied
Date Tested	:	21st June 2021 Onwards
Source	:	Sheriffhall South

Test Results;

As Detailed On Page 2 to Page 10 inclusive

Comments;

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

Remarks;

[redacted]

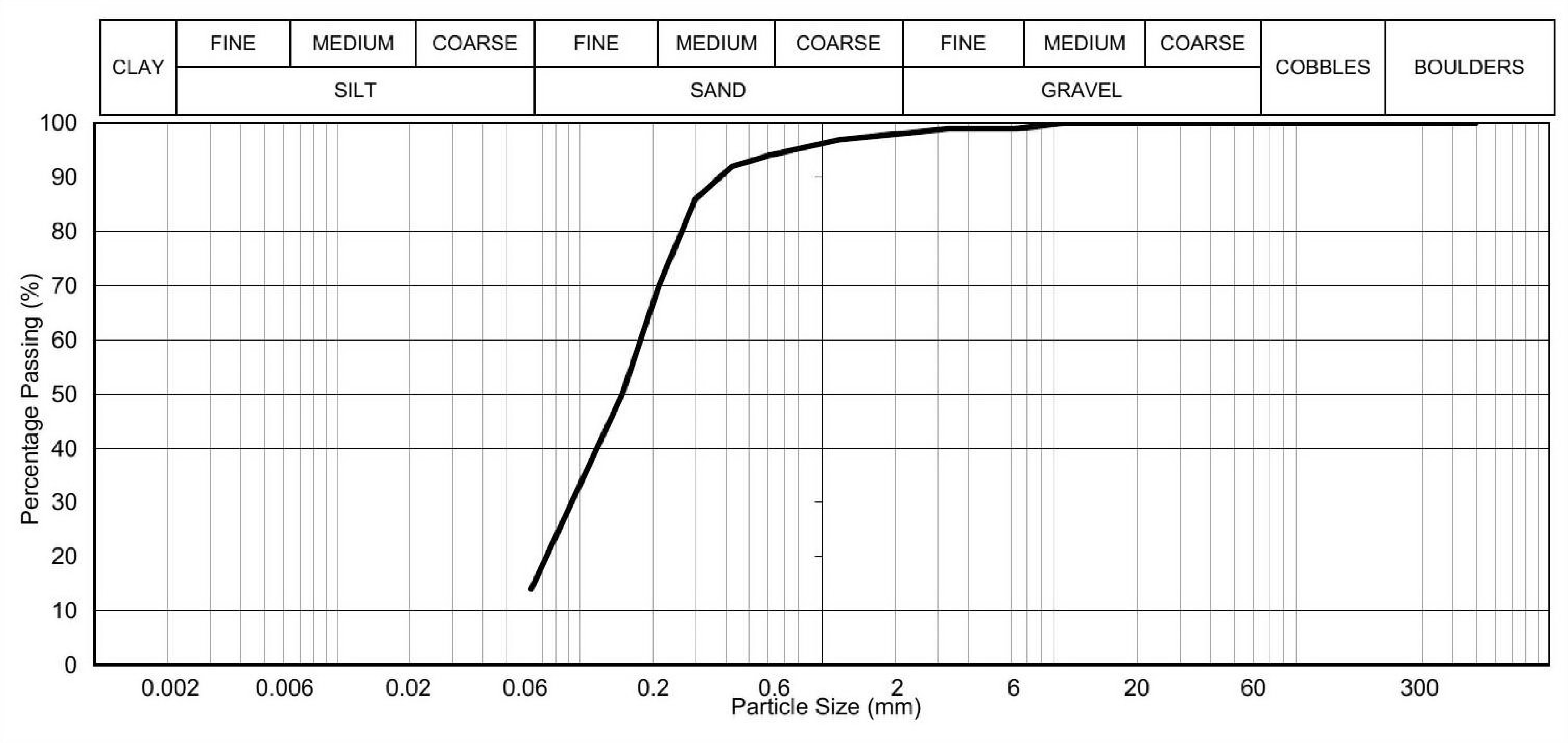
Date 30/06/2021

UKAS TESTING
2643

BOREHOLE	SAMPLE	DEPTH (m)	SAMPLE DESCRIPTION
BH01	B	1.00	Brown slightly gravelly slightly clayey silty fine to coarse SAND with root fibres. Gravel is fine to medium.
BH02	B	2.20	Brown slightly silty gravelly fine to coarse SAND. Gravel is fine to coarse.
BH03	B	3.20	Brown slightly clayey silty gravelly fine to coarse SAND. Gravel is fine to coarse.
BH04	B	4.20	Brown slightly gravelly silty fine to medium SAND. Gravel is fine.
BH05	B	1.00	Brown slightly gravelly silty fine to coarse SAND. Gravel is fine to medium.
BH06	B	2.20	Brown slightly gravelly silty fine to coarse SAND. Gravel is fine.
R01	DS	3.00-3.70	Brown slightly gravelly silty fine to coarse SAND. Gravel is fine to medium.
R02	DS	3.10-3.70	Dark brown / dark grey clayey fine to coarse ASHFILL with root fibres.

