



TABLES

(not presented within text).

Table 2: Gas Groundwater Monitoring Data

GAS & GROUNDWATER MONITORING DATA																									
SITE		Kirkby																							
PROJECT No.		1373.02		Atmospheric & Ground Conditions																					
Visit 1 of 4				Atmospheric Pressure Variations During Visit															Ground Surface Conditions						
Carried Out by:		PGS		1014-1016m8															Dry						
Date:		18.03.25																							
Instrument Details		GFM436 14048		Atmospheric Pressure Trend Over Previous 48hrs															Weather Conditions						
				Falling															Warm and sunny						
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		H ₂ S		CO (ppm)		Duration (secs) ^a	Flow Rate (l/hr)	Relative Pressure (mb)	PID (ppm)	Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m Aod)	Depth of Pipe (m bgl)	Comments			
			Peak	Steady		Peak	Steady	Minimum	Steady	Minimum	Steady	Minimum	Steady				Peak	Steady							
WS01		50	0.0	0.0	0.0	1.5	1.5	14.1	14.1	0.0	0.0	0.0	0.0	180	0.0	0.00	NR	NR	1016	1.620	-1.620	2.620			
WS03		50	0.0	0.0	0.0	0.1	0.1	17.2	17.2	0.0	0.0	0.0	0.0	180	0.0	0.00	NR	NR	1014	2.030	-2.030	2.800			
WS04		50	0.0	0.0	0.0	0.1	0.1	19.4	19.5	0.0	0.0	0.0	0.0	180	0.0	0.0	NR	NR	1014	1.500	-1.500	3.800			

NR = Not Recorded

^a For measurement of gas concentrations

> = Above LEL

WST = Water Sample Taken

GL = Ground Level

GAS & GROUNDWATER MONITORING DATA																								
SITE		Kirkby																						
PROJECT No.		1373.02																						
Visit 2 of 4																								
Carried Out by:		Peter Searing		Atmospheric Pressure Variations During Visit															Ground Surface Conditions					
Date:		24.03.25		1016mB															Dry					
Instrument Details		GFM436 12928		Atmospheric Pressure Trend Over Previous 48hrs															Weather Conditions					
				Rising															Warm and sunny					
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		H ₂ S (ppm)		CO (ppm)		Duration (secs) ^a	Flow Rate (l/hr)	Relative Pressure (mb)	PID (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m Aod)	Depth of Pipe (m bgl)	Comments	
			Peak	Steady		Peak	Steady	Minimum	Steady	Minimum	Steady	Minimum	Steady				Peak	Steady						
WS01		50	0.0	0.0	0.0	0.8	0.8	17.6	17.6	0.0	0.0	0.0	0.0	180	0.0	0.00	NR	NR	1016	1.650	-1.650	2.620		
WS03		50	0.0	0.0	0.0	0.1	0.1	18.7	18.7	0.0	0.0	0.0	0.0	180	0.0	0.00	NR	NR	1016	2.020	-2.020	2.850		
WS04		50	0.0	0.0	0.0	0.1	0.1	20.1	20.1	0.0	0.0	0.0	0.0	180	0.0	0.00	NR	NR	1016	1.540	-1.540	3.820		

Notes:

NR = Not Recorded

^a For measurement of gas concentrations

> = Above LEL

WST = Water Sample Taken

GL = Ground Level

GAS & GROUNDWATER MONITORING DATA																														
SITE		Kirkby																												
PROJECT No.		1373.02																												
Visit 3 of 4		Atmospheric Pressure Variations During Visit															Ground Surface Conditions													
Carried Out by:		Lewis Hillman															1026mb													
Date:		08.04.2025															Dry													
Instrument Details		GFM36 14048															Atmospheric Pressure Trend Over Previous 48hrs							Weather Conditions						
																	Rising							Clear						
		Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		H ₂ S (ppm)		CO (ppm)		Duration (secs) ^a	Flow Rate (l/hr)	Relative Pressure (mb)	PID (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m Aod)	Depth of Pipe (m bgl)	Comments					
			Peak	Steady		Peak	Steady	Minimum	Steady	Minimum	Steady	Minimum	Steady				Peak	Steady												
WS01		50	0.0	0.0	0.0	0.3	0.1	20.1	20.7	-	-	-	-	60	0.0	-	-	-	1026	1.700	-1.700	2.800								
WS03		50	0.0	0.0	0.0	1.0	0.3	18.9	19.4	-	-	-	-	60	0.0	-	-	-	1026	1.220	-1.220	2.790								
WS04		50	0.0	0.0	0.0	0.1	0.1	20.3	19.7	-	-	-	-	60	0.0	-	-	-	1026	1.550	-1.550	3.750								

Notes:

NR = Not Recorded

^a For measurement of gas concentrations

> = Above LEL

WST = Water Sample Taken

GL = Ground Level

GAS & GROUNDWATER MONITORING DATA																							
SITE		Kirkby																					
PROJECT No.		1373.02																					
Visit 4 of 4																							
Carried Out by:		Lewis Hillman		Atmospheric Pressure Variations During Visit													Ground Surface Conditions						
Date:		16.04.2025		990mb													Wet						
Instrument Details		GFM36 14048		Atmospheric Pressure Trend Over Previous 48hrs													Weather Conditions						
				Falling													Overcast, Rainy						
Well No.	Cover Height (m AOD)	Well Diameter (mm)	CH ₄ (% v/v)		CH ₄ Steady LEL (%)	CO ₂ (% v/v)		O ₂ (% v/v)		H ₂ S (ppm)		CO (ppm)		Duration (secs) ^a	Flow Rate (l/hr)	Relative Pressure (mb)	PID (ppm)		Atmospheric Pressure (mb)	Water Level (m bgl)	Water Level (m Aod)	Depth of Pipe (m bgl)	Comments
			Peak	Steady		Peak	Steady	Minimum	Steady	Minimum	Steady	Minimum	Steady				Peak	Steady					
WS01	55.610	50	0.0	0.0	0.0	1.8	1.7	16.3	16.4	0.0	0.0	0.0	0.0	60	0.0	-	-	-	990	1.720	53.890	2.610	
WS03	55.100	50	0.0	0.0	0.0	1.2	0.1	18.5	18.5	0.0	0.0	0.0	0.0	60	0.0	-	-	-	990	2.100	53.000	2.790	
WS04	56.400	50	0.0	0.0	0.0	0.1	0.1	18.7	20.4	0.0	0.0	0.0	0.0	60	0.0	-	-	-	990	1.580	54.820	3.780	

Notes:

NR = Not Recorded

^a For measurement of gas concentrations

> = Above LEL

WST = Water Sample Taken

GL = Ground Level

Table 2: Gas and Groundwater Monitoring Data

Table 3: Comparison of Soil Chemical Analyses with GAC (Commercial)

Lab Sample Number:				Commercial GAC 1.0% SOM	481202	481203	481204	481205	481206	481207	481208
Sample Reference:					WS01	WS05	WS07	WS02	WS06	WS02	WS06
Borehole:											
Top Depth (m):					0.80	0.70	0.45	0.30	0.40	0.20	0.10
Basal Depth (m):											
Date Sampled:					11/03/2025	12/03/2025	11/03/2025	11/03/2025	11/03/2025	11/03/2025	11/03/2025
Determinand	Units	Limit of detection	Accreditation Status	[mg/kg unless stated]	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Asphalt	Asphalt
Moisture	%	0.01	NONE		10	7.3	9.9	20	5	1.3	1.9
Asbestos in Soil	Type	N/A	ISO 17025		Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	-	-
Asbestos % by hand picking/weighting	%				-	-	-	-	-	-	-
Asbestos Containing Material Types Detected (ACM)	Type				-	-	-	-	-	-	-
pH	pH Units	N/A	MCERTS		7.6	10.6	7.7	8	8.9	6.6	7.7
Arsenic	mg/kg	1.00	MCERTS	640	5.6	5	66	4.7	4.2	-	-
Beryllium	mg/kg	0.06	MCERTS	12	0.39	0.46	2.8	0.35	1	-	-
Boron	mg/kg	0.20	MCERTS	240000	0.4	1.2	0.9	0.8	0.2	-	-
Cadmium	mg/kg	0.20	MCERTS	190	< 0.2	0.2	2.1	< 0.2	< 0.2	-	-
Chromium (Hexavalent)	mg/kg	1.80	MCERTS	33	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	-	-
Chromium (Trivalent)	mg/kg	1.00	NONE	8600	12	14	34	12	38	-	-
Chromium (aqua regia extractable)	mg/kg	1.00	MCERTS	-	12	14	35	13	38	-	-
Copper	mg/kg	1.00	MCERTS	68000	17	13	380	17	20	-	-
Lead	mg/kg	1.00	MCERTS	NC	33	19	1400	140	8.1	-	-
Mercury	mg/kg	0.30	MCERTS	58 ^{US} (25.8)	< 0.3	< 0.3	1.7	< 0.3	< 0.3	-	-
Nickel	mg/kg	1.00	MCERTS	980	11	10	65	6.8	31	-	-
Selenium	mg/kg	1.00	MCERTS	12000	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-	-
Vanadium	mg/kg	1.00	MCERTS	9000	15	15	67	19	37	-	-
Zinc	mg/kg	1.00	MCERTS	730000	34	36	1000	45	58	-	-
Total Cyanide	mg/kg	1.00	MCERTS		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	-	-
Fraction Organic Carbon (FOC)	N/A	0.001	MCERTS		0.011	0.0056	0.033	0.029	0.012	-	-
Calculated TOC from FOC	-	-	-		1.00	0.560	3.300	2.900	1.200	-	-
Calculated SOM from FOC	-	-	-		0.019	0.010	0.057	0.050	0.021	-	-
Aliphatic TPH >C5-C6	mg/kg	0.01	NONE	3200 ^{US} (304)	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	-
Aliphatic TPH >C6-C8	mg/kg	0.01	NONE	7800 ^{US} (144)	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	-
Aliphatic TPH >C8-C10	mg/kg	0.01	NONE	2000 ^{US} (78)	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	-
Aliphatic TPH >C10-C12	mg/kg	1.00	MCERTS	9700 ^{US} (48)	< 1.0	< 1.0	< 1.0	< 1.0	8.4	-	-
Aliphatic TPH >C12-C16	mg/kg	2.00	MCERTS	59000 ^{US} (24)	< 2.0	3.3	6.8	< 2.0	110	-	-
Aliphatic TPH >C16-C21	mg/kg	8.00	MCERTS		< 8.0	13	9.2	< 8.0	150	-	-
Aliphatic TPH >C21-C35	mg/kg	8.00	MCERTS	1600000	< 8.0	240	37	< 8.0	48	-	-
Total Aliphatic Hydrocarbons:	mg/kg	10.00	NONE		< 10	250	53	< 10	310	-	-
Aromatic TPH >C5-C7	mg/kg	0.01	NONE	26000 ^{US} (1220)	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	-
Aromatic TPH >C7-C8	mg/kg	0.01	NONE	56000 ^{US} (869)	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	-
Aromatic TPH >C8-C10	mg/kg	0.02	NONE	3500 ^{US} (613)	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	-	-
Aromatic TPH >C10-C12	mg/kg	1.00	MCERTS	16000 ^{US} (364)	< 1.0	< 1.0	2.5	< 1.0	7	-	-
Aromatic TPH >C12-C16	mg/kg	2.00	MCERTS	36000 ^{US} (189)	< 2.0	3.9	7.8	< 2.0	69	-	-
Aromatic TPH >C16-C21	mg/kg	10.00	MCERTS	28000	< 10	< 10	33	< 10	94	-	-
Aromatic TPH >C21-C35	mg/kg	10.00	MCERTS	28000	< 10	48	40	< 10	24	-	-
Total Aromatic Hydrocarbons	mg/kg	10.00	NONE		< 10	52	83	< 10	190	-	-
Calculated Sum TPH (sum Aliphatic + sum Aromatic)					260	302	136	20	500	-	-
Naphthalene	mg/kg	0.05	MCERTS	190 ^{US} (76.4)	0.47	0.38	2.5	< 0.05	2	0.31	0.26
Acenaphthylene	mg/kg	0.05	MCERTS	8300 ^{US} (86.1)	< 0.05	0.06	0.41	< 0.05	0.09	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	8400 ^{US} (57)	< 0.05	0.06	1.2	< 0.05	0.58	< 0.05	0.06
Fluorene	mg/kg	0.05	MCERTS	6300 ^{US} (30.9)	< 0.05	0.09	1.2	< 0.05	0.61	< 0.05	0.05
Phenanthrene	mg/kg	0.05	MCERTS	22000	0.26	0.8	11	< 0.05	0.5	< 0.05	0.27
Anthracene	mg/kg	0.05	MCERTS	520000	0.06	0.16	2.9	< 0.05	< 0.05	< 0.05	0.12
Fluoranthene	mg/kg	0.05	MCERTS	23000	0.62	0.87	12	0.08	0.1	< 0.05	0.55
Pyrene	mg/kg	0.05	MCERTS	54000	0.57	0.84	13	< 0.05	0.11	< 0.05	0.79
Benzo[a]anthracene	mg/kg	0.05	MCERTS	170	0.25	0.36	6.3	< 0.05	< 0.05	< 0.05	0.31
Chrysene	mg/kg	0.05	MCERTS	350	0.36	0.38	6.7	< 0.05	< 0.05	< 0.05	< 0.05
Benzo[b]fluoranthene	mg/kg	0.05	ISO 17025	44	0.36	0.36	6.4	< 0.05	< 0.05	< 0.05	1
Benzo[k]fluoranthene	mg/kg	0.05	ISO 17025	1200	0.15	0.17	2.9	< 0.05	< 0.05	< 0.05	0.36
Benzo[a]pyrene	mg/kg	0.05	MCERTS	35	0.28	0.36	6.6	< 0.05	< 0.05	< 0.05	1.6
Indeno(1,2,3-c,d)Pyrene	mg/kg	0.05	MCERTS	500	0.14	0.15	3	< 0.05	< 0.05	< 0.05	1.1
Dibenz[a,h]Anthracene	mg/kg	0.05	MCERTS		< 0.05	< 0.05	0.91	< 0.05	< 0.05	< 0.05	0.22
Benzo[g,h,i]perylene	mg/kg	0.05	MCERTS	3600	0.21	0.2	3.9	< 0.05	< 0.05	< 0.05	1.7
Coronene	mg/kg	0.05	NONE		-	-	-	-	-	< 0.05	< 0.05
Total Of 16 PAH's	mg/kg	0.8	ISO 17025		3.74	5.23	81.3	< 0.80	4.04	-	-
Total Of 17 PAH's	mg/kg	0.85	ISO 17025		-	-	-	-	-	< 0.85	8.45
Benzene	µg/kg	5.00	MCERTS	27	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5.00	MCERTS	56000 ^{US} (869)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5.00	MCERTS	5700 ^{US} (518)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	8.00	MCERTS	5900 ^{US} (576)	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-xylene	µg/kg	5.00	MCERTS	6600 ^{US} (478)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5.00	NONE		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Phenols	mg/kg	1.00	MCERTS	440 ^{US} (26000)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

	Determinand concentration below the GAC
	Determinand concentration in exceedance of GAC
	Determinand concentration in exceedance of the vapour/solubility saturation limit.

NC: No published criteria, US: Unsuitable sample.

vap: Screening criteria presented exceed the vapour saturation limit, which is presented in brackets.

sol: Screening criteria presented exceed the solubility saturation limit, which is presented in brackets.

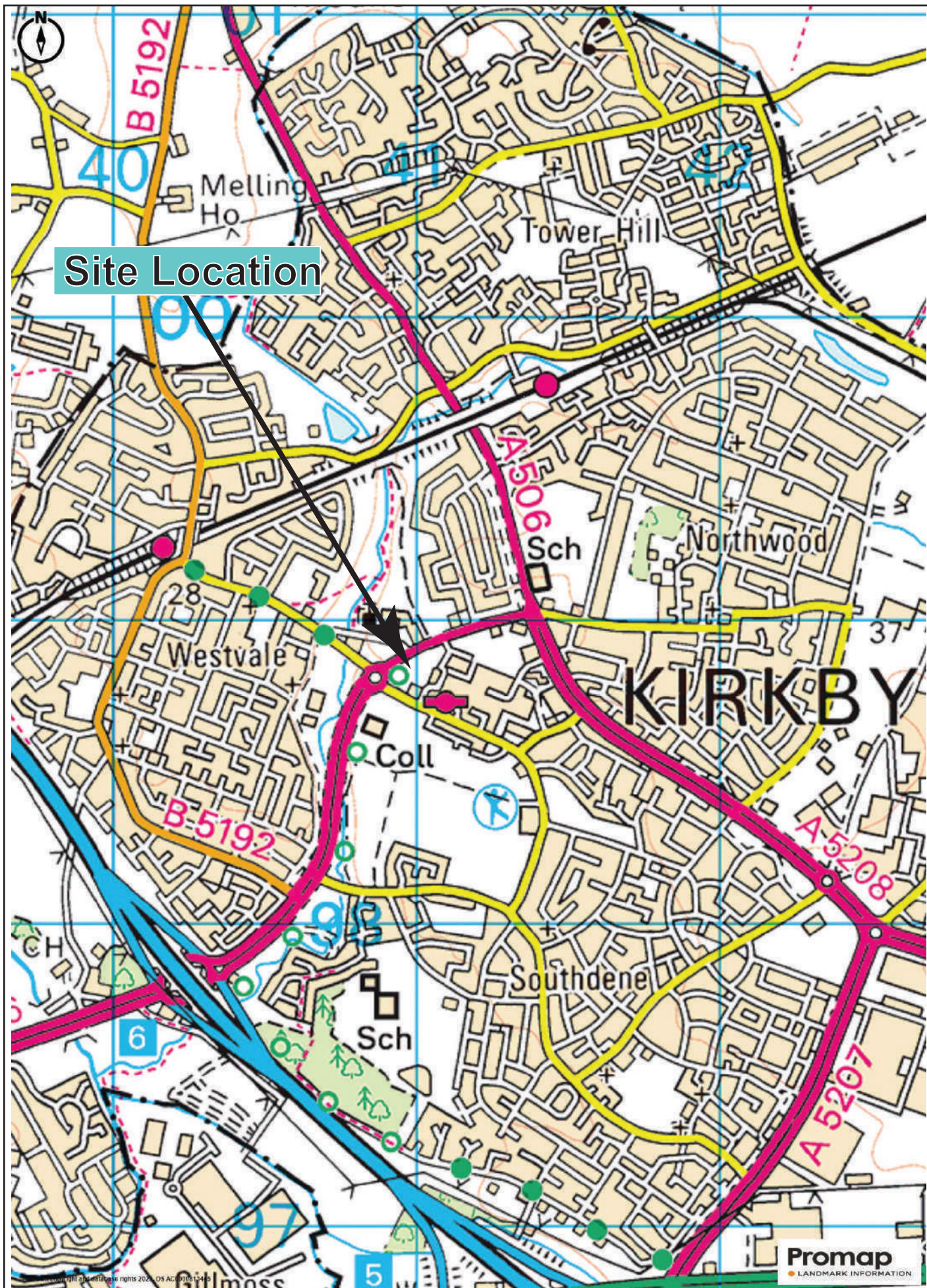
dir: Screening criteria based on threshold protective of direct skin contact (guideline in brackets based on health effects following long term exposure provided for illustration only).

(1): For assessment based on the use of the surrogate marker approach the GAC for Coal Tar must be used instead of benzo(a)pyrene.

* Value presented in mg/kg

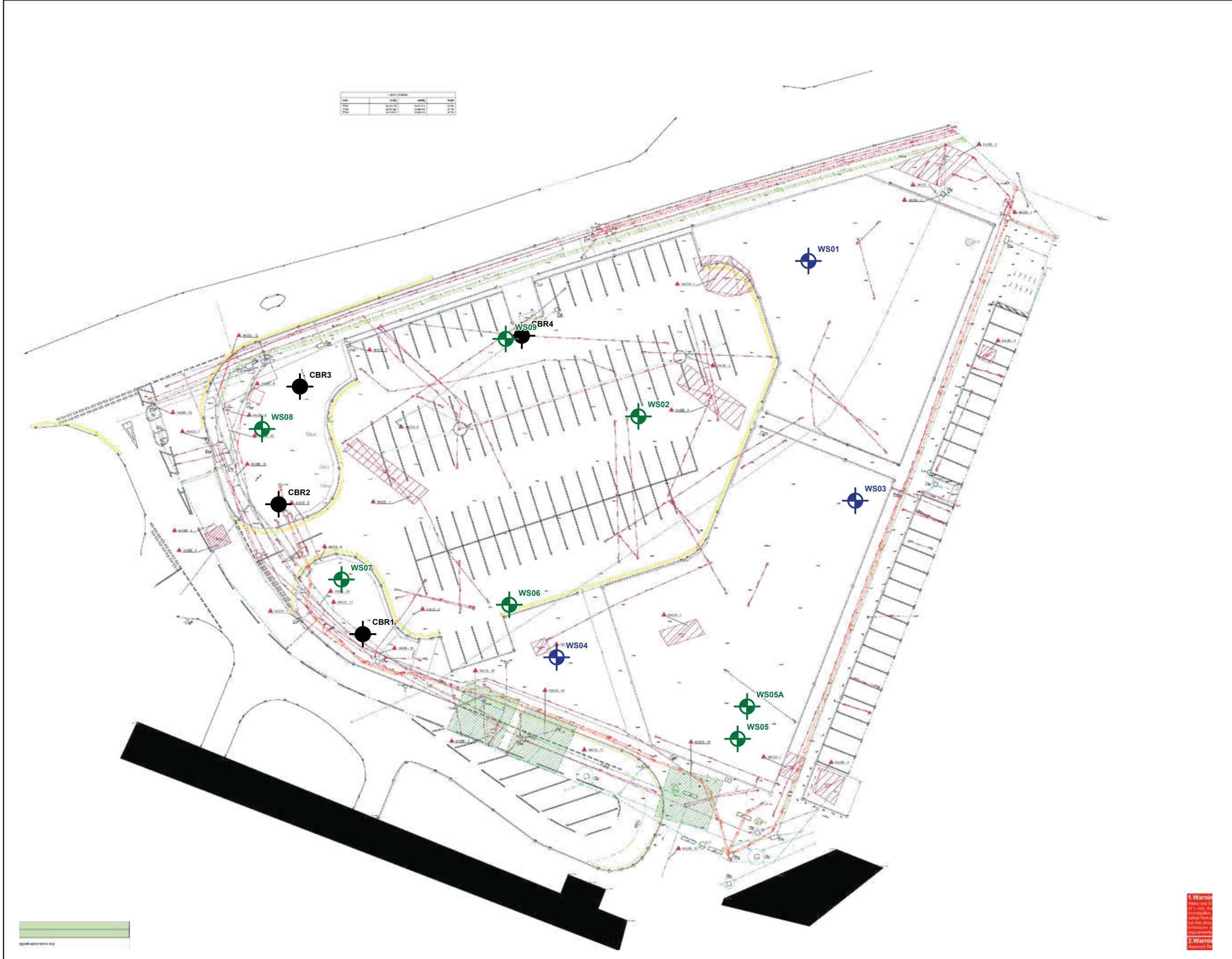


FIGURES



Notes	Revision	Approved	Date	Project Title	Scale	Drawn	Size
				Irlam Drive, Kirkby	as shown	LH	A4
				Drawing Title	Date	Job No.	Figure No.
				Site Location Plan	10.02.25	1373.01	01
				Client			
				Lidl Great Britain Ltd			





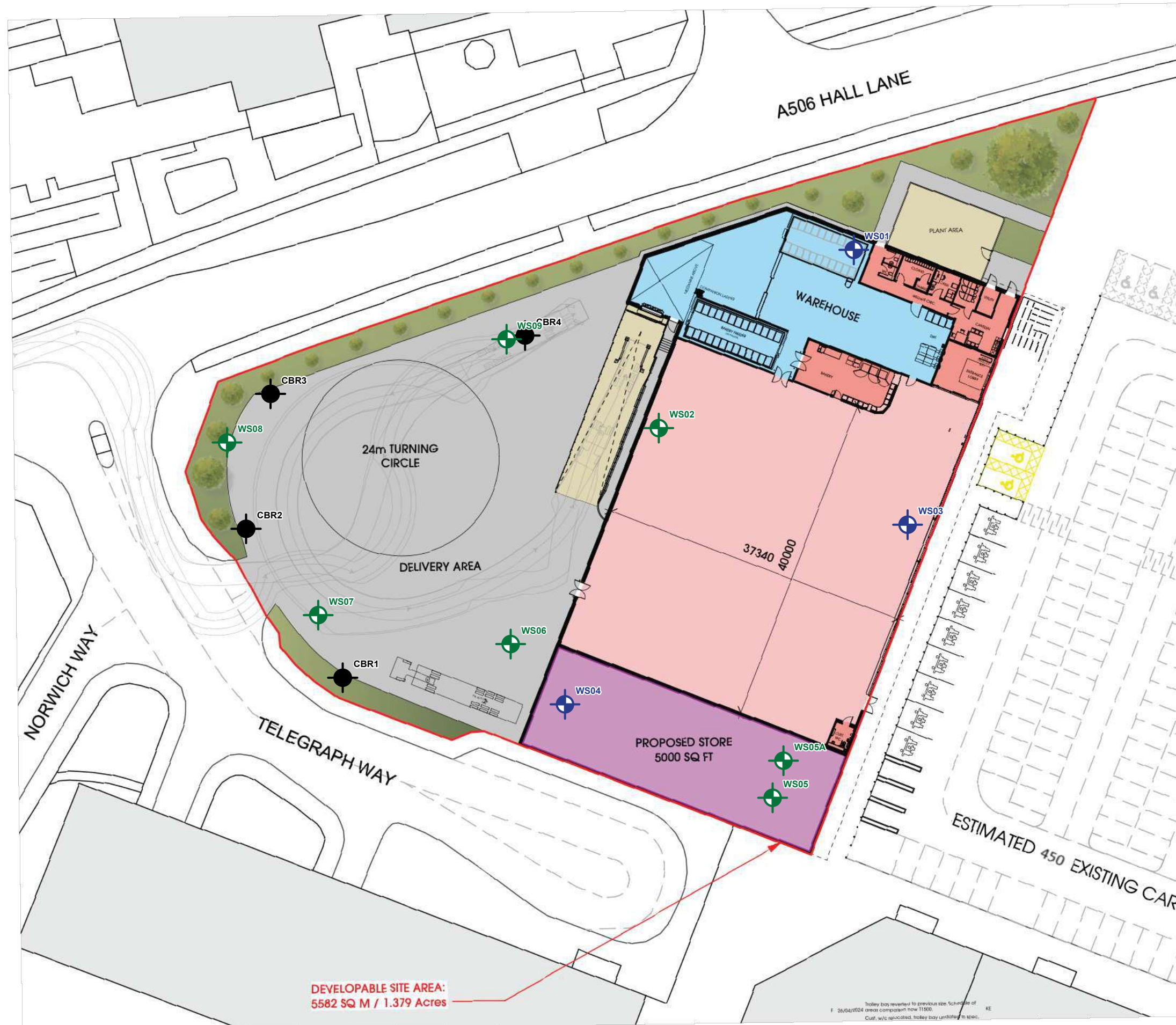
- Legend
- WS01** Window Sample & Installation
 - WS02** Window Sample
 - PBT01** Plate Bearing Test
 - CBR1** CBR Test
 - SA01** Soakaway Test Pit

Notes:

Proposed Layout reproduced from HTC Architects Ltd's Proposed Site Plan (Option 14), drawing ref: 3288_F414 Rev F, dated January 24.

The proposed site layout plan presented here is indicative only and may be subject to change following publication of Remada's Phase 1 report.

Revision	Approved	Date
Project Title		
Irlam Drive, Kirkby		
Drawing Title		
Existing Site Layout		
Client		
Lidl Great Britain Ltd 		
Scale	Drawn	Size
as shown	LH	A4
Date	Job No.	Figure No.
04.04.25	1373	02
		



- Legend
- WS01 Window Sample & Installation
 - WS02 Window Sample
 - PBT01 Plate Bearing Test
 - CBR1 CBR Test
 - SA01 Soakaway Test Pit

Notes:

Proposed Layout reproduced from HTC Architects Ltd's Proposed Site Plan (Option 14), drawing ref: 3288_F414 Rev F, dated January 24.

The proposed site layout plan presented here is indicative only and may be subject to change following publication of Remada's Phase 1 report.

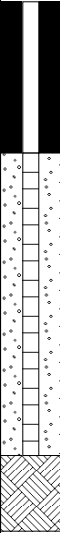
Revision	Approved	Date
Project Title		
Irlam Drive, Kirkby		
Drawing Title		
Proposed Indicative Site Layout Plan		
Client		
Lidl Great Britain Ltd		
Scale	Drawn	Size
as shown	LH	A4
Date	Job No.	Figure No.
04.04.25	1373	03



EXPLORATORY HOLE LOGS

Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 12/03/2025	
Location:		Contractor:		Co-ords: E341202.00 N398940.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS01	Hole Type WS	Level 25.26m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

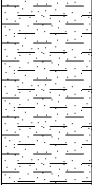
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20			0.20	25.06		MADE GROUND: Dark brown gravelly sand. Gravel is angular to subrounded fine to coarse sandstone, brick and concrete.	1
		0.60			0.60	24.66		MADE GROUND: Grey sandy angular to subangular fine to coarse gravel of concrete and igneous rock.	
		0.80	ES						
		1.00	SPT	N=8 (3,2/2,2,2,2)	1.00	24.26		MADE GROUND: Fabric geotextile over brown very gravelly silty sand. Gravel is angular to rounded fine to coarse brick, sandstone, coal, mudstone and concrete.	
		1.20	D					Loose brown SAND.	
		1.80	D		1.80	23.46		Soft dark brown fibrous PEAT.	
		2.00	SPT	N=4 (1,1/1,1,1,1)	2.00	23.26		Loose brown gravelly SAND. Gravel is subrounded fine to coarse sandstone.	
		2.30			2.30	22.96		Stiff/friable red brown silty CLAY with mudstone lithorelicts.	
		2.70	D		2.80	22.46		Red brown silty SAND.	
		3.00	SPT	N=45 (4,5/5,10,15,15)	3.00	22.26		Very dense red brown SAND.	
		3.50	D		3.50	21.76		End of Borehole at 3.500m	4
		3.50	SPT	N=50 (11,13/50 for 125mm)					5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Terminated upon SPT refusal (N>50). 3. Installed to 3.0m; 1.0m plain pipe, 2.0m slotted pipe.										
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Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 11/03/2025	
Location:		Contractor:		Co-ords: E341179.00 N398919.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS02	Hole Type WS	Level 25.00m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

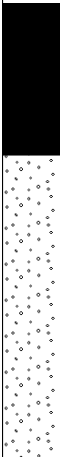
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.20	24.80		MADE GROUND: Asphalt.	
		0.30	ES					MADE GROUND: Brown and grey gravelly sand. Gravel is subangular to rounded fine to coarse sandstone and quartzite with rare subangular cobbles of sandstone.	
		1.00	SPT	N=12 (1,1/2,4,3,3)	0.95	24.05		MADE GROUND: Dark brown slightly gravelly silty sand. Gravel is subangular fine to medium brick.	1
		1.10	D		1.00	24.00		Brown slightly gravelly SAND. Gravel is angular to subangular fine to coarse sandstone.	
		1.60	D		1.60	23.40		Firm brown slightly gravelly CLAY. Gravel is angular to subangular fine to coarse sandstone.	
		2.00	SPT	N=4 (1,1/1,1,1,1)	2.10	22.90		Brown slightly gravelly SAND. Gravel is subrounded fine to coarse sandstone.	2
		2.50	D					Firm becoming very stiff by 3.8m red brown slightly sandy CLAY with rare subangular sandstone gravel.	
		3.00	SPT	N=27 (2,4/5,5,7,10)					3
		3.80	SPT	N=50 (25 for 60mm/50 for 30mm)	3.80	21.20		End of Borehole at 3.800m	4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater encountered at 3.0m bgl. 2. Terminated upon SPT refusal (N>50). 3. Backfilled with arisings on completion.										
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Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 12/03/2025	
Location:		Contractor:		Co-ords: E341208.00 N398905.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS03	Hole Type WS	Level 26.05m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

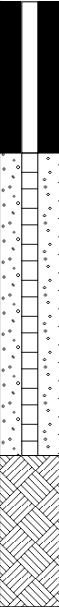
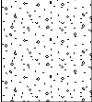
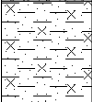
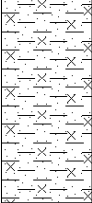
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.90 1.00	D SPT	N=6 (1,1/1,1,2,2)	0.20	25.85		MADE GROUND: Grass over dark brown slightly clayey slightly gravelly sand. Gravel is subangular to subrounded fine to coarse sandstone.	1	
					0.40	25.65				
					0.70	25.35				
		1.90 2.00	D SPT	N=14 (1,1/1,3,5,5)	1.00	25.05		MADE GROUND: Fabric geotextile over brown gravelly sand. Gravel is subangular fine to coarse brick and sandstone.	2	
					1.60	24.45				
					2.50	23.55				
		2.90 3.00	D SPT	N=50 (4,3/50 for 275mm)	3.00	23.05		Firm brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to medium sandstone and mudstone. Loose brown SAND. Firm brownish grey slightly gravelly slightly sandy CLAY. Gravel is subangular to rounded fine to coarse sandstone, mudstone and organic wood fragments. Very dense red brown SAND.	3	
					End of Borehole at 3.000m					
										4
										5
								6		
								7		
								8		
								9		
								10		

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Terminated upon SPT refusal (N>50). 3. Backfilled with arisings on completion.										
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Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 11/03/2025	
Location:		Contractor:		Co-ords: E341168.00 N398883.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS04	Hole Type WS	Level 26.00m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

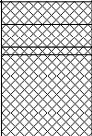
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.50	ES		0.45 0.50	25.55 25.50		MADE GROUND: Grass over dark brown clayey slightly gravelly sand. Gravel is subangular to subrounded fine to coarse sandstone.	1
		1.00	SPT	N=4 (1,1/1,1,1,1)				MADE GROUND: Concrete.	
		1.50	D		1.30	24.70		MADE GROUND: Brown slightly clayey locally very clayey gravelly sand. Gravel is angular to subrounded fine to coarse sandstone, brick and concrete with rare subangular cobbles of sandstone.	
		2.00	SPT	N=15 (3,4/3,4,4,4)	2.00	24.00		Loose brown locally grey slightly gravelly SAND. Gravel is subangular fine to coarse sandstone.	2
		3.00	SPT	N=15 (3,3/3,4,4,4)				Stiff/friable becoming very stiff slightly sandy locally very sandy silty CLAY.	3
		3.80 4.00	D SPT		4.00	22.00		End of Borehole at 4.000m	4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Terminated upon SPT refusal (N>50). 3. Installed to 3.0m; 1.0m plain pipe, 2.0m slotted pipe.										
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Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date:	
Location:		Contractor:		Co-ords: E341192.00 N398871.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS05	Hole Type WS	Level 26.57m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.70	ES		0.15	26.42		MADE GROUND: Grass over dark brown gravelly sand. Gravel is subangular to subrounded fine to coarse brick, sandstone and concrete. MADE GROUND: Brown gravelly sand. Gravel is subangular to subrounded fine to coarse sandstone and mudstone. MADE GROUND: Dark brown and dark grey angular to subangular fine to coarse gravel of tarmac. MADE GROUND: Brown and grey very sandy angular to subrounded fine to coarse gravel of sandstone, mudstone, concrete, brick and tile. End of Borehole at 0.900m	1
					0.30	26.27			
					0.35	26.22			
					0.90	25.67			
									2
									3
									4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

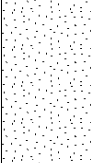
Remarks

- Groundwater not encountered.
- Terminated upon liner refusal and relocated to WS05A.
- Backfilled with arisings on completion.



Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 12/03/2025	
Location:		Contractor:		Co-ords: E341194.00 N398876.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS05A	Hole Type WS	Level 26.56m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

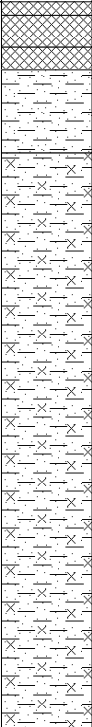
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES		0.20	26.36		MADE GROUND: Grass over dark brown gravelly sand. Gravel is subangular to subrounded fine to coarse sandstone.	1
		1.00	SPT	N=7 (3,2/1,2,2,2)	1.00	25.56		MADE GROUND: Brown and grey sand and gravel. Gravel is subangular to rounded fine to coarse sandstone, brick and concrete.	
		1.20			1.20	25.36		Loose brown SAND.	
		1.60	D		1.70	24.86		Firm brown and grey silty sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse sandstone and mudstone.	
		2.00	SPT	N=32 (2,3/5,7,10,10)				Dense becoming very dense red brown SAND.	2
		2.20	D						
		3.00	SPT	N=50 (25 for 135mm/50 for 180mm)	3.00	23.56		End of Borehole at 3.000m	3
									4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Terminated upon SPT refusal (N>50). 3. Installed to 3.0m; 1.0m plain pipe, 2.0m slotted pipe.										
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Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 11/03/2025	
Location:		Contractor:		Co-ords: E341160.00 N398891.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS06	Hole Type WS	Level 25.45m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.09	25.36		MADE GROUND: Asphalt.	1
		0.40	ES		0.30	25.15		MADE GROUND: Brown gravelly sand. Gravel is subangular fine to coarse sandstone.	
		0.90	D		0.45	25.00		MADE GROUND: Dark grey and bluish grey slightly sandy angular to subangular fine to coarse gravel of slate and sandstone.	
		1.00 - 2.00	B		1.00	24.45		Firm red brown locally light brown slightly sandy CLAY.	
		1.00	SPT	N=26 (1,3/6,6,7,7)				Stiff/friable becoming very stiff at 4.8m bgl slightly sandy silty CLAY with rare subangular fine to coarse sandstone gravel and mudstone lithorelicts from 4.0m bgl.	
		2.00	SPT	N=22 (4,4/5,5,6,6)					
		2.20	D						
		3.00	SPT	N=42 (13,11/10,9,13,10)					
		4.00	SPT	N=23 (6,6/5,6,6,6)					
		4.20	D						
		4.80	SPT	N=50 (12,13/50 for 160mm)	4.80	20.65		End of Borehole at 4.800m	5
									6
									7
									8
									9
									10

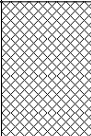
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

- Groundwater not encountered.
- Terminated upon SPT refusal (N>50).
- Backfilled with arisings on completion.

Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 11/03/2025	
Location:		Contractor:		Co-ords: E341138.00 N398892.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS07	Hole Type WS	Level 25.40m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.45	ES					MADE GROUND: Grass over dark brown gravelly sand. Gravel is angular to subrounded fine to coarse brick, sandstone, mudstone, coal and chalk.	
		1.00	SPT	N=23 (8,6/6,6,6,5)	0.90 1.10	24.50 24.30		Brown gravelly SAND. Gravel is subrounded to rounded fine to coarse sandstone.	1
		1.60	D					Medium dense brown slightly clayey slightly gravelly SAND. Gravel is subrounded to rounded fine to coarse sandstone.	
		2.00	SPT	N=17 (1,2/3,4,5,5)	2.00	23.40		Firm to stiff red brown slightly sandy silty CLAY.	2
		2.50	D		2.60	22.80		Very dense red brown slightly clayey silty SAND.	
		3.00	SPT	N=50 (10,12/50 for 245mm)	3.00	22.40		End of Borehole at 3.000m	3
									4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

- Groundwater not encountered.
- Terminated upon SPT refusal (N>50).
- Backfilled with arisings on completion.

Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 12/03/2025	
Location:		Contractor:		Co-ords: E341125.00 N398915.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS08	Hole Type WS	Level 24.00m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.40 0.50	23.60 23.50		MADE GROUND: Grass over dark brown clayey slightly gravelly sand. Gravel is subangular to subrounded fine to coarse coal, sandstone and rare brick.	1
		1.00	SPT	N=14 (2,2/2,4,4,4)	1.00	23.00		Dark brown SAND. Red brown silty SAND with rare gravel. Gravel is subangular fine to coarse sandstone and coal.	
		1.50	D		1.80	22.20		Medium dense brown SAND.	
		2.00	SPT	N=0 (0,0/0,0,0,0)				Very loose becoming very dense red brown silty SAND.	
		2.80 3.00	D SPT	N=50 (10,15/50 for 180mm)	3.00	21.00			
								End of Borehole at 3.000m	3
									4
									5
									6
									7
									8
									9
									10

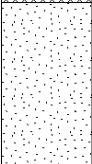
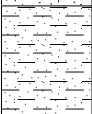
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

- Groundwater not encountered.
- Terminated upon SPT refusal (N>50).
- Backfilled with arisings on completion.

Percussion Drilling Log

Project Name: Irlam Drive, Kirkby		Client: Lidl Great Britain Ltd		Date: 11/03/2025	
Location:		Contractor:		Co-ords: E341159.00 N398929.00	
Project No. : 1373.02		Crew Name:		Drilling Equipment: Tracked rig	
Borehole Number WS09	Hole Type WS	Level 24.46m AoD	Logged By KS	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.10	24.36		MADE GROUND: Asphalt. MADE GROUND: Brown very gravelly sand. Gravel is subangular to subrounded fine to coarse sandstone.	1
		0.60	D		0.60	23.86		Very loose brown SAND.	
		1.00	SPT	N=2 (1,1/0,0,1,1)					
		1.90	D		1.70	22.76		Soft becoming firm at 2.0m red brown sandy CLAY locally clayey SAND.	2
		2.00	SPT	N=6 (1,1/1,1,2,2)					
		2.50			2.50	21.96		Very stiff/friable red brown slightly sandy silty CLAY with mudstone lithorelicts.	3
		2.90	D		3.00	21.46		End of Borehole at 3.000m	
		3.00	SPT	N=50 (5,5/6,14,16,14)					4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Groundwater not encountered. 2. Terminated upon SPT refusal (N>50). 3. Backfilled with arisings on completion.										
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APPENDIX A

SPT Hammer Energy Test Certificate



SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Socotec uk
Progress close
Binley
Coventry
CV3 2TF

SPT Hammer Ref: 110.24
Test Date: 30/01/2025
Report Date: 30/01/2025
File Name: 110.24.spt
Test Operator: DP

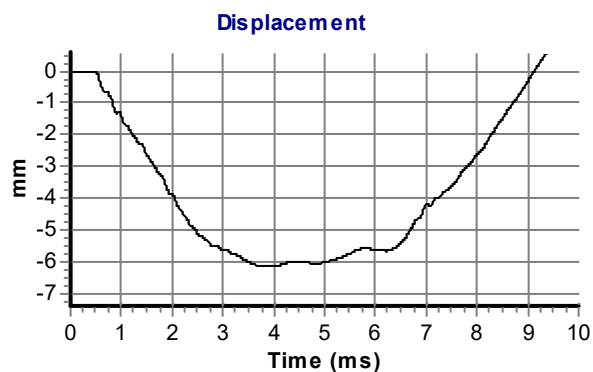
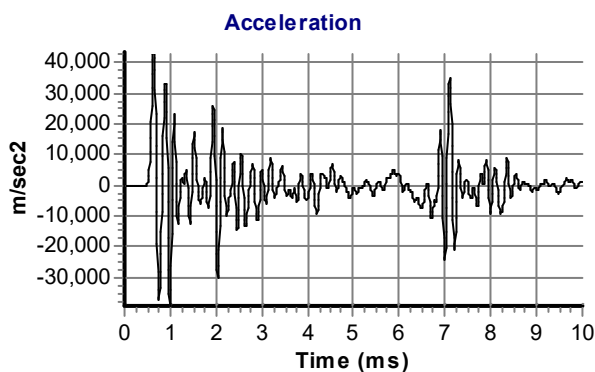
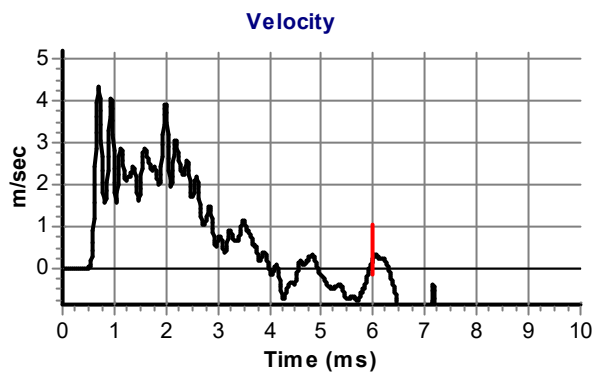
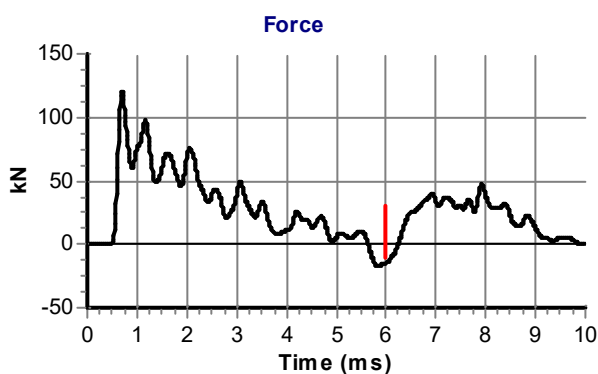
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.0
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 72570
Accelerometer No.2: 72571

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 12.6

Comments / Location



Calculations

Area of Rod A (mm²): 905
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 417

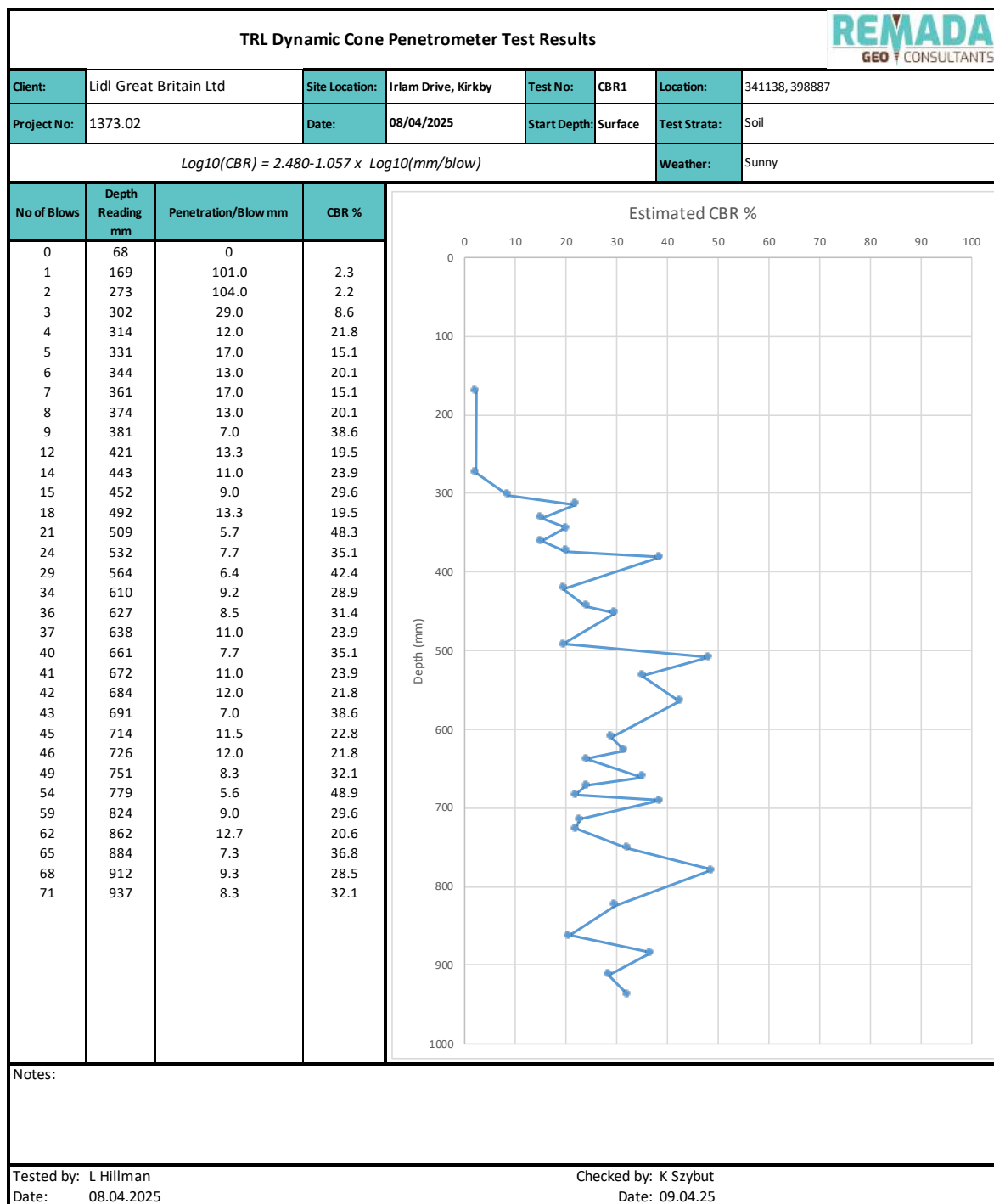
Energy Ratio E_r (%): **88**

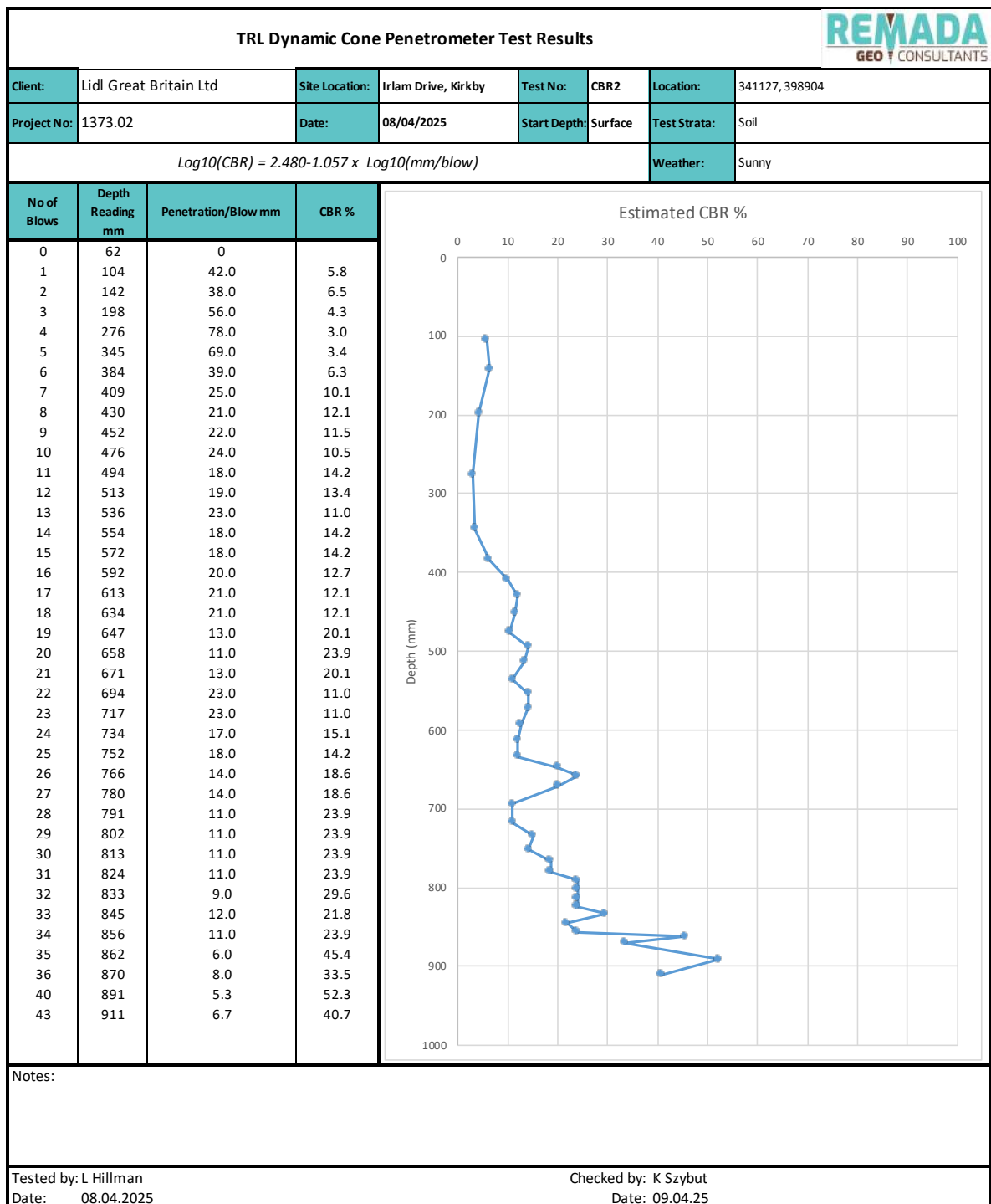
Signed: D Perrett
Title: Drilling Supervisor