SUMMARY OF SAMPLE DESCRIPTIONS

Borehole	BH01
Sample	B
Depth (m)	1.00



SIEVING			
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable Lower %	Specification Not Applicable Upper %
500.0	100	-	-
300.0	100	-	-
125.0	100	-	-
90.0	100	-	-
75.0	100	-	-
63.0	100	-	-
50.0	100	-	-
37.5	100	-	-
28.0	100	-	-
20.0	100	-	-
14.0	100	-	-
10.0	100	-	-
6.30	99	-	-
5.00	99	-	-
3.35	99	-	-
2.00	98	-	-
1.18	97	-	-
0.600	94	-	-
0.425	92	-	-
0.300	86	-	-
0.212	70	-	-
0.150	50	-	-
0.063	14	-	-

SEDIMENTATION	
Particle Size (mm)	Percentage Passing (%)
0.020	
0.006	
0.002	

GRADING CLASSIFICATION (SHW TABLE 6/2)
-
Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

PERCENTAGE SOIL TYPES				
CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	14	84	2	0

UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)		
D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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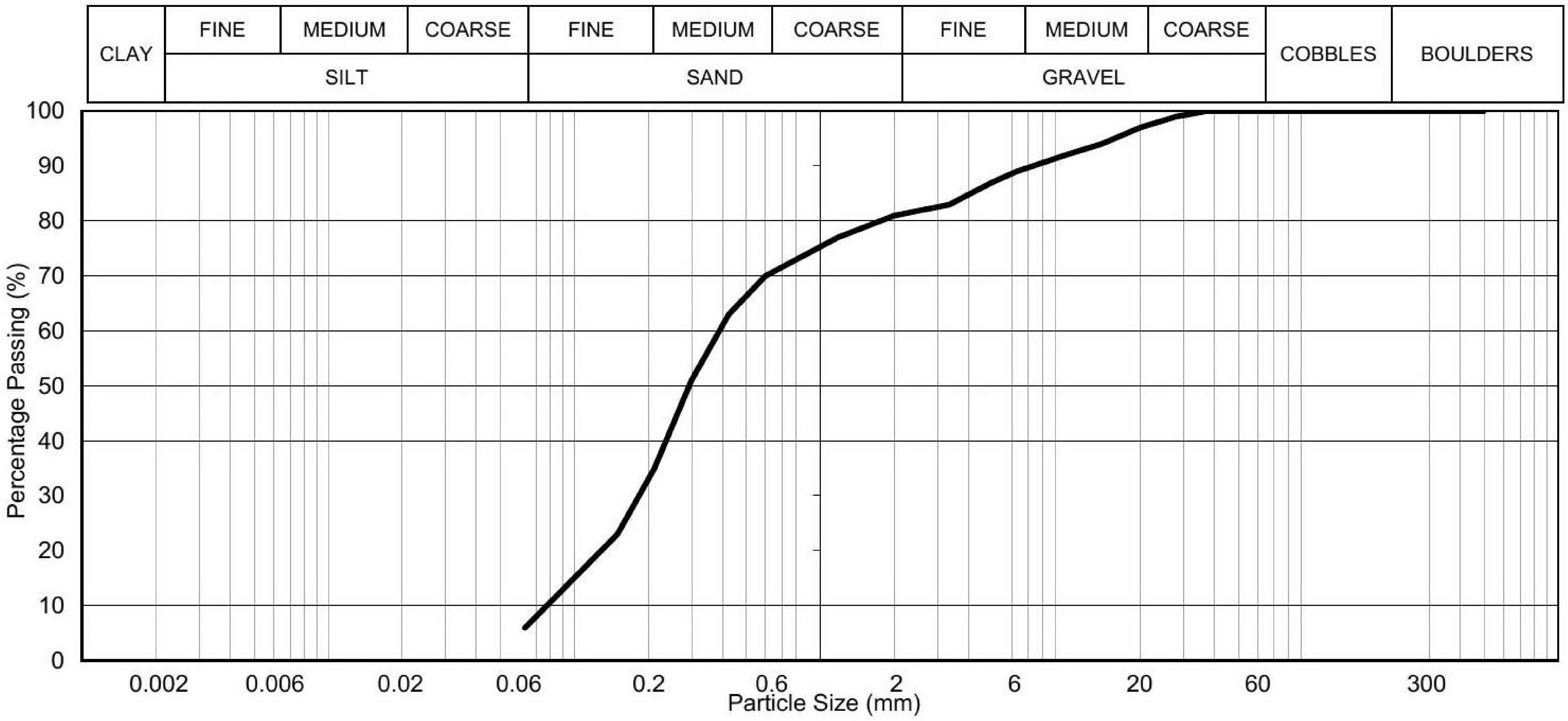
Borehole	BH02
Sample	B
Depth (m)	2.20