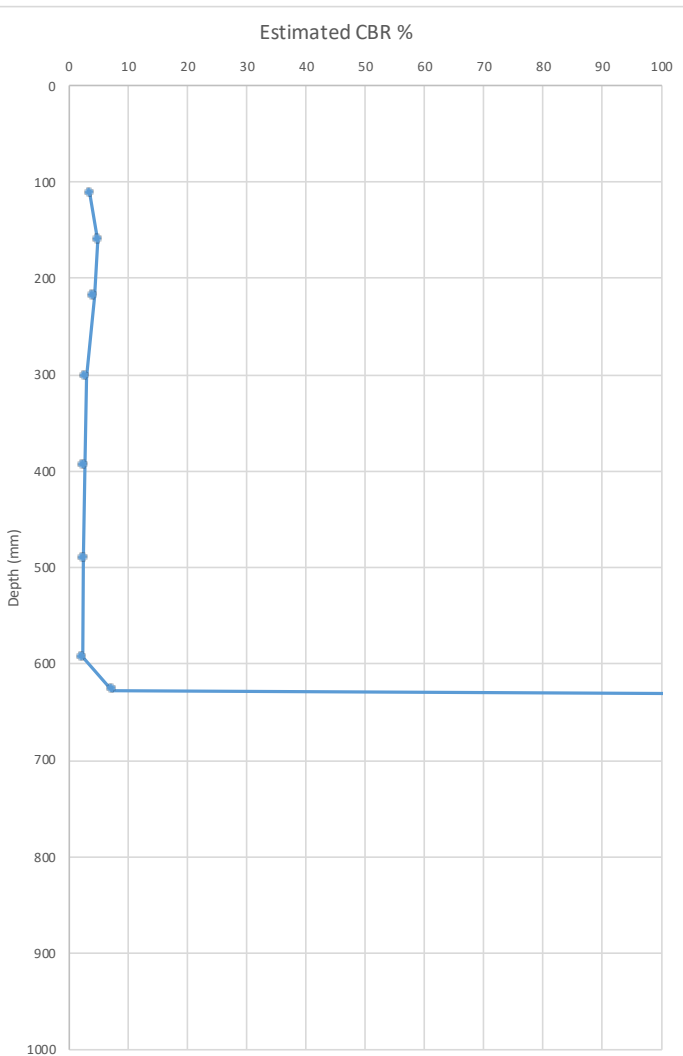


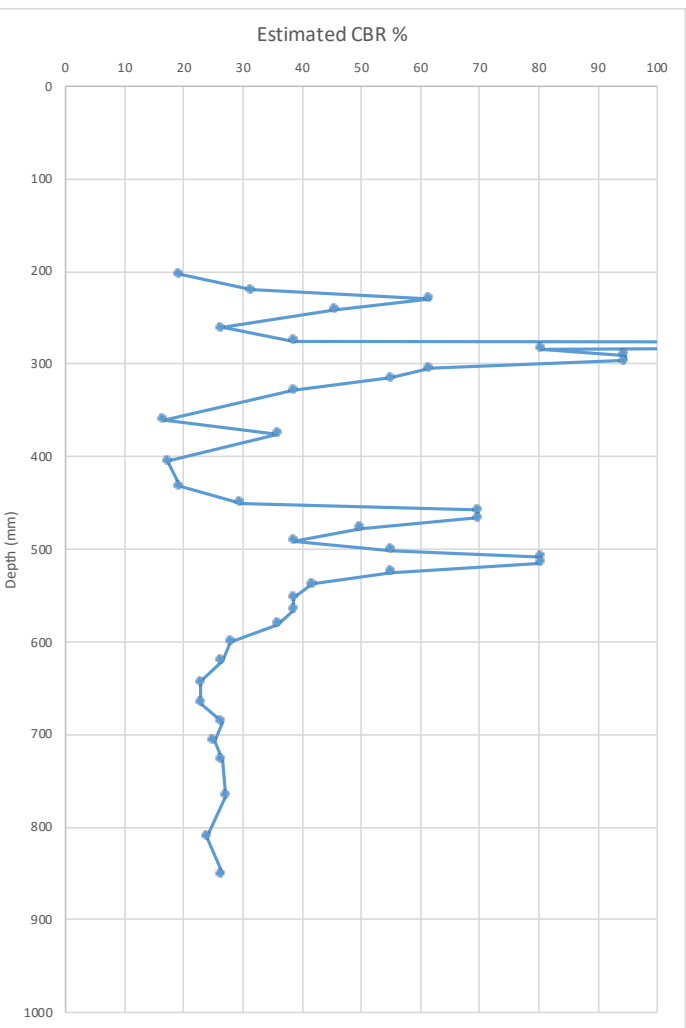
APPENDIX B

Dynamic Cone Penetrometer (DCP) Test Results





TRL Dynamic Cone Penetrometer Test Results						REMADA GEO CONSULTANTS				
Client:	Lidl Great Britain Ltd		Site Location:	Irlam Drive, Kirkby		Test No:	CBR3	Location:	341133, 398923	
Project No:	1373.02		Date:	08/04/2025		Start Depth:	Surface		Test Strata:	Soil
$Log10(CBR) = 2.480 - 1.057 \times Log10(mm/blow)$								Weather:	Sunny	
No of Blows	Depth Reading mm	Penetration/Blow mm	CBR %	Estimated CBR % 						
0	45	0								
1	112	67.0	3.5							
2	161	49.0	4.9							
3	219	58.0	4.1							
4	302	83.0	2.8							
5	394	92.0	2.5							
6	491	97.0	2.4							
7	593	102.0	2.3							
8	627	34.0	7.3							
13	634	1.4	211.6							
Notes: Refusal at 634mm										
Tested by: L Hillman				Checked by: K Szybut						
Date: 08.04.2025				Date: 09.04.25						

TRL Dynamic Cone Penetrometer Test Results						REMADA GEO CONSULTANTS					
Client:	Lidl Great Britain Ltd		Site Location:	Irlam Drive, Kirkby		Test No:	CBR4	Location:	341159, 398929		
Project No:	1373.02		Date:	20/03/2025		Start Depth:	100mm bgl	Test Strata:	Soil		
$Log10(CBR) = 2.480 - 1.057 \times Log10(mm/blow)$								Weather:	Sunny		
No of Blows	Depth Reading mm	Penetration/Blow mm	CBR %	Estimated CBR % 							
0	176	0									
2	203	13.5	19.3								
4	220	8.5	31.4								
6	229	4.5	61.6								
8	241	6.0	45.4								
10	261	10.0	26.5								
12	275	7.0	38.6								
14	277	1.0	302.0								
16	284	3.5	80.3								
18	290	3.0	94.6								
20	296	3.0	94.6								
22	305	4.5	61.6								
24	315	5.0	55.1								
26	329	7.0	38.6								
28	360	15.5	16.7								
30	375	7.5	35.9								
32	405	15.0	17.3								
34	432	13.5	19.3								
36	450	9.0	29.6								
38	458	4.0	69.8								
40	466	4.0	69.8								
42	477	5.5	49.8								
44	491	7.0	38.6								
46	501	5.0	55.1								
48	508	3.5	80.3								
50	515	3.5	80.3								
52	525	5.0	55.1								
54	538	6.5	41.8								
56	552	7.0	38.6								
58	566	7.0	38.6								
60	581	7.5	35.9								
62	600	9.5	28.0								
64	620	10.0	26.5								
66	643	11.5	22.8								
68	666	11.5	22.8								
70	686	10.0	26.5								
72	707	10.5	25.2								
74	727	10.0	26.5								
78	766	9.8	27.2								
82	810	11.0	23.9								
86	850	10.0	26.5								
Notes:											
Tested by: K Szybut						Checked by: K Szybut					
Date: 20.03.2025						Date: 09.04.25					



APPENDIX C

Gas Analyser Calibration Certificate

TEST DATE AND CONDITIONS	
Date	29/02/24
Atmospheric pressure	998mb
Ambient Temp	21.3°C
Envionics Serial No.	3268

GAS DATA LTD
Unit D,
Earlplace Business Park,
Coventry,
CV4 9XL, UK
+44 (0) 24 7630 3311



GFM436-1 FINAL INSPECTION & CALIBRATION CHECK CERTIFICATE

INSTRUMENT DETAILS	
Serial No	Customer
14048	Shawcity Ltd

INSTRUMENT CHECKS			
Keyboard	✓	Pump Flow	500cc/min
Display Contrast	✓	Pump Flow @ -200mB	350cc/min
Clock Set / Running	✓	S/W Version	G436-00.0029/0010
Labels Fitted	✓	Recalibration Date	01/03/25

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%	59.7	+/-3.0	0.0	0.0	0.0	+/-0.1
CO2	5%	0.0	0.0	5.0	+/-0.3	0.0	+/-0.1
	40%	0.0	0.0	40.0	+/-3.0	0.0	+/-0.1
O2	20.9%	0.0	0.0	0.1	+0.1	21.0	+/-0.5

OPTIONAL GAS CHECKS							
Calibration Gas		Instrument Gas Channels Read					
Gas Type	Applied Conc.	Label	H2S	CO		Hexane	tol. (% vol.)
		Range	5000ppm	2000ppm		2.00%	
N2	100%		0	0		0.000	0.0
H2S	1500ppm		1520	0			+/- 5.0
CO	1000ppm		90	994			+/- 5.0
Hexane	2.00%					2.035	+/- 10.0

PRESSURE CHECKS							
Calibration Pressure		Instrument Pressure Channels Read					
Pressure @	Applied Pressure	Atmospheric [Ap] (mB)	tol. (mB)				
All Ports	Current Atmospheric	998	+/-2.0				
Ap Port (Internal)	+800mB(a)	799	+/-5.0				
	+1200mB(a)	1199	+/-5.0				

TEST DATE AND CONDITIONS	
Date	04/03/24
Atmospheric pressure	994 mb
Ambient Temp	18.7 °C
EnviroNics Serial No.	3268/9416

GAS DATA LTD
Unit D,
Earlplace Business Park,
Coventry,
CV4 9XL, UK
+44 (0) 24 7630 3311



GFM436-1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS			
SO Number	Instrument Banner	Instrument Serial Number + SW Version	Job Number(s)
337447	GFM436	14048 V29.10	27294 - -

Calibration Technician [Signature]

DATE 29/2/24

Inspection Technician [Signature]

DATE 04/03/24

INSTRUMENT CHECKS		Pass (P), Fail (F) or not applicable(NA)	INSTRUMENT PACKING LIST		Tick if included
Function Tests	Dust Caps Fitted	P	Instrument		✓
	Keyboard Test (All keys)	P	Leather Case		✓
	Backlight Test	P	Instrument Strap		✓
	Clock Set / Running	P	AC Battery Charger (UK)		✓
	Comms Test	P	AC Battery Charger (EURO)		X
	Pump Flow Test (In & Out)	P	AC Battery Charger (US)		X
	Overall Leak Test (30mb)	N/A	AC Battery Charger (AUS)		X
	Battery Charge Test	P	Gas Sample Pipe		✓
	Service Date set to?	01/03/25	Hard Carry Case		✓
Channel Tests	Data Logging Enabled?	P	Spares Pot		✓
	Verify CH4/LEL/Hexane/PID	P	Allen Key		✓
	Verify CO2	P	Flow Sample Pipe		✓
	Verify O2	P	Temperature Probe		X
	Verify H2S	P	Vane Anemometer		X
	Verify CO	P	USB Cable		✓
	Verify LEL	P	USB Memory Stick		X
	Verify 1st Option gas	N/A	SM V5 Software	Ver	X
	Verify atmospheric pressure	P	Internal Filter Pack	Qty	X
	Verify differential pressure	P	External Filter Pack	Qty 10	✓
	Verify flow	P	Field Guide		X
	Verify temperature probe input	P	EX Safety Flier		✓
	Verify vane anemometer input	P	Extra Items:		
DataBase Checks	Jobcard(s) completed and signed	P			
	Jobcard(s) booked off database	P			
	Calibration certificate completed	P			
	Complete & print QI record	N/A			
Label Checks	No. of Calibration label fitted	12567	Comments		
	MCERTS label not displayed	P			
	Warranty label fitted	P			
H2S Range	H2S Range from SO	5000 ppm			
	H2S Range from cal cert	5000 ppm			
	Over-range value correct?	P			

TEST DATE AND CONDITIONS			
Date		11/04/2025	
Atmospheric Pressure		1005	mB
Ambient Temperature		21.3	°C
EnviroNics Serial No.		9370	

**GFM436 Final Inspection & Calibration
Check Certificate**

GAS DATA LTD

Unit D

Earlplace Business Park

Fletchamstead Highway

Coventry

CV4 9XL

Tel 02476303311

Fax 02476307711



GAS DATA
LISTEN • ANALYSE • INFORM

Customer	Remada Ltd
Certificate Number	126129
Order Number	342447

Serial Number	14048
Software Version	G436-00.0029/0010

Recalibration DUE Date
11/04/26

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	500	Accept > 200 cc/min	Pump Flow @ -200mB	300	Accept > 200 cc/min
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH ₄		CO ₂		O ₂	
	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %
	Readings %		Readings %		Readings %	
	59.8	60	39.5	40	20.9	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	5.0	5	5.0	5	6.0	6
	Accept ±0.3		Accept ±0.3		Accept ±0.3	
Zero Reading 100% N2	0.0	0	0.0	0	0.0	0
	Accept ±0.0		Accept ±0.0		Accept ±0.1	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings (ppm)			
Gas Type	Range (ppm)		Zero Reading		Instrument Gas Reading	
H2S	5000	1500	0	Accept ±0.0	1500	Accept ±5.0%
CO	2000	1000	0	Accept ±0.0	1003	Accept ±5.0%
Hexane	2.0%	2.0%	0	Accept ±0.0	1.99	Accept ±10.0%

Cross Gas Effects									
Applied Gas (ppm)		Instrument Readings (ppm)							
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:	HEX		
H2S	1500	1500		0		0			
CO	1000	90		1003		0			
Hexane	2.0%	0		0		1.99			

Pressure Checks			
Atmospheric Pressure [AP] (mB)			
Current Atmospheric Pressure (mB)		Instrument Atmospheric Pressure Reading (mB)	
AP Open Ports		1005	Accept ± 2.0
AP Port (Internal)	+800 mB	800	Accept ± 5.0
	+1200mb	1200	Accept ± 5.0

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading (l/h)	Instrument Reading (l/h)		Applied Pressure (Pa)	Instrument Reading (Pa)	
-30	-30.1	Accept ± 3.0	-391	-397	Accept ± 50
-3	-3.0	Accept ± 1.0	-17	-18	Accept ± 6.0
0	0.0	Accept ± 0.0	0	0	Accept ± 0.5
3	3.0	Accept ± 0.5	15	16	Accept ± 3.0
30	30.0	Accept ± 3.0	344	344	Accept ± 50
60	60.2	Accept ± 6.0	1081	1098	Accept ± 130
90	91.6	Accept ± 9.0	2141	2238	Accept ± 250

Temperature Checks		
Calibration Temperature	Instrument Temperature Reading $^{\circ}\text{C}$	
Applied Temperature $^{\circ}\text{C}$		
-10	-10.0	Accept ± 2.0
0	0.0	Accept ± 1.0
30	30.0	Accept ± 1.0
60	60.0	Accept ± 1.0
100	100.0	Accept ± 1.0

Technician:
<i>Jack Rutland</i>

Date Tested:
<i>11/04/2025</i>

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, BS EN ISO14001:2015, BS EN ISO45001:2018 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, BS EN ISO14001:2015, BS EN ISO45001:2018.