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-		
63.0	100	-	-		
50.0	100	-	-		
37.5	100	-	-		
28.0	99	-	-		
20.0	97	-	-		
14.0	94	-	-		
10.0	92	-	-		
6.30	89	-	-		
5.00	87	-	-		
3.35	83	-	-		
2.00	81	-	-		
1.18	77	-	-		
0.600	70	-	-		
0.425	63	-	-		
0.300	51	-	-		
0.212	35	-	-		
0.150	23	-	-		
0.063	6	-	-		

GRADING CLASSIFICATION (SHW TABLE 6/2)

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Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

PERCENTAGE SOIL TYPES				
CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	6	75	19	0

UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)		
D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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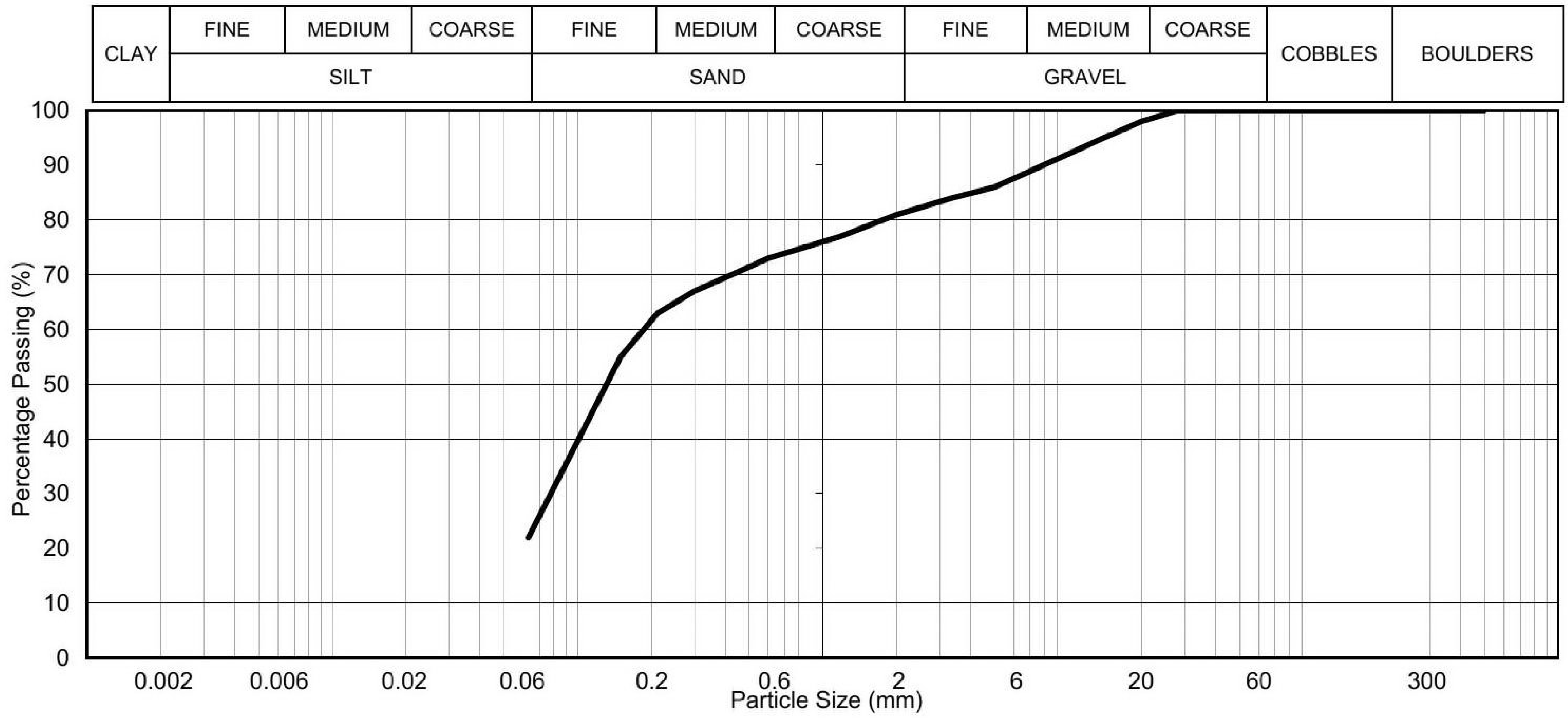
Borehole	BH03
Sample	B
Depth (m)	3.20



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-		
63.0	100	-	-		
50.0	100	-	-		
37.5	100	-	-		
28.0	100	-	-		
20.0	98	-	-		
14.0	95	-	-		
10.0	92	-	-		
6.30	88	-	-		
5.00	86	-	-		
3.35	84	-	-		
2.00	81	-	-		
1.18	77	-	-		
0.600	73	-	-		
0.425	70	-	-		
0.300	67	-	-		
0.212	63	-	-		
0.150	55	-	-		
0.063	22	-	-		

GRADING CLASSIFICATION (SHW TABLE 6/2)
-
Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

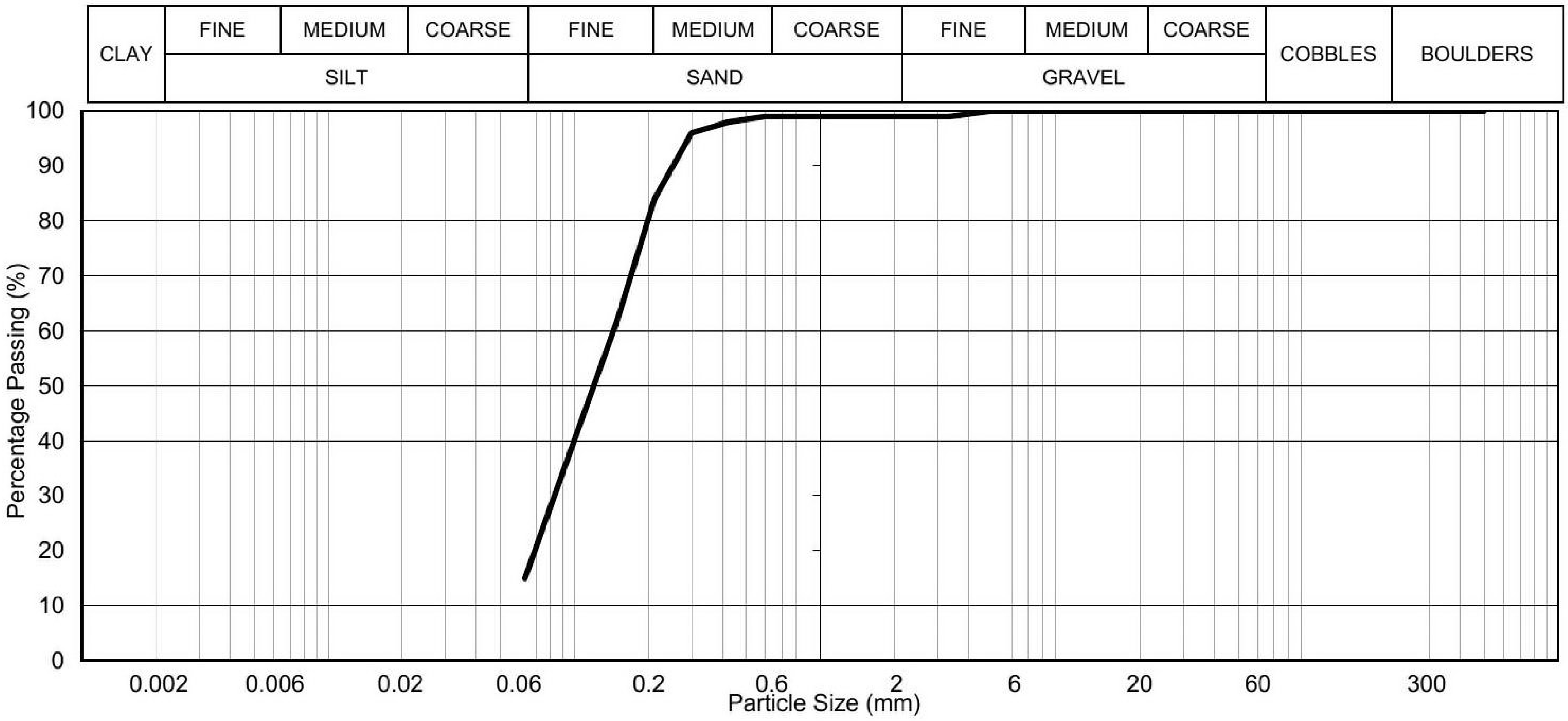
PERCENTAGE SOIL TYPES				
CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	22	59	19	0

UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)		
D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