TEST DATE AND CONDITIONS			
Date	11.4.25		
Atmospheric Pressure	1005	mB	
Ambient Temperature	21.3	°C	
EnviroNics Serial No.	5089		

GAS DATA LTD Unit D Earlplace Business Park Fletchamstead Highway Coventry CV4 9XL UK +44 (0) 24 7630 3311	 GAS DATA LISTEN - ANALYSE - INFORM
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GFM436-1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS			
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)
342447	GFM436	14048 G436-29/10	126129

Calibration Technician *J. Williams*

Date 11.4.25

Inspection Technician *J. Williams*

Date 15.6.23

INSTRUMENT CHECKS		Pass (P), Fail (F) or not applicable (NA)	INSTRUMENT PACKING LIST		Tick if included
Function Tests	Dust Caps Fitted	P	Instrument		✓
	Keyboard Test (All Keys)	P	Leather Case		✓
	Backlight	P	Instrument Strap		✓
	Clock Set / Running	P	AC Battery Charger (UK)		✓
	Comms Test	P	AC Battery Charger (EURO)		X
	Pump Flow Test (In & Out)	P	AC Battery Charger (US)		X
	Overall Leak Test (30mB)	n/a	AC Battery Charger (AUS)		X
	Battery Charge Test	P	Gas Sample Pipe - (new issue)		✓
	Service Date set to?	11/04/26	Flow Sample Pipe - (new issue)		✓
Channel Tests	Data Logging Enabled?	P	Hard Carry Case		✓
	Verify CH4/LEL/Hexane/PID	P	Spares Pot		✓
	Verify CO2	P	Allen Key		✓
	Verify O2	P	Temperature Probe		X
	Verify H2S	P	Vane Anemometer		Y
	Verify CO	P	USB Cable		X
	Verify LEL	P	USB Memory stick		X
	Verify 1 st Option Gas	N/A	SM V5 Software	Ver 6.05	X
	Verify Atmospheric pressure	P	Internal Filter Pack	Qty	X
	Verify differential pressure	P	External Filter Pack	Qty	X
	Verify flow	P	Field Guide		✓
	Verify temperature probe input	P	Extra Items: USED TUBING. TAG.		
	Verify vane anemometer input	P			
	Verify vane anemometer input	P			
DataBase Checks	Jobcard(s) completed and signed	P	Comments: N/A		
	Jobcard(s) booked off database	P			
	Calibration certificate completed	P			
	Complete & print QI record	n/a			
Label Checks	No. of Calibration label fitted	GDC 13791			
	MCERTS label displayed	P			
	Warranty label fitted	P			
H2S Range	H2S Range from Sales Order	5000 ppm			
	H2S Range from Cal Cert	5000 ppm			
	Over-range value correct?	P			
QA Cylinders Used	No. of High Range CH4/CO2	SIPLEX110 - 56779			
	No. of Low Range CH4/CO2/O2	" - 69849			
	No. of H2S	" 6037295			
	No. of CO	" - 69834			
	No. of Optional Cylinder	N/A			



APPENDIX D

Laboratory Chemical Analysis

Remada Ltd
Forward House
17 High Street
Henley-in-Arden
Warwickshire
B955AA

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

e: krysia.szybut@remada.co.uk
info@remada.co.uk

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 25-012689

Project / Site name:	Irlam Drive, Kirkby	Samples received on:	13/03/2025
Your job number:	1373.02	Samples instructed on/ Analysis started on:	13/03/2025
Your order number:	1373.02	Analysis completed by:	24/03/2025
Report Issue Number:	1	Report issued on:	24/03/2025
Samples Analysed:	11 soil samples		

Signed:



Joanna Wawrzeczko
Senior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-012689
Project / Site name: Irlam Drive, Kirkby
Your Order No: 1373.02

Lab Sample Number	481202	481203	481204	481205	481206
Sample Reference	WS01	WS05	WS07	WS02	WS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.80	0.70	0.45	0.30	0.40
Date Sampled	11/03/2025	12/03/2025	11/03/2025	11/03/2025	11/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	40	65.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	7.3	9.9	20	5
Total mass of sample received	kg	0.1	NONE	2	2	2	0.6	0.6

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SSZ	SSZ	SSZ	SSZ	SSZ
Analysis completed	N/A	N/A	N/A	21/03/2025	21/03/2025	21/03/2025	21/03/2025	21/03/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.6	10.6	7.7	8	8.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	-
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	-	-	-	-
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	-	-
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.011	0.0056	0.033	0.029	0.012
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	-	-	-	-
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Analytical Report Number: 25-012689
Project / Site name: Irlam Drive, Kirkby
Your Order No: 1373.02

Lab Sample Number	481202	481203	481204	481205	481206
Sample Reference	WS01	WS05	WS07	WS02	WS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.80	0.70	0.45	0.30	0.40
Date Sampled	11/03/2025	12/03/2025	11/03/2025	11/03/2025	11/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.47	0.38	2.5	< 0.05	2
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.06	0.41	< 0.05	0.09
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.06	1.2	< 0.05	0.58
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.09	1.2	< 0.05	0.61
Phenanthrene	mg/kg	0.05	MCERTS	0.26	0.8	11	< 0.05	0.5
Anthracene	mg/kg	0.05	MCERTS	0.06	0.16	2.9	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.62	0.87	12	0.08	0.1
Pyrene	mg/kg	0.05	MCERTS	0.57	0.84	13	< 0.05	0.11
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.25	0.36	6.3	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.36	0.38	6.7	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.36	0.36	6.4	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.15	0.17	2.9	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.28	0.36	6.6	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.14	0.15	3	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.91	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.21	0.2	3.9	< 0.05	< 0.05
Coronene	mg/kg	0.05	NONE	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	3.74	5.23	81.3	< 0.80	4.04
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.6	5	66	4.7	4.2
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.39	0.46	2.8	0.35	1
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	1.2	0.9	0.8	0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2	2.1	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	12	14	34	12	38
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	14	35	13	38
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	13	380	17	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	33	19	1400	140	8.1
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	1.7	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	10	65	6.8	31
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	15	15	67	19	37
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	34	36	1000	45	58

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	-
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	-

Analytical Report Number: 25-012689
Project / Site name: Irlam Drive, Kirkby
Your Order No: 1373.02

Lab Sample Number	481202	481203	481204	481205	481206
Sample Reference	WS01	WS05	WS07	WS02	WS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.80	0.70	0.45	0.30	0.40
Date Sampled	11/03/2025	12/03/2025	11/03/2025	11/03/2025	11/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	8.4
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	3.3	6.8	< 2.0	110
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	13	9.2	< 8.0	150
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	240	37	< 8.0	48
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	250	53	< 10	310

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	2.5	< 1.0	7
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	3.9	7.8	< 2.0	69
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	33	< 10	94
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	48	40	< 10	24
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	52	83	< 10	190

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-012689
Project / Site name: Irlam Drive, Kirkby
Your Order No: 1373.02

Lab Sample Number	481207	481208	481209	481210	481211
Sample Reference	WS02	WS06	WS01	WS02	WS04
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.20	0.10	2.70	1.60	1.50
Date Sampled	11/03/2025	11/03/2025	12/03/2025	11/03/2025	11/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	1.3	1.9	14	12	11
Total mass of sample received	kg	0.1	NONE	0.7	0.7	0.5	0.5	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	-	-
Analysis completed	N/A	N/A	N/A	-	-	-	-	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	8	8.4	8.7
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	0.029	0.01	0.009
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	180	28	29
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	91.1	13.9	14.4
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	13	81	7.5
Total Sulphur	mg/kg	50	MCERTS	-	-	440	< 50	< 50
Total Sulphur	%	0.005	MCERTS	-	-	0.044	< 0.005	< 0.005
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	-	-	1.9	1.1	< 0.5
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	0.13	0.08	< 0.05
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	-	-	-	-	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	-	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	-	< 5.0	< 5.0	< 5.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-
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Analytical Report Number: 25-012689
Project / Site name: Irlam Drive, Kirkby
Your Order No: 1373.02

Lab Sample Number	481207	481208	481209	481210	481211
Sample Reference	WS02	WS06	WS01	WS02	WS04
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.20	0.10	2.70	1.60	1.50
Date Sampled	11/03/2025	11/03/2025	12/03/2025	11/03/2025	11/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.31	0.26	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.06	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.05	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.27	-	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.12	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.55	-	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.79	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.31	-	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	1	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.36	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.6	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.1	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.22	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	1.7	-	-	-
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.85	8.45	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-	-	-
Chromium (III)	mg/kg	1	NONE	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	6.3	8	49
Magnesium (water soluble)	mg/kg	5	NONE	-	-	13	16	98

Analytical Report Number: 25-012689
 Project / Site name: Irlam Drive, Kirkby
 Your Order No: 1373.02

Lab Sample Number	481207	481208	481209	481210	481211
Sample Reference	WS02	WS06	WS01	WS02	WS04
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.20	0.10	2.70	1.60	1.50
Date Sampled	11/03/2025	11/03/2025	12/03/2025	11/03/2025	11/03/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	-	-	-	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	-	-

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	8	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-012689
 Project / Site name: Irlam Drive, Kirkby
 Your Order No: 1373.02

Lab Sample Number				481212
Sample Reference				WS05
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				2.80
Date Sampled				12/03/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	13
Total mass of sample received	kg	0.1	NONE	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	-
Analysis completed	N/A	N/A	N/A	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.5
Total Cyanide	mg/kg	1	MCERTS	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.014
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	21
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	10.6
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	19
Total Sulphur	mg/kg	50	MCERTS	< 50
Total Sulphur	%	0.005	MCERTS	< 0.005
Ammoniacal Nitrogen as NH ₄ ⁺	mg/kg	0.5	MCERTS	< 0.5
Ammonium as NH ₄ ⁺ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	-
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-
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Analytical Report Number: 25-012689
 Project / Site name: Irlam Drive, Kirkby
 Your Order No: 1373.02

Lab Sample Number				481212
Sample Reference				WS05
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				2.80
Date Sampled				12/03/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-
Coronene	mg/kg	0.05	NONE	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-
Chromium (III)	mg/kg	1	NONE	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-

Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0

Analytical Report Number: 25-012689
 Project / Site name: Irlam Drive, Kirkby
 Your Order No: 1373.02

Lab Sample Number				481212
Sample Reference				WS05
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				2.80
Date Sampled				12/03/2025
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-
Benzene	µg/kg	5	MCERTS	-
Toluene	µg/kg	5	MCERTS	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	8	MCERTS	-
o-Xylene	µg/kg	5	MCERTS	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 25-012689
Project / Site name: Irlam Drive, Kirkby

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
481202	WS01	None Supplied	0.8	Brown sand with gravel and vegetation
481203	WS05	None Supplied	0.7	Brown sand with gravel and stones
481204	WS07	None Supplied	0.45	Brown sand with clinker and stones
481205	WS02	None Supplied	0.3	Brown sand with gravel
481206	WS06	None Supplied	0.4	Brown clay and sand with gravel
481207	WS02	None Supplied	0.2	Non Soil. ^{*9}
481208	WS06	None Supplied	0.1	Non Soil. ^{*9}
481209	WS01	None Supplied	2.7	Brown clay with vegetation
481210	WS02	None Supplied	1.6	Brown sand with gravel
481211	WS04	None Supplied	1.5	Brown sand with gravel
481212	WS05	None Supplied	2.8	Brown sandy clay

Analytical Report Number : 25-012689

Project / Site name: Irlam Drive, Kirkby

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
TPH Chromatogram in soil	TPH Chromatogram in soil	In-house method	L064B	D	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL/L130B	W	NONE

Analytical Report Number : 25-012689
Project / Site name: Irlam Drive, Kirkby

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
Ammonium as NH ₄ in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate	In-house method	L009B	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

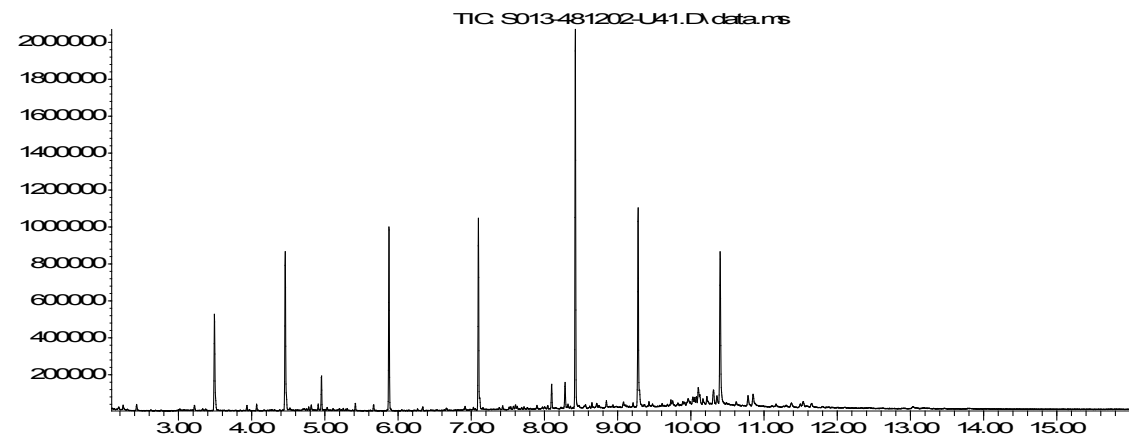
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

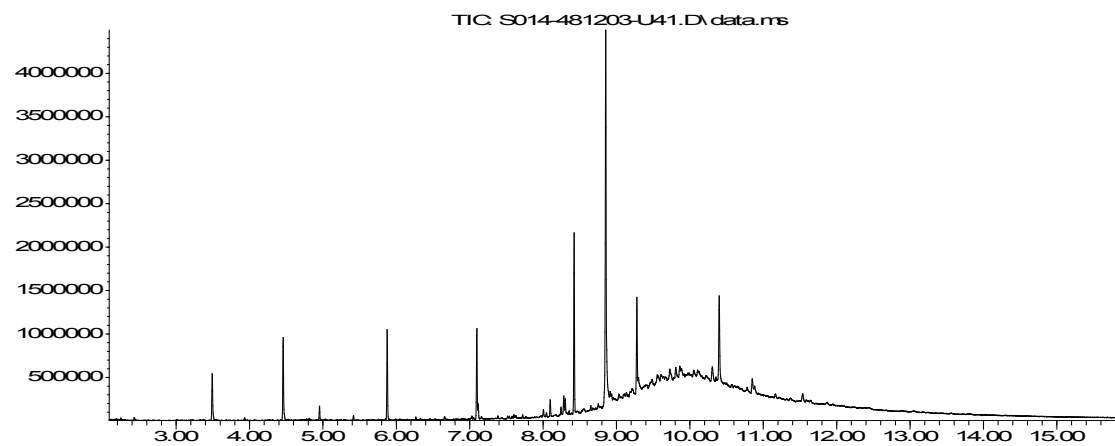
Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

*g - Unaccredited sample matrix.

Abundance

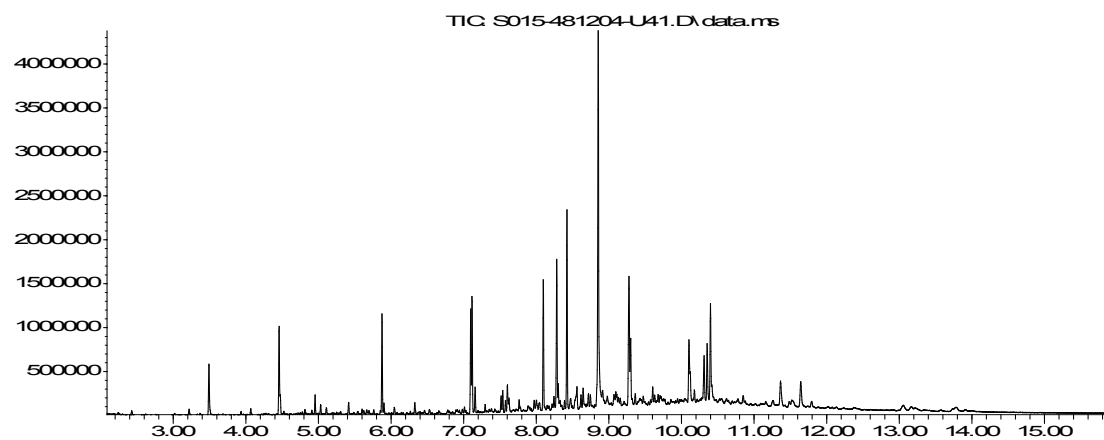


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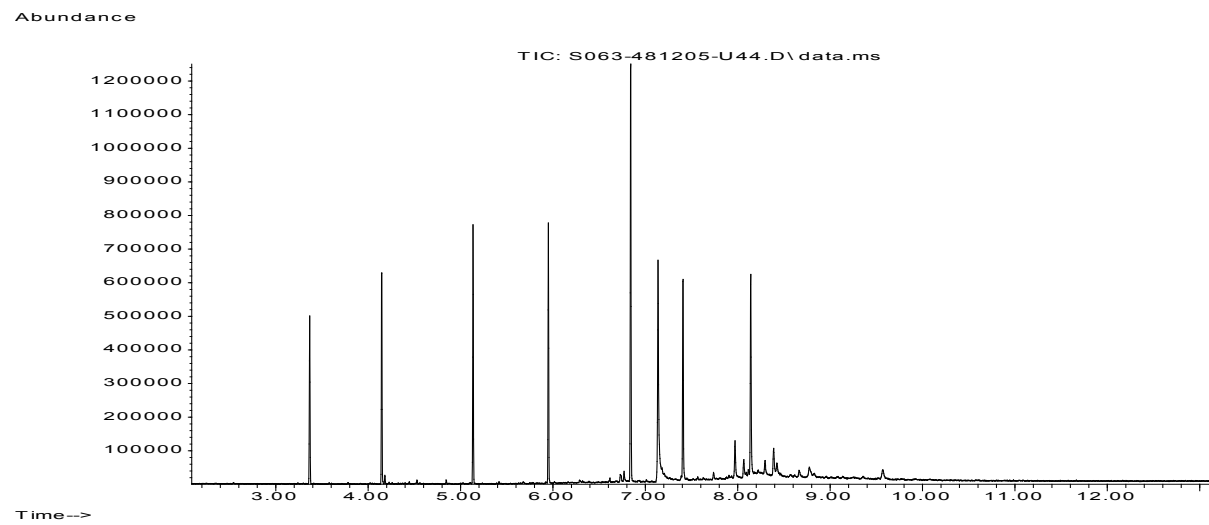