Borehole	BH04
Sample	B
Depth (m)	4.20



SIEVING			
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable	
		Lower %	Upper %
500.0	100	-	-
300.0	100	-	-
125.0	100	-	-
90.0	100	-	-
75.0	100	-	-
63.0	100	-	-
50.0	100	-	-
37.5	100	-	-
28.0	100	-	-
20.0	100	-	-
14.0	100	-	-
10.0	100	-	-
6.30	100	-	-
5.00	100	-	-
3.35	99	-	-
2.00	99	-	-
1.18	99	-	-
0.600	99	-	-
0.425	98	-	-
0.300	96	-	-
0.212	84	-	-
0.150	62	-	-
0.063	15	-	-

SEDIMENTATION	
Particle Size (mm)	Percentage Passing (%)
0.020	
0.006	
0.002	

GRADING CLASSIFICATION (SHW TABLE 6/2)

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Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

PERCENTAGE SOIL TYPES

CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	15	84	1	0

UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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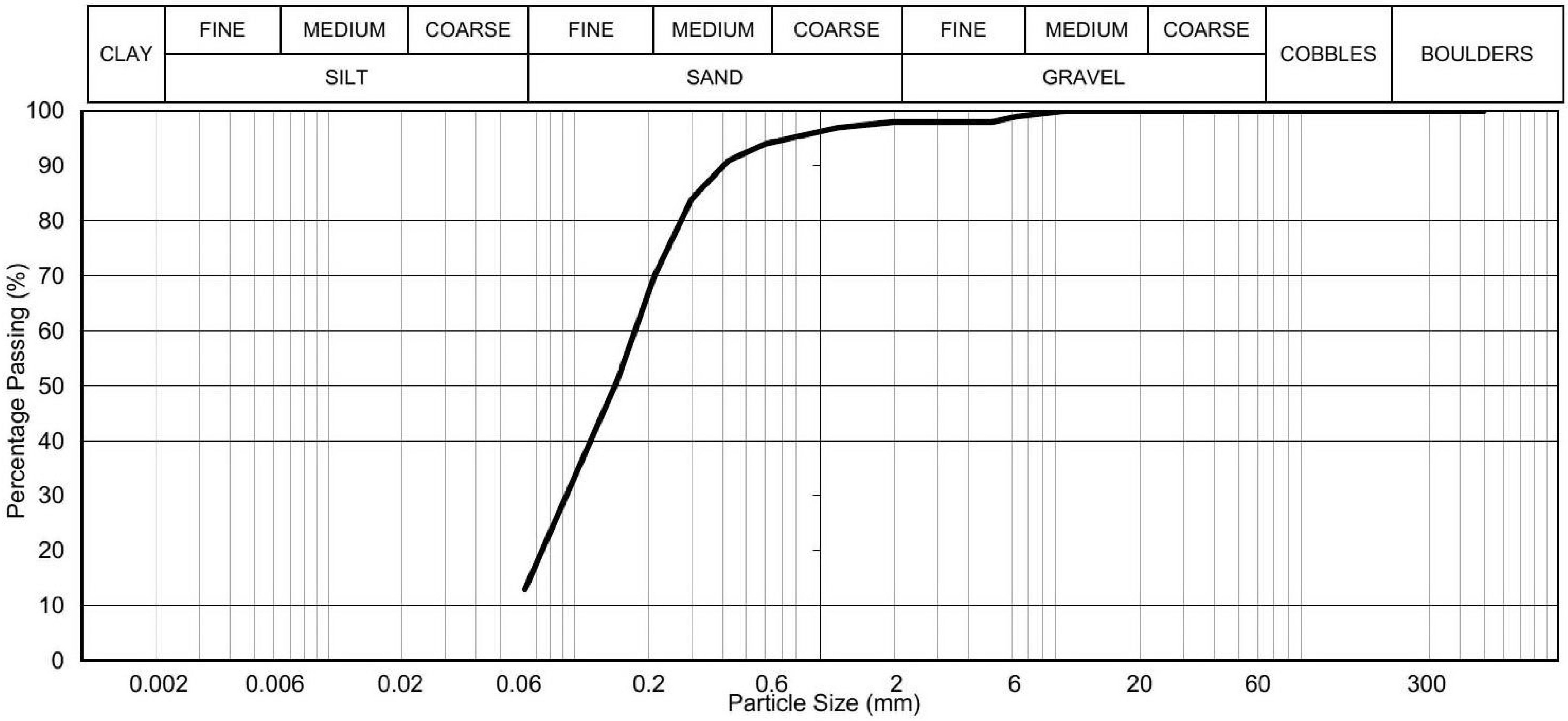
Borehole	BH05
Sample	B
Depth (m)	1.00



SIEVING			
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable	
		Lower %	Upper %
500.0	100	-	-
300.0	100	-	-
125.0	100	-	-
90.0	100	-	-
75.0	100	-	-
63.0	100	-	-
50.0	100	-	-
37.5	100	-	-
28.0	100	-	-
20.0	100	-	-
14.0	100	-	-
10.0	100	-	-
6.30	99	-	-
5.00	98	-	-
3.35	98	-	-
2.00	98	-	-
1.18	97	-	-
0.600	94	-	-
0.425	91	-	-
0.300	84	-	-
0.212	70	-	-
0.150	51	-	-
0.063	13	-	-

SEDIMENTATION	
Particle Size (mm)	Percentage Passing (%)
0.020	
0.006	
0.002	

GRADING CLASSIFICATION (SHW TABLE 6/2)

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Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

PERCENTAGE SOIL TYPES

CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	13	85	2	0

UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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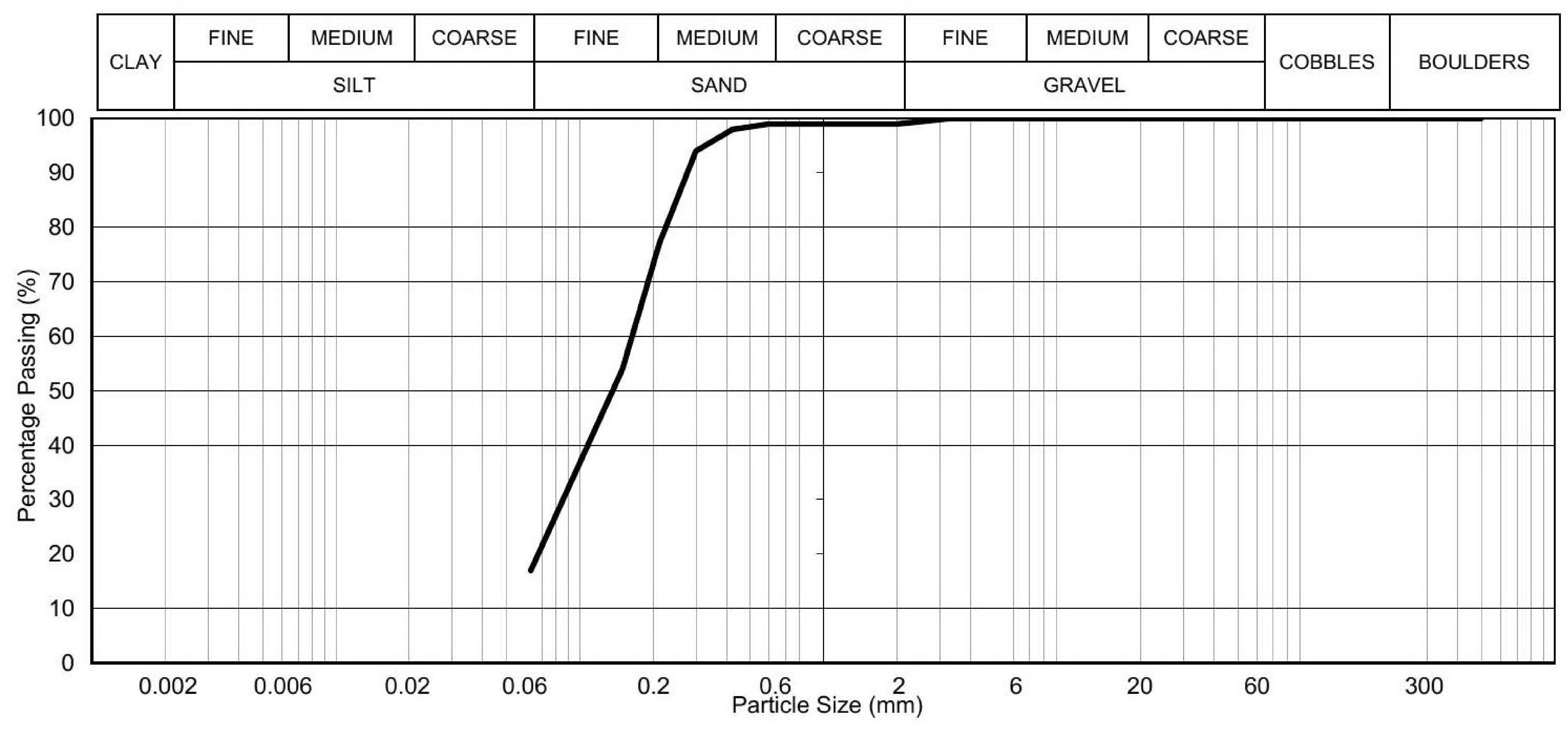
Borehole	BH06
Sample	B
Depth (m)	2.20



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable Lower %	Specification Not Applicable Upper %	Particle Size (mm)	Percentage Passing (%)
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-		
63.0	100	-	-		
50.0	100	-	-		
37.5	100	-	-		
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-		
6.30	100	-	-		
5.00	100	-	-		
3.35	100	-	-		
2.00	99	-	-		
1.18	99	-	-		
0.600	99	-	-		
0.425	98	-	-		
0.300	94	-	-		
0.212	77	-	-		
0.150	54	-	-		
0.063	17	-	-		

GRADING CLASSIFICATION (SHW TABLE 6/2)

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Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.