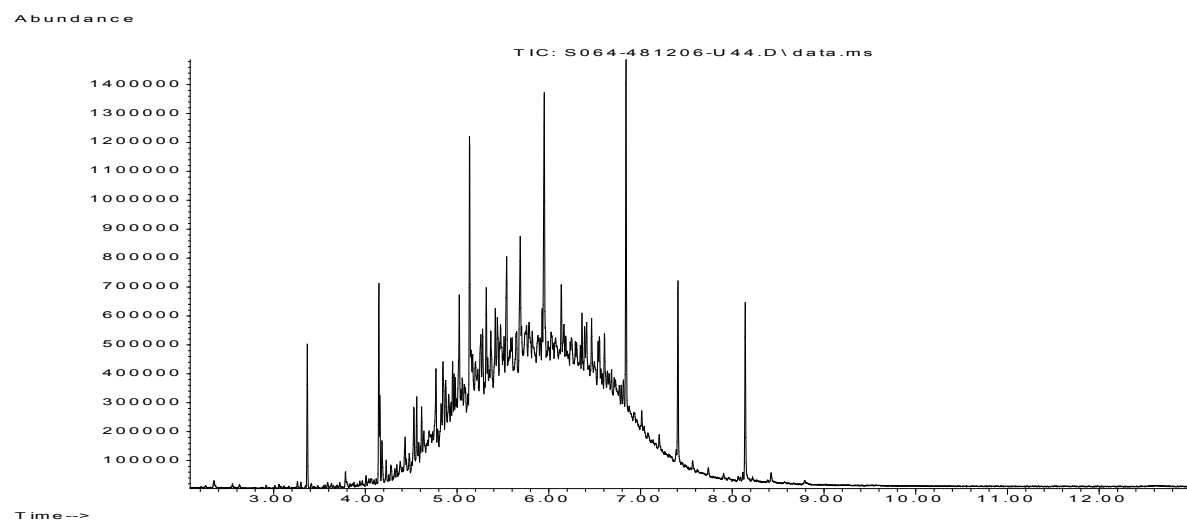
Time-->

Abundance



Time-->





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Analytical Report Number : 25-012691

Project / Site name:	Irlam Drive, Kirkby	Samples received on:	13/03/2025
Your job number:	1373.02	Samples instructed on/ Analysis started on:	13/03/2025
Your order number:	1373.02	Analysis completed by:	24/03/2025
Report Issue Number:	1	Report issued on:	24/03/2025
Samples Analysed:	3 10:1 WAC samples		

Signed:



Joanna Wawrzeczko
Senior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-012691
Project / Site name: Irlam Drive, Kirkby
Your Order No: 1373.02

Lab Sample Number				481221	481222	481223
Sample Reference				WS01	WS05	WS07
Sample Number				None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A
Depth (m)				0.80	0.70	0.45
Date Sampled				11/03/2025	12/03/2025	11/03/2025
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Stone Content	%	0.1	NONE	< 0.1	40	65.1
Moisture Content	%	0.01	NONE	10	7.3	9.9
Total mass of sample received	kg	0.1	NONE	2	2	2

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	7.5	8.8	7.6
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.9	0.6	3.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	2	1.8	8.4
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	3.6	12	6.5

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.47	0.38	2.5
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.06	0.41
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.06	1.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.09	1.2
Phenanthrene	mg/kg	0.05	MCERTS	0.26	0.8	11
Anthracene	mg/kg	0.05	MCERTS	0.06	0.16	2.9
Fluoranthene	mg/kg	0.05	MCERTS	0.62	0.87	12
Pyrene	mg/kg	0.05	MCERTS	0.57	0.84	13
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.25	0.36	6.3
Chrysene	mg/kg	0.05	MCERTS	0.36	0.38	6.7
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.36	0.36	6.4
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.15	0.17	2.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.28	0.36	6.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.14	0.15	3
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.91
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.21	0.2	3.9
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	1.4

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	3.74	5.23	82.7
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Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) EH_CU_1D_AL	mg/kg	10	NONE	< 10	290	64
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0

Total BTEX	µg/kg	10	MCERTS	< 10	< 10	< 10
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Analytical Report Number: 25-012691
 Project / Site name: Irlam Drive, Kirkby
 Your Order No: 1373.02

Lab Sample Number				481221	481222	481223
Sample Reference				WS01	WS05	WS07
Sample Number				None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A
Depth (m)				0.80	0.70	0.45
Date Sampled				11/03/2025	12/03/2025	11/03/2025
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007	< 0.007

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Waste Acceptance Criteria Analytical Results

Waste Acceptance Criteria Analytical Results							
Report No:	25-012691						
					Client: REMADALT		
					Landfill Waste Acceptance Criteria Limits Inert Waste Landfill Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill Hazardous Waste Landfill		
Location	Irlam Drive, Kirkby						
Lab Reference (Sample Number)	481221						
Sampling Date	11/03/2025						
Sample ID	WS01						
Depth (m)	0.80						
Solid Waste Analysis							
TOC (%)**	0.9				3%	5%	6%
Loss on Ignition (%) **	2.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	3.74				100	--	--
pH (units)**	7.5				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	3.6				--	To be evaluated	To be evaluated
Eluate Analysis							
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:1	Limit values for compliance leaching test		
	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.00261			0.0261	0.5	2	25
Barium *	0.0128			0.128	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.0017			0.017	0.5	10	70
Copper *	0.016			0.16	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.00353			0.0353	0.5	10	30
Nickel *	0.0019			0.019	0.4	10	40
Lead *	0.0037			0.037	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.011			0.11	4	50	200
Chloride *	1.2			12	800	15000	25000
Fluoride*	0.52			5.2	10	150	500
Sulphate *	5.5			55	1000	20000	50000
TDS*	43			430	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	5.40			54.0	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	90						
Moisture (%)	10						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
* = UKAS accredited (liquid eluate analysis only)							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Where colour coding is used on this report, this is for guidance purposes only. This does not constitute a statement of conformity of pass or fail.
Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



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Waste Acceptance Criteria Analytical Results								
Report No:		25-012691						
						Client: REMADALT		
Location		Irlam Drive, Kirkby				Landfill Waste Acceptance Criteria Limits Inert Waste Landfill Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill Hazardous Waste Landfill		
Lab Reference (Sample Number)		481222						
Sampling Date		12/03/2025						
Sample ID		WS05						
Depth (m)		0.70						
Solid Waste Analysis								
TOC (%)**	0.6				3%	5%	6%	
Loss on Ignition (%) **	1.8				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007				1	--	--	
Mineral Oil (mg/kg) EH, LD, CU, AL	290				500	--	--	
Total PAH (WAC-17) (mg/kg)	5.23				100	--	--	
pH (units)**	8.8				--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	12				--	To be evaluated	To be evaluated	
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test			
	(BS EN 12457 - 2 preparation utilising end over end leaching procedure)			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
	mg/l			mg/kg				
Arsenic *	0.00527			0.0527	0.5	2	25	
Barium *	0.0123			0.123	20	100	300	
Cadmium *	< 0.000100			< 0.00100	0.04	1	5	
Chromium *	0.0028			0.028	0.5	10	70	
Copper *	0.015			0.15	2	50	100	
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2	
Molybdenum *	0.00475			0.0475	0.5	10	30	
Nickel *	0.0029			0.029	0.4	10	40	
Lead *	0.0034			0.034	0.5	10	50	
Antimony *	0.0073			0.073	0.06	0.7	5	
Selenium *	< 0.0040			< 0.040	0.1	0.5	7	
Zinc *	0.0096			0.096	4	50	200	
Chloride *	5.0			50	800	15000	25000	
Fluoride*	0.37			3.7	10	150	500	
Sulphate *	14			140	1000	20000	50000	
TDS*	83			830	4000	60000	100000	
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-	
DOC	8.78			87.8	500	800	1000	
Leach Test Information								
Stone Content (%)	40.0							
Sample Mass (kg)	2.0							
Dry Matter (%)	93							
Moisture (%)	7.3							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					* = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** - MCFETS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.



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Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Where colour coding is used on this report, this is for guidance purposes only. This does not constitute a statement of conformity of pass or fail.

Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number : 25-012691
Project / Site name: Irlam Drive, Kirkby

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
481221	WS01	None Supplied	0.8	Brown sand with gravel and vegetation
481222	WS05	None Supplied	0.7	Brown sand with gravel and stones
481223	WS07	None Supplied	0.45	Brown sand with clinker and stones

Analytical Report Number : 25-012691

Project / Site name: Irlam Drive, Kirkby

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1 ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
Sample Preparation		In-house method	L043B	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047-PL	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025

Analytical Report Number : 25-012691
Project / Site name: Irlam Drive, Kirkby

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



APPENDIX E

Laboratory Geotechnical Tests



Laboratory Report



Contract Number: 77798

Client Ref: **1373.02**

Client PO: **1373.02**

Date Received: **21-03-2025**

Date Completed: **25-03-2025**

Report Date: **25-03-2025**

Client: **Remada Limited**

This report has been checked and approved by:

Contract Title: **Irlam Drive, Kirkby**

For the attention of: **Krysia Szybut**

Brendan Evans

Senior Office Administrator

Description	Qty
Determination of water content BS EN ISO 17892-1:2014	7
4 Point Liquid & Plastic Limit.. BS EN ISO 17892-12 - * UKAS	7
Particle Size Distribution BS EN ISO 17892-4 : 5.1 - * UKAS	1
Sedimentation by Pipette Method BS EN ISO 17892-4 : 5.4	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

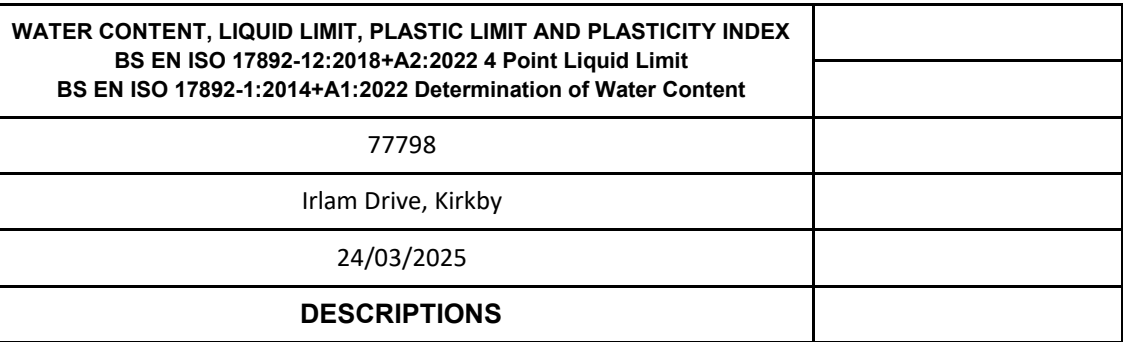
This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Senior Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)

Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)

Wayne Honey (HR & HSE Manager)

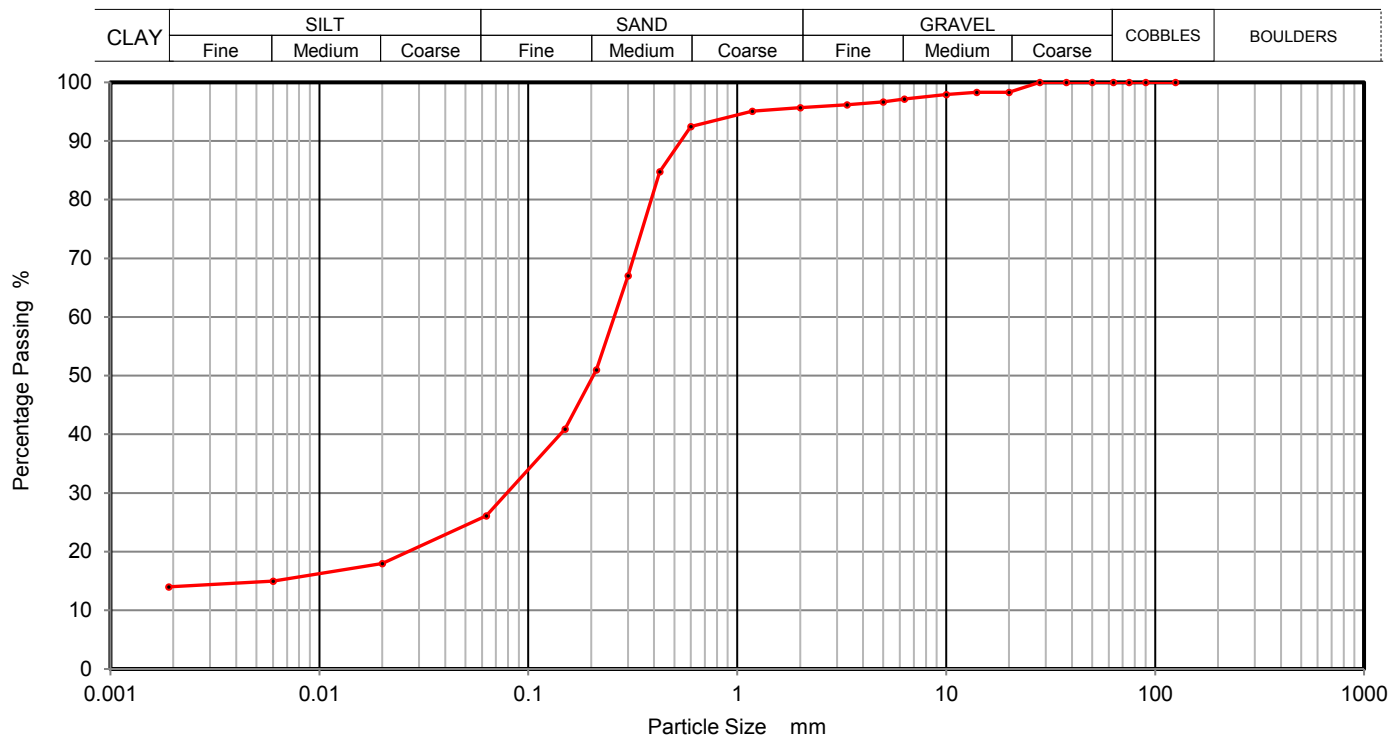
[illegible]

Operator
Aaron. H

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve & Pipette Analysis, Clause 5.2 & 5.4

Contract Number	77798
Borehole/Pit No.	WS06
Sample No.	
Depth Top	1.00
Depth Base	2.00
Sample Type	B

Project Name	Irlam Drive, Kirkby
Sample Description	Brown/ red slightly gravelly silty clayey fine to coars SAND
Date Tested	24/03/2025



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	18
90	100	0.0060	15
75	100	0.0020	14
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	98		
10	98		
6.3	97		
5	97		
3.35	96		
2	96		
1.18	95		
0.63	92		
0.425	85		
0.30	67		
0.20	51		
0.15	41		
0.063	26		

Sample Proportions	% dry mass
Cobbles	0
Gravel	4
Sand	70
Silt	12
Clay	14

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Cameron. T

Appendix E

Utility Assets V2

Groundwise Searches Ltd

Suite 6, Princess Caroline House
1 High Street,
Southend on Sea, ESSEX
SS1 1JE

FAO:

How to contact us:

United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

Your Ref: 37142DM-GWS
Our Ref: UUPS-ORD-629829
Date: 07/02/2025

Dear Sirs

Location: 37142DM-GWS

I acknowledge with thanks your request dated 03/02/2025 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. <http://www.unitedutilities.com/work-near-asset.aspx>.

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please [contact us](#).

Yours Faithfully,



Karen McCormack
Property Searches Manager

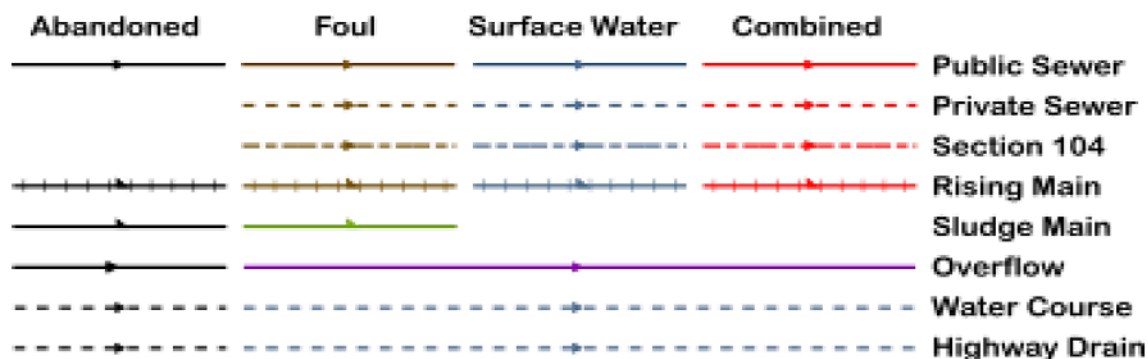
TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

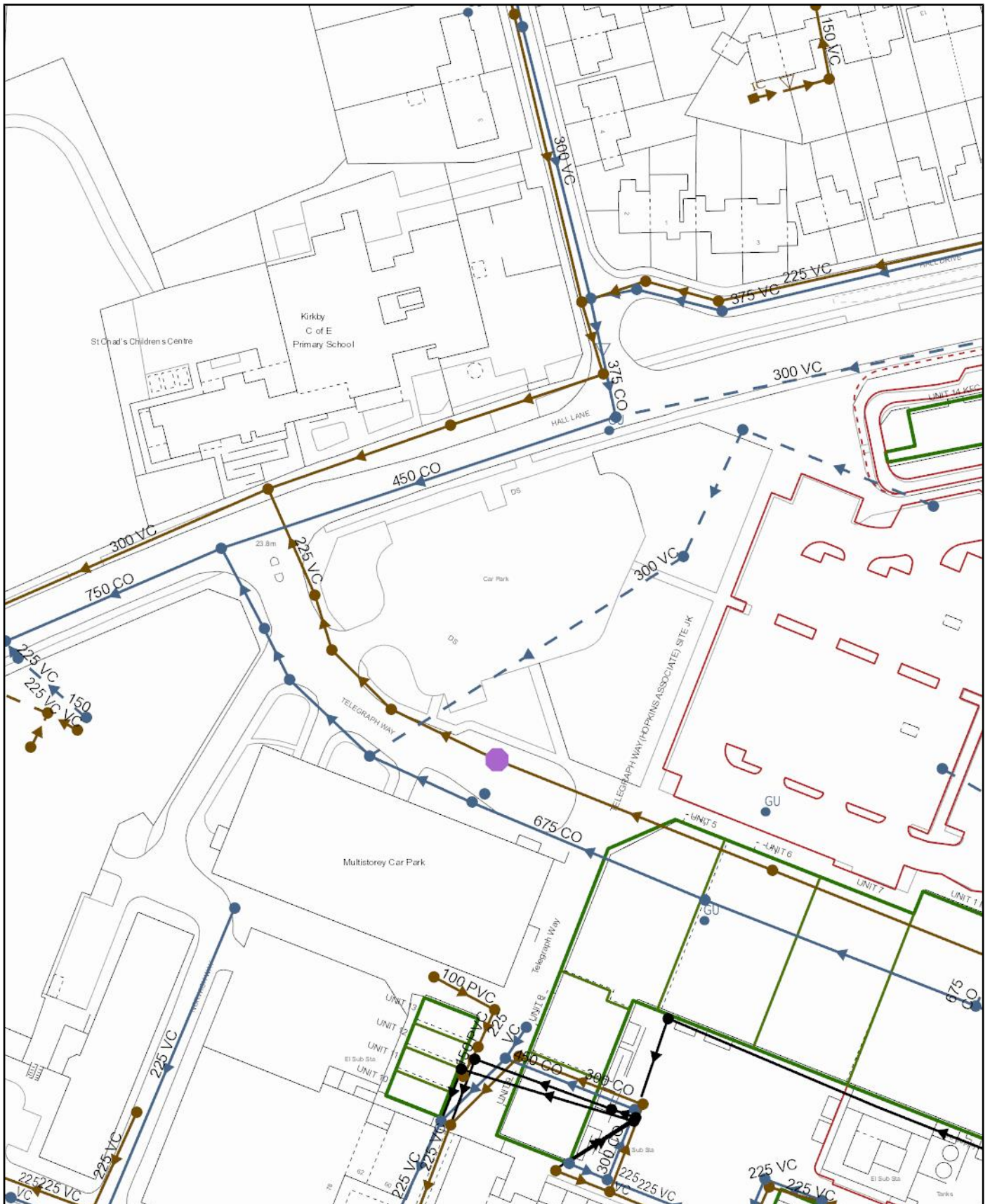
- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

Wastewater Symbolology



All point assets follow the standard colour convention: **red** – combined **brown** - foul
blue – surface water **purple** - overflow

Manhole	Side Entry Manhole
Head of System	Outfall
Extent of Survey	Screen Chamber
Rodding Eye	Inspection Chamber
Inlet	Bifurcation Chamber
Discharge Point	Lamp Hole
Vortex	T Junction / Saddle
Penstock	Catchpit
Washout Chamber	Valve Chamber
Valve	Vent Column
Air Valve	Vortex Chamber
Non Return Valve	Penstock Chamber
Soakaway	Network Storage Tank
Gully	Sewer Overflow
Cascade	Ww Treatment Works
Flow Meter	Ww Pumping Station
Hatch Box	Septic Tank
Oil Interceptor	Control Kiosk
Summit	DNM Network Monitoring Point
Drop Shaft	Change of Characteristic
Orifice Plate	



Scale: 1:1253
Date: 07/02/2025

SEWER RECORDS



Address or Site Reference: 37142DM-GWS
Printed by: Property Searches

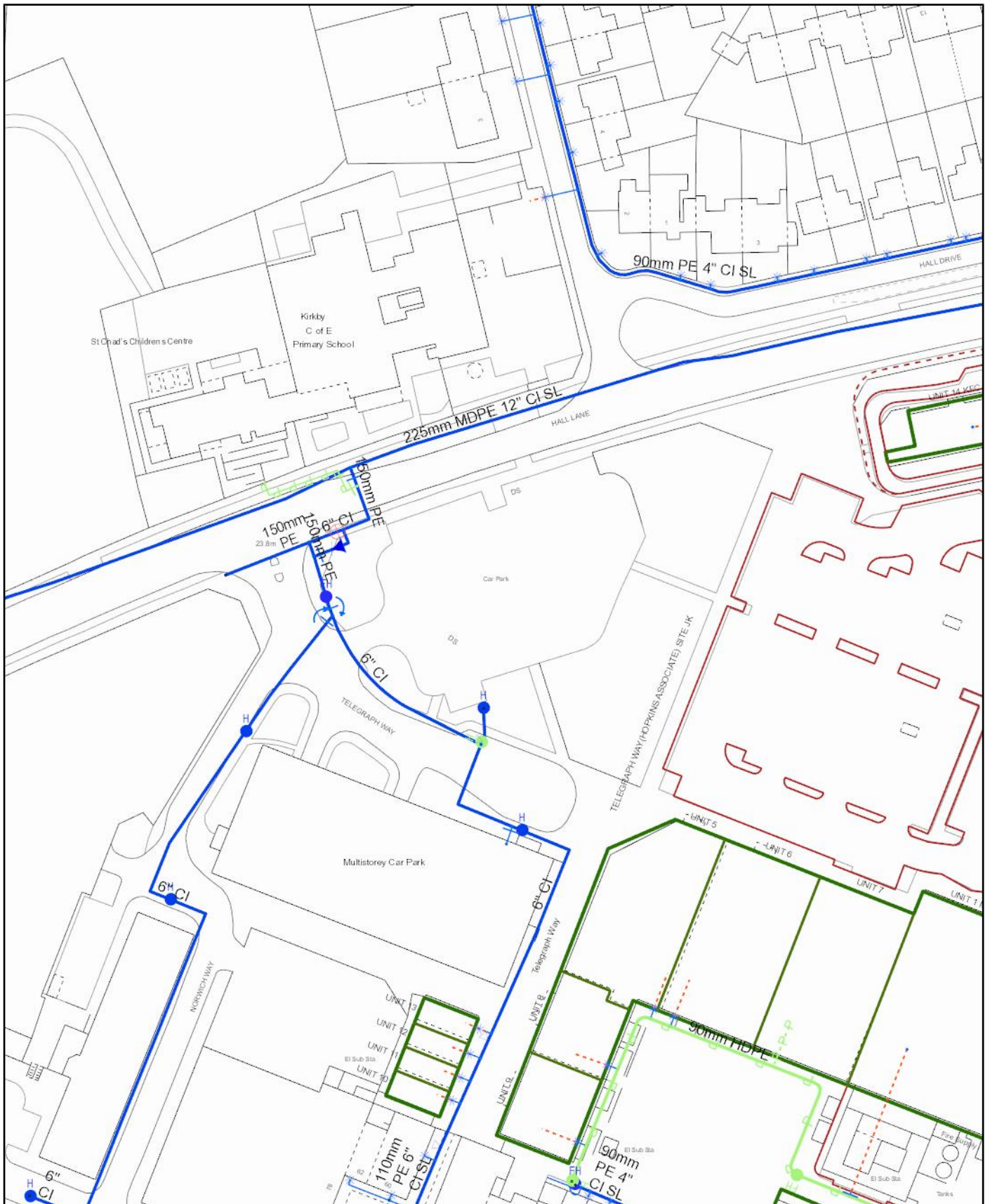
The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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Clean Water Symbolology

Proposed	Abandoned	Live	
			Distribution Main
			Trunk Main
			Comms Pipe
			Private Pipe
			Concessionary Service
			Raw Water
			LDTM Raw Water
			LDTM Treated Water
			Air Valve
			AC Valve, open
			AC Valve, closed
			CC Valve, open
			CC Valve, closed
			Non Return Valve
			Pressure Management Valve
			OMS Valve
			Stop Tap
			Flow Meter
			Domestic Meter
			Commercial Meter
			Pump
			Hydrant
			Fire Hydrant
			Anode
			Chlorination Point
			De-chlorination Point
			Strainer Point
			Access Point
			Hatch Box
			IP Point
			Sampling Station
			Logger Box
			Bore Hole
			Inlet Point
			Bulk Supply Point
			End Cap
			Site Termination
			Change of Characteristic
			Condition Report
			<u>Property Types</u>
			Water Tower
			Valve House
			Booster Pumping Station
			Intake Pumping Station
			Water Treatment Works
			Supply Reservoir
			Service Reservoir
			Impounding Reservoir
			Pipe Bridge

Symbology for proposed assets is the same as above, but shown in **green**
 Symbology for abandoned assets is the same as above, but shown in **black**



Scale: 1:1253
Date: 07/02/2025

WATER MAINS RECORDS

Address or Site Reference: 37142DM-GWS
Printed by: Property Searches



The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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United Utilities Grasmere House, 2nd Floor
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

18.06.25

Dear Mike,

Pre-Development Enquiry for Lidl, Kirkby UU Reference Number: 07526232

We have assessed your application based on the information provided. This pre-development advice on your drainage strategy will be valid for 12 months. Your strategy will need review by other authorities as part of the planning process. We advise conducting necessary site investigations to confirm viability of your proposals.

Modelled Flood Risk

[Please see the image on page 3 for details](#)

I can confirm that we do not have modelled flood risk within the vicinity of the proposed development.

Please note that our modelling data is indicative, and only representative of the 1:100year storm event.

[Please see comment 2 of the attached guidance sheet](#)

Asset Protection

1. We have reviewed our records and can confirm that there does not appear to be any charted public sewers located within the boundary of the proposed development.
2. There is a highway drain that crosses your site.

[Please see comment 3 of the attached guidance sheet and Working Near Our Pipelines Guidance document](#)

Foul Water

Foul flow from this site will be allowed to drain into the public foul water/combined sewer system.

Our preferred point of discharge would be to the West of your proposed development at an unrestricted rate.

Manhole reference SD1805, **Grid reference** 341138, 398880

[Please see the images on page 3 for clarification](#)

Surface Water

Follow the National Planning Policy Guidance drainage hierarchy and Provide evidence for discounting higher options before considering public sewer discharge. Consult the Lead Local Flood Authority regarding surface water concerns.

[Please see comment 4 within the guidance sheet](#)

Infiltration

[Please see comment 4 within the guidance sheet](#)

Waterbody

If an evidence based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you contact the Lead Local Flood Authority and/or Environment Agency to discuss a point of discharge to the highway drain located in the site boundary.

We would encourage you to engage with any third-party landowner and riparian owner to agree access and discharge rights to the water body if this is not in your ownership.

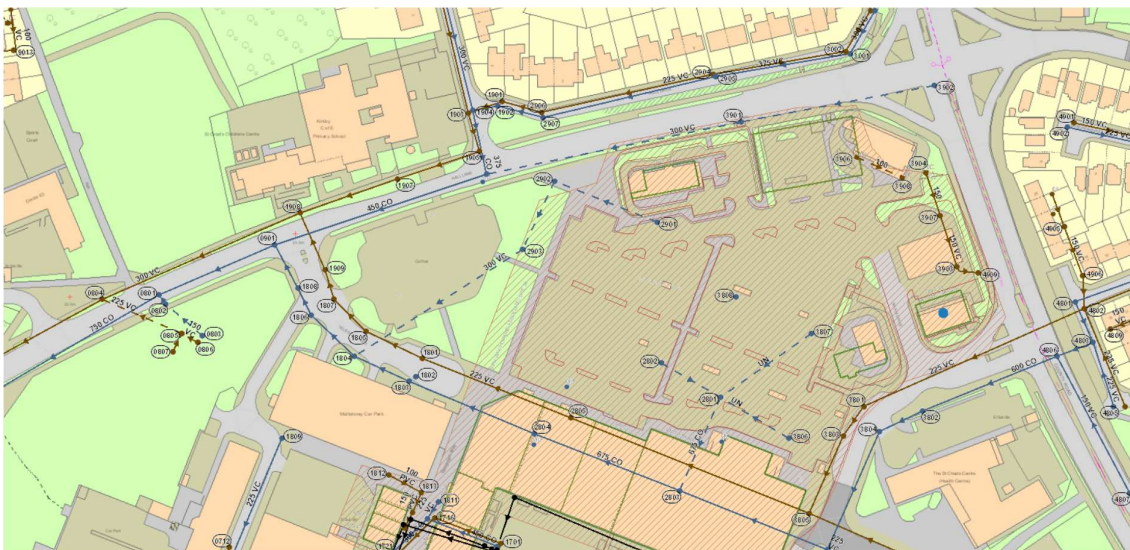
Public Sewer

United Utilities will consider a connection to the 675mm diameter public surface water sewer within Telegraph Way located West of the proposed site at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities requests that any agreed rate does not exceed 3.4 l/s.

Manhole reference SD1804, Grid reference 341132, 398869

[Please see images on page 3 for clarification](#)

Site Images



United Utilities
Water for the North West



Appendix F

Flood Map for Planning

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
341177/398909

Created
3 Mar 2025 16:24

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following:**

- bigger than 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2024 OS AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
341177/398909

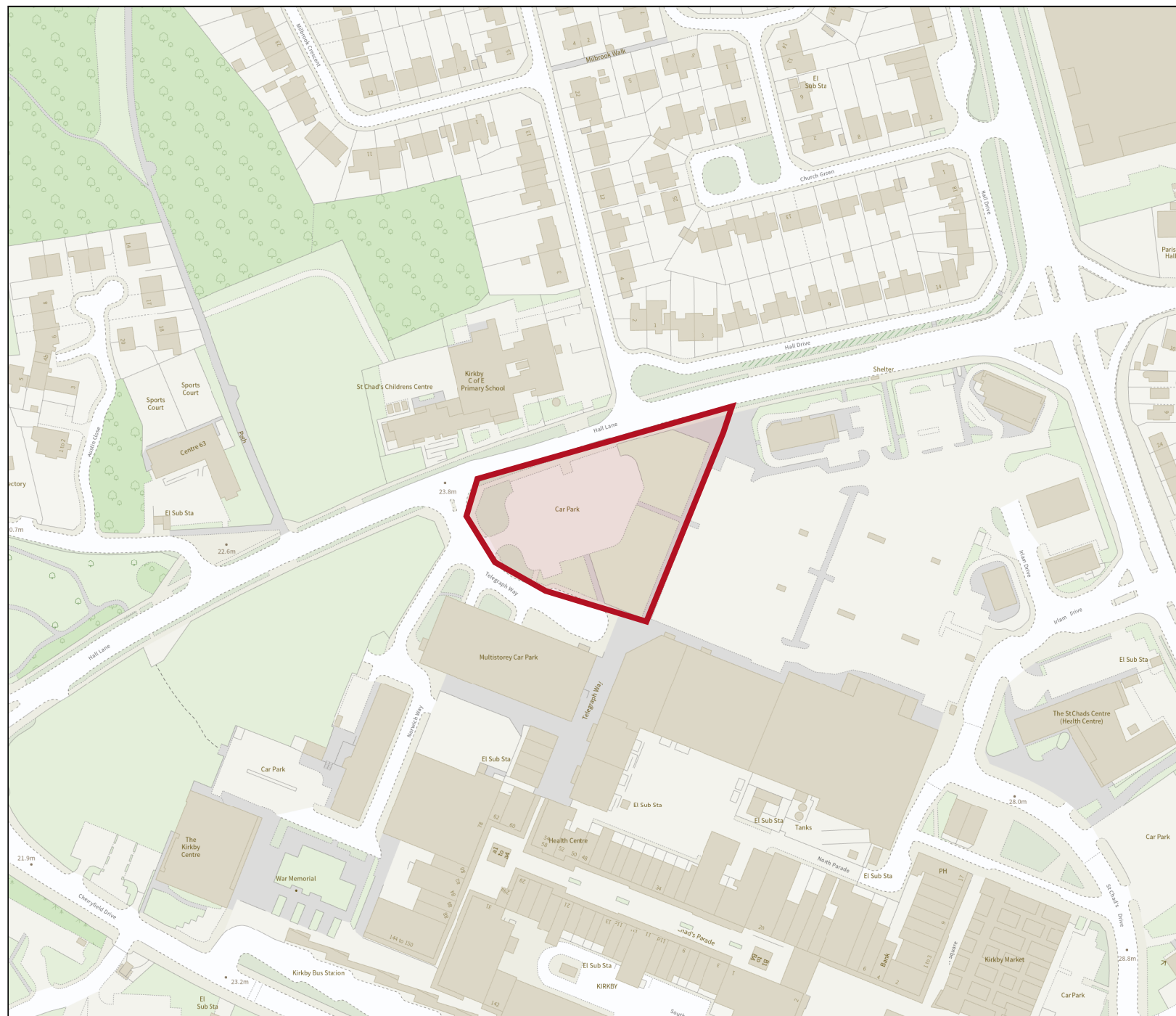
Scale
1:2500

Created
3 Mar 2025 16:24

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area

0 20 40 60m

Page 2 of 2



Appendix G

Brownfield Runoff Calculation

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	2 year (l/s)	1.4
Rainfall Events	Singular	Drain Down Time (mins)	240	30 year (l/s)	3.0
Summer CV	0.750	Additional Storage (m ³ /ha)	20.0	100 year (l/s)	3.9
Winter CV	0.840	Starting Level (m)		Check Discharge Volume	x
Analysis Speed	Normal	Check Discharge Rate(s)	✓		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	45	0	0

Pre-development Discharge Rate

Site Makeup	Brownfield	Growth Factor 2 year	0.90
Brownfield Method	Greenfield	Growth Factor 30 year	1.95
Greenfield Method	FEH	Growth Factor 100 year	2.48
Positively Drained Area (ha)	0.470	Betterment (%)	0
SAAR (mm)	854	QMed	1.4
Host	1	QBar	1.6
BFIHost	0.633	Q 2 year (l/s)	1.4
Region	1	Q 30 year (l/s)	3.0
QBar/QMed conversion factor	1.111	Q 100 year (l/s)	3.9

Appendix H

Hydraulic Modeling Result V3

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.750
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	3.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Easting (m)	Northing (m)	Depth (m)
SW01	0.034	3.00	25.550	600		341208.932	398944.882	1.300
SW02	0.034	3.00	25.150	600		341191.004	398941.656	1.030
SW03	0.068	3.00	24.400	600		341141.334	398924.290	0.720
SW04	0.157	3.00	25.450	1200		341168.713	398897.469	1.540
SW05	0.084	3.00	25.440	1200		341156.655	398884.992	1.620
SW06	0.083	3.00	25.040	1200		341139.840	398893.803	1.340
SW07	0.011	3.00	24.570	1200		341132.026	398901.223	0.960
Attenuation tank	0.000		24.400	20000	9800	341130.322	398908.555	1.350
SW08 HB	0.000	3.00	24.200	1200		341124.066	398906.321	1.200
EX SW	0.000		23.940	1200		341109.151	398899.423	2.000

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	SW01	SW02	18.216	0.600	24.250	24.120	0.130	140.1	225	3.28	50.0
1.001	SW02	SW03	52.618	0.600	24.120	23.680	0.440	119.6	225	4.01	50.0
1.002	SW03	Attenuation tank	19.206	0.600	23.680	23.575	0.105	182.9	225	4.34	50.0
2.000	SW04	SW05	17.351	0.600	23.910	23.820	0.090	192.8	300	3.26	50.0
2.001	SW05	SW06	18.984	0.600	23.820	23.700	0.120	158.2	300	3.51	50.0
2.002	SW06	SW07	10.776	0.600	23.700	23.610	0.090	119.7	300	3.64	50.0
2.003	SW07	Attenuation tank	7.527	0.600	23.610	23.500	0.110	68.4	300	3.70	50.0
3.000	Attenuation tank	SW08 HB	6.643	0.600	23.050	23.000	0.050	132.9	300	4.42	50.0
3.001	SW08 HB	EX SW	16.433	0.600	23.000	21.940	1.060	15.5	300	4.49	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.102	43.8	4.6	1.075	0.805	0.034	0.0	49	0.717
1.001	1.194	47.5	9.2	0.805	0.495	0.068	0.0	67	0.931
1.002	0.963	38.3	18.4	0.495	0.600	0.136	0.0	110	0.955
2.000	1.129	79.8	21.3	1.240	1.320	0.157	0.0	105	0.958
2.001	1.247	88.2	32.7	1.320	1.040	0.241	0.0	126	1.157
2.002	1.436	101.5	43.9	1.040	0.660	0.324	0.0	138	1.386
2.003	1.903	134.5	45.4	0.660	0.600	0.335	0.0	120	1.723
3.000	1.362	96.3	63.8	1.050	0.900	0.471	0.0	179	1.454
3.001	4.012	283.6	63.8	0.900	1.700	0.471	0.0	96	3.262

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	18.216	140.1	225	Circular	25.550	24.250	1.075	25.150	24.120	0.805
1.001	52.618	119.6	225	Circular	25.150	24.120	0.805	24.400	23.680	0.495
1.002	19.206	182.9	225	Circular	24.400	23.680	0.495	24.400	23.575	0.600
2.000	17.351	192.8	300	Circular	25.450	23.910	1.240	25.440	23.820	1.320
2.001	18.984	158.2	300	Circular	25.440	23.820	1.320	25.040	23.700	1.040
2.002	10.776	119.7	300	Circular	25.040	23.700	1.040	24.570	23.610	0.660
2.003	7.527	68.4	300	Circular	24.570	23.610	0.660	24.400	23.500	0.600
3.000	6.643	132.9	300	Circular	24.400	23.050	1.050	24.200	23.000	0.900
3.001	16.433	15.5	300	Circular	24.200	23.000	0.900	23.940	21.940	1.700

Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Width (mm)	Node Type	MH Type
1.000	SW01	600		Manhole	Adoptable	SW02	600		Manhole	Adoptable
1.001	SW02	600		Manhole	Adoptable	SW03	600		Manhole	Adoptable
1.002	SW03	600		Manhole	Adoptable	Attenuation tank	20000	9800	Manhole	Adoptable
2.000	SW04	1200		Manhole	Adoptable	SW05	1200		Manhole	Adoptable
2.001	SW05	1200		Manhole	Adoptable	SW06	1200		Manhole	Adoptable
2.002	SW06	1200		Manhole	Adoptable	SW07	1200		Manhole	Adoptable
2.003	SW07	1200		Manhole	Adoptable	Attenuation tank	20000	9800	Manhole	Adoptable
3.000	Attenuation tank	20000	9800	Manhole	Adoptable	SW08 HB	1200		Manhole	Adoptable
3.001	SW08 HB	1200		Manhole	Adoptable	EX SW	1200		Manhole	Adoptable

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	2 year (l/s)	1.4
Rainfall Events	Singular	Drain Down Time (mins)	240	30 year (l/s)	3.0
Summer CV	0.750	Additional Storage (m ³ /ha)	20.0	100 year (l/s)	3.9
Winter CV	0.840	Starting Level (m)		Check Discharge Volume	x
Analysis Speed	Normal	Check Discharge Rate(s)	✓		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	------

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	45	0	0

Pre-development Discharge Rate

Site Makeup	Brownfield	Growth Factor 2 year	0.90
Brownfield Method	Greenfield	Growth Factor 30 year	1.95
Greenfield Method	FEH	Growth Factor 100 year	2.48
Positively Drained Area (ha)	0.470	Betterment (%)	0
SAAR (mm)	854	QMed	1.4
Host	1	QBar	1.6
BFIHost	0.633	Q 2 year (l/s)	1.4
Region	1	Q 30 year (l/s)	3.0
QBar/QMed conversion factor	1.111	Q 100 year (l/s)	3.9

Node SW08 HB Online Hydro-Brake® Control

Flap Valve	x	Objective	(CL) Minimise blockage risk
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	23.000	Product Number	CTL-SCL-0060-1600-0800-1600
Design Depth (m)	0.800	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.6	Min Node Diameter (mm)	1200

Node Attenuation tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	23.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	196.0	0.0	0.750	196.0	0.0	0.751	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	73.507	20.800	30 year 120 minute summer	62.284	16.460
1 year 15 minute winter	51.584	20.800	30 year 120 minute winter	41.380	16.460
1 year 30 minute summer	47.630	13.478	30 year 180 minute summer	47.169	12.138
1 year 30 minute winter	33.424	13.478	30 year 180 minute winter	30.661	12.138
1 year 60 minute summer	31.554	8.339	30 year 240 minute summer	37.022	9.784
1 year 60 minute winter	20.964	8.339	30 year 240 minute winter	24.596	9.784
1 year 120 minute summer	22.515	5.950	30 year 360 minute summer	28.071	7.224
1 year 120 minute winter	14.958	5.950	30 year 360 minute winter	18.247	7.224
1 year 180 minute summer	18.562	4.777	30 year 480 minute summer	22.006	5.815
1 year 180 minute winter	12.066	4.777	30 year 480 minute winter	14.620	5.815
1 year 240 minute summer	15.325	4.050	30 year 600 minute summer	17.967	4.915
1 year 240 minute winter	10.182	4.050	30 year 600 minute winter	12.276	4.915
1 year 360 minute summer	12.299	3.165	30 year 720 minute summer	15.983	4.284
1 year 360 minute winter	7.995	3.165	30 year 720 minute winter	10.742	4.284
1 year 480 minute summer	9.957	2.631	30 year 960 minute summer	13.118	3.454
1 year 480 minute winter	6.615	2.631	30 year 960 minute winter	8.689	3.454
1 year 600 minute summer	8.311	2.273	30 year 1440 minute summer	9.507	2.548
1 year 600 minute winter	5.679	2.273	30 year 1440 minute winter	6.389	2.548
1 year 720 minute summer	7.517	2.015	100 year +45% CC 15 minute summer	436.110	123.404
1 year 720 minute winter	5.052	2.015	100 year +45% CC 15 minute winter	306.042	123.404
1 year 960 minute summer	6.325	1.666	100 year +45% CC 30 minute summer	287.348	81.310
1 year 960 minute winter	4.190	1.666	100 year +45% CC 30 minute winter	201.648	81.310
1 year 1440 minute summer	4.733	1.268	100 year +45% CC 60 minute summer	193.214	51.061
1 year 1440 minute winter	3.181	1.268	100 year +45% CC 60 minute winter	128.367	51.061
30 year 15 minute summer	239.857	67.871	100 year +45% CC 120 minute summer	112.970	29.855
30 year 15 minute winter	168.321	67.871	100 year +45% CC 120 minute winter	75.054	29.855
30 year 30 minute summer	156.412	44.259	100 year +45% CC 180 minute summer	85.018	21.878
30 year 30 minute winter	109.763	44.259	100 year +45% CC 180 minute winter	55.264	21.878
30 year 60 minute summer	104.987	27.745	100 year +45% CC 240 minute summer	66.519	17.579
30 year 60 minute winter	69.751	27.745	100 year +45% CC 240 minute winter	44.194	17.579

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +45% CC 360 minute summer	50.343	12.955	100 year +45% CC 720 minute summer	28.820	7.724
100 year +45% CC 360 minute winter	32.724	12.955	100 year +45% CC 720 minute winter	19.369	7.724
100 year +45% CC 480 minute summer	39.528	10.446	100 year +45% CC 960 minute summer	23.700	6.241
100 year +45% CC 480 minute winter	26.261	10.446	100 year +45% CC 960 minute winter	15.699	6.241
100 year +45% CC 600 minute summer	32.338	8.845	100 year +45% CC 1440 minute summer	17.236	4.620
100 year +45% CC 600 minute winter	22.095	8.845	100 year +45% CC 1440 minute winter	11.584	4.620

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SW01	9	24.295	0.045	4.0	0.0362	0.0000	OK
15 minute summer	SW02	10	24.179	0.059	7.8	0.0558	0.0000	OK
15 minute summer	SW03	10	23.778	0.098	14.8	0.2127	0.0000	OK
15 minute summer	SW04	9	24.011	0.101	18.2	0.3199	0.0000	OK
15 minute summer	SW05	9	23.941	0.121	27.4	0.2613	0.0000	OK
15 minute summer	SW06	10	23.834	0.134	35.7	0.3174	0.0000	OK
15 minute summer	SW07	10	23.732	0.122	36.7	0.1661	0.0000	OK
600 minute winter	Attenuation tank	450	23.186	0.136	7.5	53.5011	0.0000	OK
600 minute winter	SW08 HB	450	23.193	0.193	4.7	0.2186	0.0000	OK
480 minute winter	EX SW	384	21.956	0.016	1.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW01	1.000	SW02	3.9	0.567	0.088	0.1244	
15 minute summer	SW02	1.001	SW03	7.3	0.611	0.154	0.6546	
15 minute summer	SW03	1.002	Attenuation tank	13.9	0.870	0.364	0.3076	
15 minute summer	SW04	2.000	SW05	17.6	0.745	0.220	0.4099	
15 minute summer	SW05	2.001	SW06	26.3	0.934	0.298	0.5353	
15 minute summer	SW06	2.002	SW07	35.6	1.242	0.351	0.3089	
15 minute summer	SW07	2.003	Attenuation tank	37.2	1.506	0.276	0.1859	
600 minute winter	Attenuation tank	3.000	SW08 HB	4.7	0.289	0.049	0.2626	
600 minute winter	SW08 HB	3.001	EX SW	1.6	1.081	0.006	0.0242	61.8

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SW01	9	24.335	0.085	13.0	0.0684	0.0000	OK
15 minute summer	SW02	9	24.232	0.112	25.7	0.1060	0.0000	OK
15 minute summer	SW03	10	23.944	0.264	49.9	0.5734	0.0000	SURCHARGED
15 minute summer	SW04	10	24.241	0.331	59.8	1.0480	0.0000	SURCHARGED
15 minute summer	SW05	10	24.185	0.365	81.2	0.7918	0.0000	SURCHARGED
15 minute summer	SW06	10	24.045	0.345	108.7	0.8165	0.0000	SURCHARGED
15 minute summer	SW07	10	23.871	0.261	113.0	0.3546	0.0000	OK
720 minute winter	Attenuation tank	705	23.432	0.382	11.9	149.7028	0.0000	SURCHARGED
720 minute winter	SW08 HB	705	23.432	0.432	4.0	0.4884	0.0000	SURCHARGED
30 minute winter	EX SW	204	21.956	0.016	1.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW01	1.000	SW02	12.7	0.761	0.290	0.3050	
15 minute summer	SW02	1.001	SW03	24.0	0.767	0.506	1.5641	
15 minute summer	SW03	1.002	Attenuation tank	46.4	1.188	1.210	0.7086	
15 minute summer	SW04	2.000	SW05	53.3	0.880	0.668	1.2218	
15 minute summer	SW05	2.001	SW06	81.5	1.158	0.925	1.3368	
15 minute summer	SW06	2.002	SW07	109.4	1.559	1.078	0.7297	
15 minute summer	SW07	2.003	Attenuation tank	113.3	1.919	0.843	0.4409	
720 minute winter	Attenuation tank	3.000	SW08 HB	4.0	0.260	0.042	0.4678	
720 minute winter	SW08 HB	3.001	EX SW	1.6	1.083	0.006	0.0243	74.1

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SW01	10	24.675	0.425	23.5	0.3429	0.0000	SURCHARGED
15 minute summer	SW02	10	24.636	0.516	42.1	0.4866	0.0000	SURCHARGED
15 minute summer	SW03	10	24.309	0.629	78.6	1.3664	0.0000	FLOOD RISK
15 minute summer	SW04	10	25.280	1.370	108.2	4.3436	0.0000	FLOOD RISK
15 minute summer	SW05	10	25.117	1.297	140.4	2.8127	0.0000	SURCHARGED
15 minute summer	SW06	10	24.709	1.009	187.8	2.3922	0.0000	SURCHARGED
15 minute summer	SW07	10	24.214	0.604	192.8	0.8210	0.0000	SURCHARGED
1440 minute winter	Attenuation tank	1380	23.903	0.853	12.6	314.2556	0.0000	SURCHARGED
1440 minute winter	SW08 HB	1380	23.903	0.903	4.3	1.0211	0.0000	FLOOD RISK
1440 minute winter	EX SW	1380	21.957	0.017	1.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW01	1.000	SW02	19.6	0.842	0.448	0.7245	
15 minute summer	SW02	1.001	SW03	38.0	0.979	0.801	2.0927	
15 minute summer	SW03	1.002	Attenuation tank	76.8	1.931	2.005	0.7556	
15 minute summer	SW04	2.000	SW05	90.4	1.284	1.133	1.2218	
15 minute summer	SW05	2.001	SW06	138.3	1.965	1.569	1.3368	
15 minute summer	SW06	2.002	SW07	186.2	2.645	1.835	0.7588	
15 minute summer	SW07	2.003	Attenuation tank	192.3	2.732	1.430	0.5247	
1440 minute winter	Attenuation tank	3.000	SW08 HB	4.3	0.292	0.044	0.4678	
1440 minute winter	SW08 HB	3.001	EX SW	1.7	1.098	0.006	0.0251	141.3