PERCENTAGE SOIL TYPES

CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	17	82	1	0

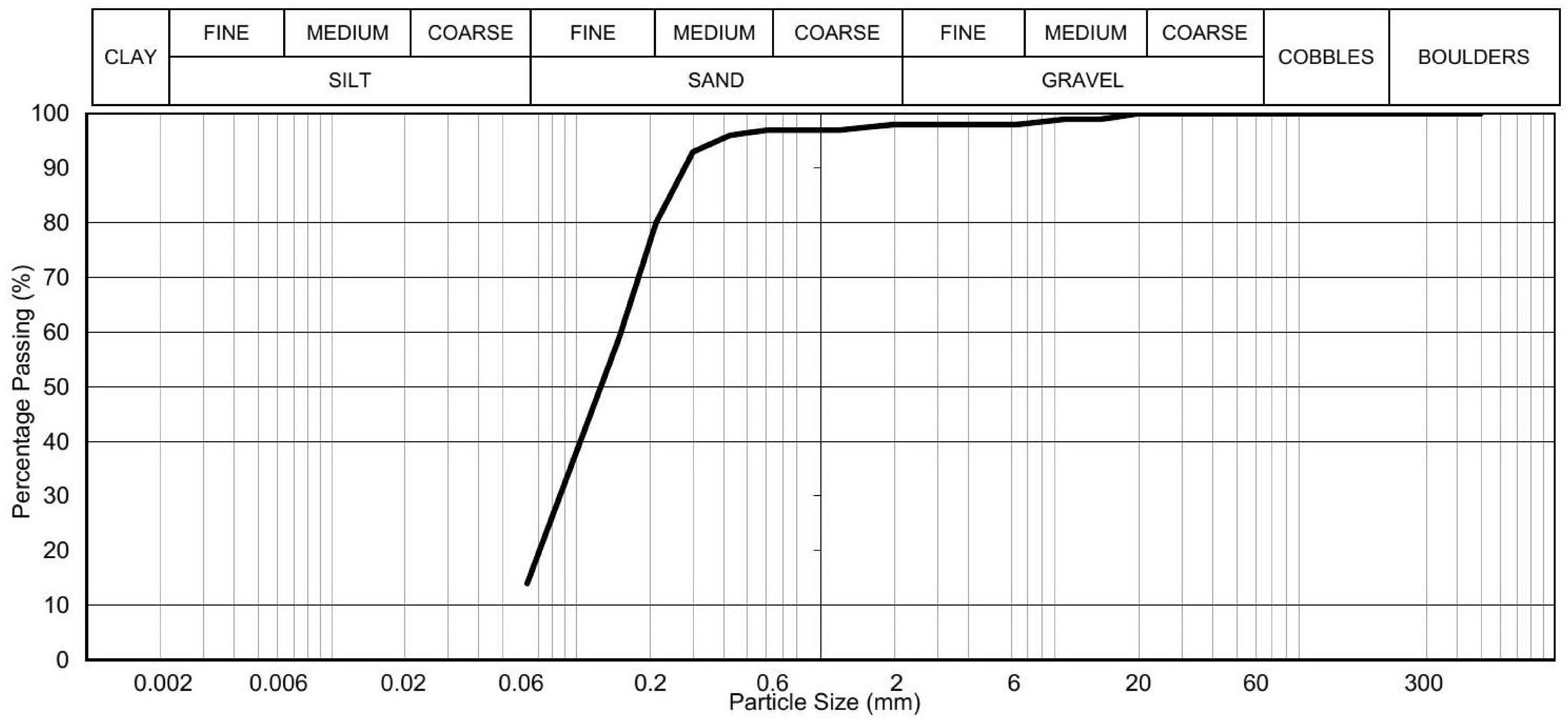
UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

Borehole	R01
Sample	DS
Depth (m)	3.00-3.70



SIEVING			
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable Lower %	Upper %
500.0	100	-	-
300.0	100	-	-
125.0	100	-	-
90.0	100	-	-
75.0	100	-	-
63.0	100	-	-
50.0	100	-	-
37.5	100	-	-
28.0	100	-	-
20.0	100	-	-
14.0	99	-	-
10.0	99	-	-
6.30	98	-	-
5.00	98	-	-
3.35	98	-	-
2.00	98	-	-
1.18	97	-	-
0.600	97	-	-
0.425	96	-	-
0.300	93	-	-
0.212	80	-	-
0.150	59	-	-
0.063	14	-	-

SEDIMENTATION	
Particle Size (mm)	Percentage Passing (%)
0.020	
0.006	
0.002	

GRADING CLASSIFICATION (SHW TABLE 6/2)

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PERCENTAGE SOIL TYPES				
CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	14	84	2	0

UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)		
D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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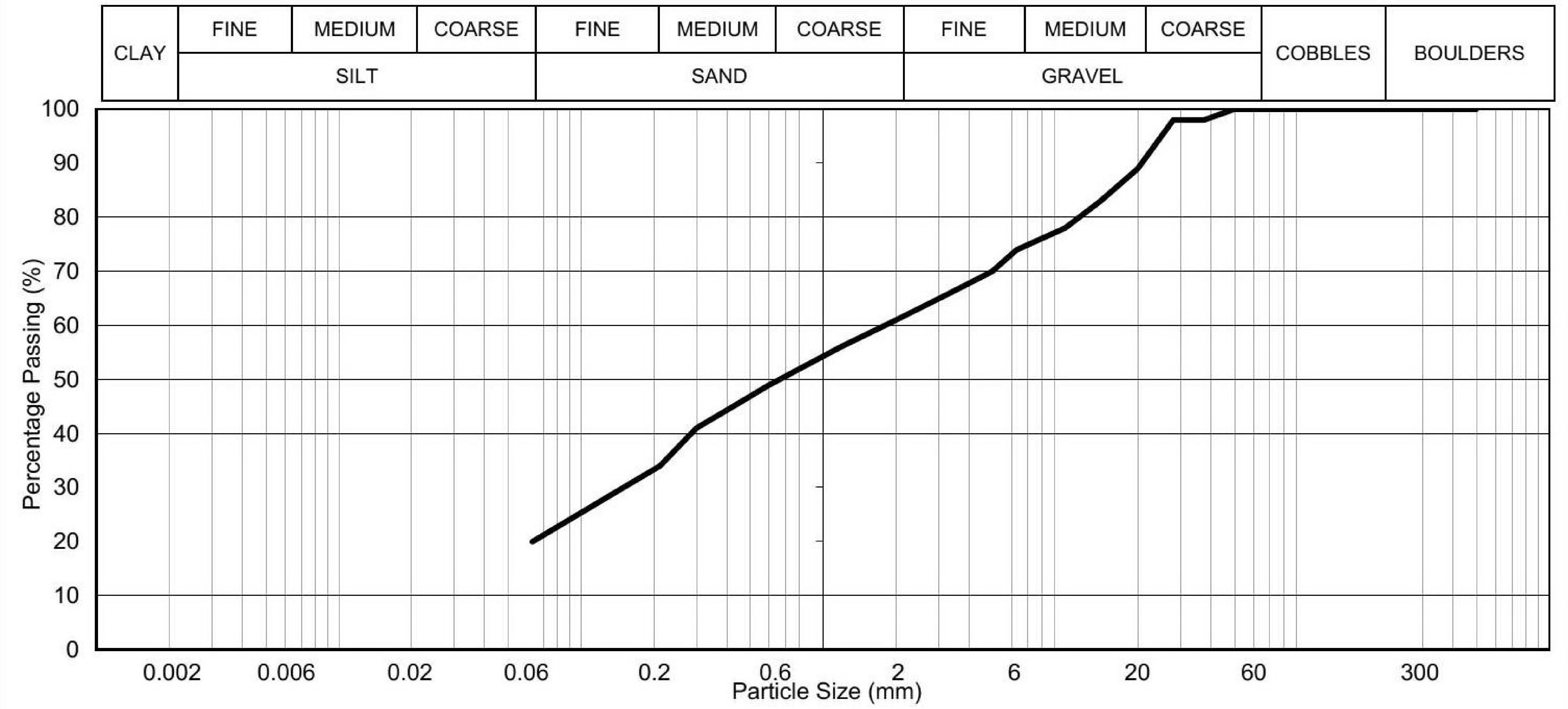
Borehole	R02
Sample	DS
Depth (m)	3.10-3.70



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-		
63.0	100	-	-		
50.0	100	-	-		
37.5	98	-	-		
28.0	98	-	-		
20.0	89	-	-		
14.0	83	-	-		
10.0	78	-	-		
6.30	74	-	-		
5.00	70	-	-		
3.35	66	-	-		
2.00	61	-	-		
1.18	56	-	-		
0.600	49	-	-		
0.425	45	-	-		
0.300	41	-	-		
0.212	34	-	-		
0.150	30	-	-		
0.063	20	-	-		

GRADING CLASSIFICATION (SHW TABLE 6/2)
-
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PERCENTAGE SOIL TYPES				
CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	20	41	39	0

UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)		
D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns