

Appendix A

soiltechnics

Definition of geo-environmental terms used in this report

Conceptual model

Textual and/or schematic hypothesis of the nature and sources of contamination, potential migration pathways (including description of the ground and groundwater) and potential receptors, developed on the basis of the information obtained from the investigatory process.

Contamination

Presence of a substance which is in, on or under land, and which has the potential to cause harm or to cause pollution of controlled water.

Controlled water

Inland freshwater (any lake, pond or watercourse above the freshwater limit), water contained in underground strata and any coastal water between the limit of highest tide or the freshwater line to the three mile limit of territorial waters.

Harm

Adverse effect on the health of living organisms, or other interference with ecological systems of which they form part, and, in the case of humans, including property.

Pathway

Mechanism or route by which a contaminant comes into contact with, or otherwise affects, a receptor.

Receptor

Persons, living organisms, ecological systems, controlled waters, atmosphere, structures and utilities that could be adversely affected by the contaminant(s).

Risk

Probability of the occurrence of, and magnitude of the consequences of, an unwanted adverse effect on a receptor.

Risk assessment

Process of establishing, to the extent possible, the existence, nature and significance of risk.

Definition of environmental risk/hazard terms used in this report

Based on CIRIA report C552 '*Contaminated land risk assessment – A guide to good practice*'.

Potential hazard severity definition

Category	Definition
Severe	Acute risks to human health, catastrophic damage to buildings/property, major pollution of controlled waters
Medium	Chronic risk to human health, pollution of sensitive controlled waters, significant effects on sensitive ecosystems or species, significant damage to buildings or structures
Mild	Pollution of non-sensitive waters, minor damage to buildings or structures
Minor	Requirement for protective equipment during site works to mitigate health effects, damage to non-sensitive ecosystems or species

Probability of risk definition

Category	Definition
High likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term
Low likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable

Level of risk for potential hazard definition

Probability of risk	Potential severity			
	Severe	Medium	Mild	Minor
High likelihood	Very high	High	Moderate	Low/Moderate
Likely	High	Moderate	Low/Moderate	Low
Low likelihood	Moderate	Low/Moderate	Low	Very low
Unlikely	Low/Moderate	Low	Very low	Very low

See below for definitions of 'very high' to 'very low'

Definition of environmental risk/hazard terms used in this report

Based on CIRIA report C552 '*Contaminated land risk assessment – A guide to good practice*'.

Risk classifications and likely action required:

Very high risk

High probability that severe harm could arise to a designated receptor from an identified hazard OR there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised is likely to result in substantial liability. Urgent investigation and remediation are likely to be required.

High risk

Harm is likely to arise to a designated receptor from an identified hazard. This risk, if realised, is likely to result in substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the long term.

Moderate risk

It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is likely that the harm would be relatively mild. Investigation is normally required to clarify risks and to determine potential liability. Some remedial works may be required in the long term.

Low risk

It is possible that harm could arise to a designated receptor from an identified hazard but it is likely that this harm, if realised, would at worst normally be mild.

Very low risk

It is a low possibility that harm could arise to a designated receptor. On the event of such harm being realised it is not likely to be severe.

List of documents used in assessment of chemical contamination

No.	Title	Publication reference / publisher
1	Human health toxicological assessment of contaminants in soil	EA Science Report – SC050021/SR2
2	Updated technical background to the CLEA model	EA Science Report – SC050021/SR3
3	CLEA Software (Version 1.03 beta) Handbook	EA Science Report - SC050021/SR4
4	Guidance on comparing Soil Contamination Data with a Critical Concentration	CIEH
5	The LQM/CIEH S4ULs for Human Health Risk Assessment (2015)	LQM/CIEH
6	Assessment of Risks to Human Health from Land Contamination: An overview of the development of soil guideline values and related research	R&D Publication, Contaminated Land Report CLR 7
7	Contaminants of Soil: Collation of Toxicological Data and Intake Values for Humans	R&D Publication, Contaminated Land Report CLR 9
8	The Contaminated Land Exposure Assessment Model (CLEA): Technical Basis and Algorithms	R&D Publication, Contaminated Land Report CLR 10
9	Model Procedures for the Management of Land Contamination	R&D Publication, Contaminated Land Report CLR 11
10	Contaminants in Soil: Collection of Toxicological Data and Intake Values for Human Values	R&D Publications, Tox. 6
11	Soil Guideline Values for Contamination (2002)	R&D Publications, SGV 10
12	Soil Guideline Values (2009)	EA Science Reports – SC050021
13	Atkins ATRISK ^{SOIL} (2011)	http://www.atrisksoil.co.uk
14	Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination (September 2014)	CL:AIRE

CIEH	Chartered institute of Environmental Health
LQM	Land Quality Management
EA	Environment Agency
CL:AIRE	Contaminated Land: Applications in Real Environments

Testing suite summary

Table summarising testing suites		
Suite	Parameters	Medium
Suite 1	Arsenic, beryllium, boron, cadmium, chromium (total and VI), copper, lead, mercury, nickel, selenium, vanadium zinc, cyanide (free, total and complex), organic matter content, PAH (16 speciated), pH, phenol (total), TOC	Soil
Suite 2	Arsenic, boron (water soluble), beryllium, cadmium, chromium (total), copper, lead, mercury, nickel, selenium, vanadium, zinc, cyanide (free, total and complex, PAH (16 speciated), pH, phenol (total), sulfate (water soluble), sulfide, nitrate	Leachate
Suite 3	Arsenic, boron (water soluble), beryllium, cadmium, chromium (total), copper, lead, mercury, nickel, selenium, vanadium, zinc, cyanide (free, total and complex, PAH (16 speciated), pH, phenol (total), sulfate (water soluble), sulfide, nitrate	Water
Suite 4	TPH Texas Banding Aliphatic/Aromatic Split, BTEX, MTBE, PAH (16 speciated), organic matter	Soil
Suite 5	TPH Texas Banding Aliphatic/Aromatic Split, BTEX, MTBE, PAH (16 speciated)	Leachate
Suite 6	TPH Texas Banding Aliphatic/Aromatic Split, BTEX, MTBE, PAH (16 speciated)	Water
Suite 7	TPH Texas Banding Aliphatic/Aromatic Split, BTEX, TOC, organic matter	Soil
Suite 8	Sulphur (total), sulphate (water and acid soluble), pH	Soil
Suite 9	Sulphate, ammoniacal nitrogen, dissolved magnesium, pH	Water
Suite 10	VOC, SVOC, TOC, organic matter	Soil
Suite 11	VOC, SVOC	Leachate
Suite 12	VOC, SVOC	Water
Suite 13	Organotins dibutyltin/ tributyl-tin/tetrabutyltin/triphenyl-tin, tetraethyl-lead/tetramethyl-lead	Soil
Suite 14	Organotin	Leachate
Suite 15	Organotin	Water
Suite 16	TPH Texas Banding Aliphatic/Aromatic Split, BTEX, VOC, SVOC	Soil, water, leachate
Suite 17	TPH Texas Banding Aliphatic/Aromatic Split, BTEX, SVOC, VOC, arsenic, boron (water soluble), beryllium, cadmium, chromium (total), copper, lead, mercury, nickel, selenium, vanadium, zinc, cyanide (free, total and complex, pH, phenol (total), sulfate (water soluble), sulfide, nitrate	Soil, water, leachate
Concrete BRE suite	pH, sulphate (water and acid soluble), magnesium (water soluble), ammonia (water soluble), chloride, nitrate	Soil

Appendix B

soiltechnics



Final Report

Report No.: 23-23395-1

Initial Date of Issue: 19-Jul-2023

Re-Issue Details:

Client Soiltechnics Limited

Client Address: 1st Floor Unit 9 Westpoint Enterprise
Park
Clarence Avenue
Trafford Park
Manchester
M17 1QS

Contact(s): Admin

Project STV5959 Barrington Road, Worthing

Quotation No.: **Date Received:** 11-Jul-2023

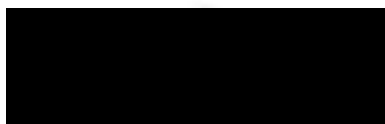
Order No.: POR015875 **Date Instructed:** 11-Jul-2023

No. of Samples: 13

Turnaround (Wkdays): 7 **Results Due:** 19-Jul-2023

Date Approved: 18-Jul-2023

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: STV5959 Barrington Road, Worthing

Client: Soiltechnics Limited	Chemtest Job No.:				23-23395	23-23395	23-23395	23-23395	23-23395	23-23395	23-23395	23-23395	23-23395
Quotation No.:	Chemtest Sample ID.:				1672171	1672172	1672173	1672174	1672175	1672176	1672177	1672178	1672179
Order No.: POR015875	Client Sample Ref.:				1	2	2	3	4	1	1	2	3
	Client Sample ID.:				SL010.201	SL011.502	SL020.102	SL020.203	SL020.304	SL020.601	SL030.101	SL030.202	SL030.303
	Sample Location:				SL01	SL01	SL02	SL02	SL02	SL02	SL03	SL03	SL03
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	1.50	0.10	0.20	0.30	0.60	0.10	0.20	0.30
	Date Sampled:				04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	NEW-ASB	NEW-ASB
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	21	19	15	14	13	16	5.4	12	11
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	50% Stones	45% Stones	Stones	Stones	50% Stones	Stones	Stones
Soil Texture	N	2040		N/A	Clay	Clay	Sand	Sand	Clay	Sand	Gravel	Sand	Sand
pH	M	2010		4.0	7.6	7.8	7.8	7.5	7.1	7.6	7.7	7.4	8.0
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	3.1	3.5	1.9	1.2	0.49	1.8	6.6	1.5	1.0
Cyanide (Complex)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Arsenic	M	2455	mg/kg	0.5	11	9.2	9.2	8.4	8.4	6.5	14	8.4	8.6
Beryllium	U	2455	mg/kg	0.5	0.8	0.7	0.6	0.7	0.7	< 0.5	0.9	0.6	0.7
Cadmium	M	2455	mg/kg	0.10	< 0.10	< 0.10	0.21	< 0.10	0.20	< 0.10	< 0.10	< 0.10	< 0.10
Chromium	M	2455	mg/kg	0.5	26	24	26	23	18	16	31	20	24
Copper	M	2455	mg/kg	0.50	52	21	20	18	15	25	31	16	23
Mercury	M	2455	mg/kg	0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Nickel	M	2455	mg/kg	0.50	16	18	15	15	11	11	13	13	17
Lead	M	2455	mg/kg	0.50	23	24	27	24	14	26	20	24	33
Selenium	M	2455	mg/kg	0.25	0.53	0.62	0.56	0.56	0.37	0.38	0.43	0.50	0.68
Vanadium	U	2455	mg/kg	0.5	34	32	29	30	22	23	38	28	33
Zinc	M	2455	mg/kg	0.50	65	57	59	50	36	46	46	49	64
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
LOI	M	2610	%	0.10	5.5	4.5	5.1	4.5	4.6	5.9	6.2	5.0	4.3
Organic Matter	M	2625	%	0.40	1.9	2.1	3.1	1.8	4.2	1.4	0.95	2.4	1.5
TPH >C5-C6	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C6-C7	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C7-C8	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C16-C21	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C21-C35	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	2.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total TPH >C5-C35	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Naphthalene	M	2800	mg/kg	0.10	0.62	0.64	1.2	0.55	1.1	0.65	0.74	0.83	0.90
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: STV5959 Barrington Road, Worthing

Client: Soiltechnics Limited	Chemtest Job No.:				23-23395	23-23395	23-23395	23-23395	23-23395	23-23395	23-23395	23-23395	23-23395
Quotation No.:	Chemtest Sample ID.:				1672171	1672172	1672173	1672174	1672175	1672176	1672177	1672178	1672179
Order No.: POR015875	Client Sample Ref.:				1	2	2	3	4	1	1	2	3
	Client Sample ID.:				SL010.201	SL011.502	SL020.102	SL020.203	SL020.304	SL020.601	SL030.101	SL030.202	SL030.303
	Sample Location:				SL01	SL01	SL02	SL02	SL02	SL02	SL03	SL03	SL03
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	1.50	0.10	0.20	0.30	0.60	0.10	0.20	0.30
	Date Sampled:				04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	NEW-ASB	NEW-ASB
Determinand	Accred.	SOP	Units	LOD									
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	0.14	0.18	0.14	< 0.10	< 0.10	0.33	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	< 0.10	0.14	0.47	< 0.10	< 0.10	0.42	< 0.10	< 0.10	< 0.10
Pyrene	M	2800	mg/kg	0.10	< 0.10	0.12	0.52	< 0.10	< 0.10	0.26	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	2.3	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: STV5959 Barrington Road, Worthing

Client: Soiltechnics Limited	Chemtest Job No.:				23-23395	23-23395	23-23395	23-23395
Quotation No.:	Chemtest Sample ID.:				1672180	1672181	1672182	1672183
Order No.: POR015875	Client Sample Ref.:				4	1	1	2
	Client Sample ID.:				SL030.604	SL040.601	SL050.201	SL050.602
	Sample Location:				SL03	SL04	SL05	SL05
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.60	0.60	0.20	0.60
	Date Sampled:				04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023
	Asbestos Lab:				NEW-ASB	DURHAM	DURHAM	NEW-ASB
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	16	12	7.5	7.4
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand
pH	M	2010		4.0	7.6	6.6	9.7	9.9
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.50	0.48	1.4	1.3
Cyanide (Complex)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Arsenic	M	2455	mg/kg	0.5	9.9	10	10	6.8
Beryllium	U	2455	mg/kg	0.5	0.7	< 0.5	0.6	0.5
Cadmium	M	2455	mg/kg	0.10	0.12	< 0.10	0.31	0.21
Chromium	M	2455	mg/kg	0.5	23	17	19	14
Copper	M	2455	mg/kg	0.50	18	19	22	16
Mercury	M	2455	mg/kg	0.05	0.06	0.06	0.09	0.08
Nickel	M	2455	mg/kg	0.50	15	10	17	11
Lead	M	2455	mg/kg	0.50	41	30	77	74
Selenium	M	2455	mg/kg	0.25	0.59	0.56	0.54	0.36
Vanadium	U	2455	mg/kg	0.5	35	23	31	25
Zinc	M	2455	mg/kg	0.50	61	58	110	84
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
LOI	M	2610	%	0.10	4.5	3.0	4.1	4.0
Organic Matter	M	2625	%	0.40	2.4	1.3	1.6	1.4
TPH >C5-C6	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C6-C7	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C7-C8	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	N	2670	mg/kg	1.0	< 1.0	< 1.0	12	< 1.0
TPH >C12-C16	N	2670	mg/kg	1.0	< 1.0	< 1.0	14	3.4
TPH >C16-C21	N	2670	mg/kg	1.0	< 1.0	< 1.0	18	23
TPH >C21-C35	N	2670	mg/kg	1.0	< 1.0	< 1.0	57	170
Total TPH >C5-C35	N	2670	mg/kg	10	< 10	< 10	100	190
Naphthalene	M	2800	mg/kg	0.10	1.2	0.64	0.70	0.57
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	0.11	0.14

Results - Soil

Project: STV5959 Barrington Road, Worthing

Client: Soiltechnics Limited	Chemtest Job No.:				23-23395	23-23395	23-23395	23-23395
Quotation No.:	Chemtest Sample ID.:				1672180	1672181	1672182	1672183
Order No.: POR015875	Client Sample Ref.:				4	1	1	2
	Client Sample ID.:				SL030.604	SL040.601	SL050.201	SL050.602
	Sample Location:				SL03	SL04	SL05	SL05
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.60	0.60	0.20	0.60
	Date Sampled:				04-Jul-2023	04-Jul-2023	04-Jul-2023	04-Jul-2023
	Asbestos Lab:				NEW-ASB	DURHAM	DURHAM	NEW-ASB
Determinand	Accred.	SOP	Units	LOD				
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.35	0.23
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.22	0.19
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	2.5	2.1
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.61	0.58
Fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	4.2	4.3
Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	3.4	3.6
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	1.7	2.0
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	1.9	2.3
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	2.5	2.5
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.95	1.0
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	1.8	2.1
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	1.4	1.4
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	0.28	0.31
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	1.4	1.5
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	24	25
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Appendix C

soiltechnics

QRA Screening

Assessments	Status	Date	Created by	Reviewed By
Acute human health risk - Soils	Not undertaken			
Chronic human health risk - Soils	Complete	26.08.23	RF	MOH
Chronic human health risk - Groundwater vapour	Not undertaken			
Controlled waters risk - Surface water	Not undertaken			
Controlled waters risk - Drinking water	Not undertaken			
Controlled waters - Free phase indicator	Not undertaken			
Phytotoxicity	Not undertaken			
Ecotoxicity	Not undertaken			

Key

Assessment	Abbr.	QRA Source (in order of preference)	Last Update
All	NGA	No guideline value available	-
Chronic human health risk - Soils	C4SL	Category 4 Screening Levels (DEFRA)	May 2021
	S4UL	Suitable 4 Use Levels (LQM)	August 2015
	ATK	Atrisk Soil Screening Values (Atkins)	June 2017
	CL:AIRE	Generic Assessment Criteria (CL:AIRE)	Jan 2010

Chronic human health risk (soils)

Scenario																				
End user				Proposed site user																
Receptor				Residential with homegrown produce																
SOM				1.00%																
GAC Preference				C4SLs over S4ULs																
Unspecified TPH GAC				Worst-case aliphatic/aromatic																
Contaminant	Guideline source	Guideline value (mg/kg)	Max value (mg/kg)	Location		SL01	SL01	SL02	SL02	SL02	SL02	SL03	SL03	SL03	SL03	SL04	SL05	SL05		
				Depth (m)		0.20	1.50	0.10	0.20	0.30	0.60	0.10	0.20	0.30	0.60	0.60	0.20	0.60		
				Date		04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	04/07/23	
Inorganics - Metals																				
Arsenic	C4SL	37	14			11	9.2	9.2	8.4	8.4	6.5	14	8.4	8.6	9.9	10	10	6.8		
Beryllium	S4UL	1.7	0.9			0.8	0.7	0.6	0.7	0.7	< 0.5	0.9	0.6	0.7	0.7	< 0.5	0.6	0.5		
Boron	S4UL	290	6.6			3.1	3.5	1.9	1.2	0.49	1.8	6.6	1.5	1	0.5	0.48	1.4	1.3		
Cadmium	C4SL	22	0.31			< 0.10	< 0.10	0.21	< 0.10	0.2	< 0.10	< 0.10	< 0.10	< 0.10	0.12	< 0.10	0.31	0.21		
Chromium (III)	S4UL	910	31			26	24	26	23	18	16	31	20	24	23	17	19	14		
Chromium (VI)	C4SL	21	<LoD			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
Copper	S4UL	2400	52			52	21	20	18	15	25	31	16	23	18	19	22	16		
Cyanide - Free	ATK	34	<LoD			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		
Lead	C4SL	200	77			23	24	27	24	14	26	20	24	33	41	30	77	74		
Mercury	S4UL	40	0.09			< 0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.06	0.06	0.09	0.08			
Nickel	S4UL	130	18			16	18	15	15	11	11	13	13	17	15	10	17	11		
Selenium	S4UL	250	0.68			0.53	0.62	0.56	0.56	0.37	0.38	0.43	0.5	0.68	0.59	0.56	0.54	0.36		
Vanadium	S4UL	410	38			34	32	29	30	22	23	38	28	33	35	23	31	25		
Zinc	S4UL	3700	110			65	57	59	50	36	46	46	49	64	61	58	110	84		
Inorganics - Asbestos																				
Asbestos Type	N/A																			
Asbestos Screen	N/A																			
Inorganics - Soil Parameters																				
Organic matter	N/A																			
Organics - PAH & Phenol	N/A																			
Acenaphthene	S4UL	210	0.35			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.35	0.23		
Acenaphthylene	S4UL	170	0.14			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.11	0.14		
Anthracene	S4UL	2400	0.61			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.61	0.58		
Benzo(a)anthracene	S4UL	7.2	2			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.7	2		
Benzo(a)pyrene	C4SL	5	2.1			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.8	2.1		
Benzo(b)fluoranthene	S4UL	2.6	2.5			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	2.5	2.5		
Benzo(ghi)perylene	S4UL	320	1.5			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.4	1.5		
Benzo(k)fluoranthene	S4UL	77	1			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.95	1		
Chrysene	S4UL	15	2.3			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.9	2.3		
Dibenz(a,h)anthracene	S4UL	0.24	0.31			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.28	0.31		
Fluoranthene	S4UL	280	4.3			< 0.10	0.14	0.47	< 0.10	< 0.10	0.42	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	4.2	4.3		
Fluorene	S4UL	170	0.22			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.22	0.19		
Indeno(1,2,3-cd)pyrene	S4UL	27	1.4			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.4	1.4		
Naphthalene	S4UL	2.3	1.2			0.62	0.64	1.2	0.55	1.1	0.65	0.74	0.83	0.9	1.2	0.64	0.7	0.57		
Phenanthrene	S4UL	95	2.5			0.14	0.18	0.14	< 0.10	< 0.10	0.33	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	2.5	2.1		
Phenol	S4UL	120	<LoD			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		
Pyrene	S4UL	620	3.6			< 0.10	0.12	0.52	< 0.10	< 0.10	0.26	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.4	3.6		
Organics - Banded TPH (unspecified)																				
EC >5-EC6 (unspecified)	S4UL	42	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
EC >6-EC7 (unspecified)	S4UL	70	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
EC >7-EC8 (unspecified)	S4UL	13	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
EC >08-EC10 (unspecified)	S4UL	27	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
EC >10-EC12 (unspecified)	S4UL	74	12			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	12	< 1.0		
EC >12-EC16 (unspecified)	S4UL	140	14			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	14	3.4		
EC >16-EC21 (unspecified)	S4UL	260	23			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	18	23		
EC >21-EC35 (unspecified)	S4UL	1100	170			< 1.0	< 1.0	< 1.0	2.7	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	57	170		

Chronic human health risk (soils)

Scenario	
End user	Proposed site user
Receptor	Residential with homegrown produce
SOM	1.00%
GAC Preference	C4SLs over S4ULs
Unspeciated TPH GAC	Worst-case aliphatic/aromatic

Contaminant	Guideline source	Guideline value	Max value	Location	SL01	SL01	SL02	SL02	SL02	SL02	SL03	SL03	SL03	SL03	SL04	SL05	SL05
				Depth (m)	0.20	1.50	0.10	0.20	0.30	0.60	0.10	0.20	0.30	0.60	0.60	0.20	0.60

Chronic human health risk (soils)

Scenario	
End user	Proposed site user
Receptor	Residential with homegrown produce
SOM	1.00%
GAC Preference	C4SLs over S4ULs
Unspeciated TPH GAC	Worst-case aliphatic/aromatic

Contaminant	Guideline source	Guideline value	Max value	Location	SL01	SL01	SL02	SL02	SL02	SL02	SL03	SL03	SL03	SL03	SL04	SL05	SL05
				Depth (m)	0.20	1.50	0.10	0.20	0.30	0.60	0.10	0.20	0.30	0.60	0.60	0.20	0.60

Appendix E Garden Verification Records

General Site Details

Site Name	Barrington Road, Worthing	Development Use	Residential with gardens
Date	16/10/2024	Groundwork Contractor	
Engineer	SH	Developer	Bellway

Verification Action Undertaken

Plot No.	24	Exploratory Hole ID	VTP24
General Comment	Excavated an inspection pit to verify the depth and composition of the clean cover system.		
Samples Taken	ES – 0.1m, 0.5m		
No-Dig / Demarcation Layers	N/A		
Physical Suitability	No undesirable or injurious objects were observed within any of the materials inspected, such as sharps, metals, plastics or over-sized materials, except for a few cobble-sized fragments of brick and concrete within the subsoil.		

Remediation Requirement

Minimum Thickness:	≥ 600 mm
Topsoil:	≥ 150 mm
Subsoil:	N/A
Geotextile Marker:	N/A
No-Dig Layer:	N/A

Observed Conditions (if applicable)

Minimum Thickness:	≥ 600 mm
Topsoil:	300mm
Subsoil:	>300mm
Geotextile Marker:	N/A
No-Dig Layer:	N/A

Photographs

Photograph (spatial):



Photograph (detail)



Verification Outcome

Conclusion	The aspects considered under this inspection record have Passed verification.
Exclusions	Where chemical analysis has been undertaken, please refer to the Verification Report for a discussion on the results and confirmation of compliance and chemical suitability.

General Site Details

Site Name	Barrington Road, Worthing	Development Use	Residential with gardens
Date	16/10/2024	Groundwork Contractor	
Engineer	SH	Developer	Bellway

Verification Action Undertaken

Plot No.	26	Exploratory Hole ID	VTP26
General Comment	Excavated an inspection pit to verify the depth and composition of the clean cover system.		
Samples Taken	ES – 0.1m, 0.5m		
No-Dig / Demarcation Layers	N/A		
Physical Suitability	No undesirable or injurious objects were observed within any of the materials inspected, such as sharps, metals, plastics or over-sized materials, except for a few cobble-sized fragments of brick and concrete within the subsoil.		

Remediation Requirement

Minimum Thickness:	≥ 600 mm
Topsoil:	≥ 150 mm
Subsoil:	N/A
Geotextile Marker:	N/A
No-Dig Layer:	N/A

Observed Conditions (if applicable)

Minimum Thickness:	≥ 600 mm
Topsoil:	300mm
Subsoil:	>300mm
Geotextile Marker:	N/A
No-Dig Layer:	N/A

Photographs

Photograph (spatial):	Photograph (detail)
	

Verification Outcome

Conclusion	The aspects considered under this inspection record have Passed verification.
Exclusions	Where chemical analysis has been undertaken, please refer to the Verification Report for a discussion on the results and confirmation of compliance and chemical suitability.

General Site Details

Site Name	Barrington Road, Worthing	Development Use	Residential with gardens
Date	16/10/2024	Groundwork Contractor	
Engineer	SH	Developer	Bellway

Verification Action Undertaken

Plot No.	28	Exploratory Hole ID	VTP28
General Comment	Excavated an inspection pit to verify the depth and composition of the clean cover system.		
Samples Taken	ES – 0.1m, 0.5m		
No-Dig / Demarcation Layers	N/A		
Physical Suitability	No undesirable or injurious objects were observed within any of the materials inspected, such as sharps, metals, plastics or over-sized materials, except for a few cobble-sized fragments of brick and concrete within the subsoil.		

Remediation Requirement		Observed Conditions (if applicable)	
Minimum Thickness:	≥ 600 mm	Minimum Thickness:	≥ 600 mm
Topsoil:	≥ 150 mm	Topsoil:	300mm
Subsoil:	N/A	Subsoil:	>300mm
Geotextile Marker:	N/A	Geotextile Marker:	N/A
No-Dig Layer:	N/A	No-Dig Layer:	N/A

Photographs

Photograph (spatial):	Photograph (detail)
	

Verification Outcome

General Site Details

Site Name	Barrington Road, Worthing	Development Use	Residential with gardens
Date	16/10/2024	Groundwork Contractor	
Engineer	SH	Developer	Bellway
Conclusion	The aspects considered under this inspection record have Passed verification.		
Exclusions	Where chemical analysis has been undertaken, please refer to the Verification Report for a discussion on the results and confirmation of compliance and chemical suitability.		

General Site Details

Site Name	Barrington Road, Worthing	Development Use	Residential with gardens
Date	16/10/2024	Groundwork Contractor	
Engineer	SH	Developer	Bellway

Verification Action Undertaken

Plot No.	24	Exploratory Hole ID	VTP24
General Comment	Excavated an inspection pit to verify the depth and composition of the clean cover system.		
Samples Taken	ES – 0.1m, 0.5m		
No-Dig / Demarcation Layers	N/A		
Physical Suitability	No undesirable or injurious objects were observed within any of the materials inspected, such as sharps, metals, plastics or over-sized materials, except for a few cobble-sized fragments of brick and concrete within the subsoil.		

Remediation Requirement

Minimum Thickness:	≥ 600 mm
Topsoil:	≥ 150 mm
Subsoil:	N/A
Geotextile Marker:	N/A
No-Dig Layer:	N/A

Observed Conditions (if applicable)

Minimum Thickness:	≥ 600 mm
Topsoil:	300mm
Subsoil:	>300mm
Geotextile Marker:	N/A
No-Dig Layer:	N/A

Photographs

Photograph (spatial):



Photograph (detail)



Verification Outcome

Conclusion	The aspects considered under this inspection record have Passed verification.
Exclusions	Where chemical analysis has been undertaken, please refer to the Verification Report for a discussion on the results and confirmation of compliance and chemical suitability.

Appendix F Laboratory Test Results



Final Report

Report No.: 24-33105-1

Initial Date of Issue: 21-Oct-2024

Re-Issue Details:

Client Soiltechnics Limited

Client Address: 1st Floor Unit 9 Westpoint Enterprise
Park
Clarence Avenue
Trafford Park
Manchester
M17 1QS

Contact(s): Admin

Project STV5959 Barrington Road

Quotation No.: **Date Received:** 14-Oct-2024

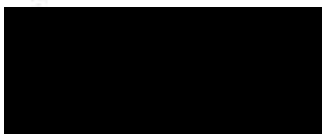
Order No.: POR020105 **Date Instructed:** 14-Oct-2024

No. of Samples: 11

Turnaround (Wkdays): 5 **Results Due:** 18-Oct-2024

Date Approved: 21-Oct-2024

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: STV5959 Barrington Road

Client: Soiltechnics Limited		Chemtest Job No.:					24-33105	24-33105	24-33105	24-33105	24-33105	24-33105	24-33105	24-33105
Quotation No.:		Chemtest Sample ID.:					1879857	1879858	1879859	1879860	1879861	1879862	1879863	1879864
Order No.: POR020105		Client Sample Ref.:					1	1	1	1	1	1	2	1
		Client Sample ID.:					SP101a-0.0-1	SP101b-0.0-1	SP101c-0.0-1	SP101d-0.0-1	SP101e-0.0-1	VTP24-0.1-1	VTP24-0.5-2	VTP26-0.1-1
		Sample Location:					SP101a	SP101b	SP101c	SP101d	SP101e	VTP24	VTP24	VTP26
		Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):					0.00	0.00	0.00	0.00	0.00	0.10	0.50	0.10
		Date Sampled:					09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024
		Time Sampled:					0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00
		Asbestos Lab:					NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	HWOL Code	Accred.	SOP	Units	LOD									
ACM Type		U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	21	20	18	18	15	17	14	15	15
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones, Roots and Glass	Stones and Roots	Stones, Roots and Glass	Stones and Roots	Roots	Stones, Roots and	Roots and Stones	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Clay	Clay	Loam	Clay	Loam	Clay	Clay	Clay	Clay
pH at 20C		M	2010		4.0	7.8	8.2	8.0	7.6	7.6	7.8	7.9	7.8	7.8
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.86	0.95	1.2	< 0.40	0.41	0.52	0.56	< 0.40	< 0.40
Cyanide (Complex)		M	2300	mg/kg	0.50	< 0.50	0.60	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Free)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	0.60	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Arsenic		M	2455	mg/kg	0.5	14	13	13	12	22	21	7.9	17	17
Beryllium		U	2455	mg/kg	0.5	0.8	1.1	0.8	0.6	1.2	1.2	0.6	0.9	0.9
Cadmium		M	2455	mg/kg	0.10	0.26	0.49	0.19	< 0.10	0.24	0.24	< 0.10	0.15	0.15
Chromium		M	2455	mg/kg	0.5	24	23	25	20	36	40	23	26	26
Copper		M	2455	mg/kg	0.50	27	160	30	27	45	43	19	34	34
Mercury		M	2455	mg/kg	0.05	0.13	0.08	0.07	0.08	0.13	0.13	< 0.05	0.11	0.11
Nickel		M	2455	mg/kg	0.50	19	20	16	12	23	22	13	18	18
Lead		M	2455	mg/kg	0.50	79	68	49	41	69	70	66	56	56
Selenium		M	2455	mg/kg	0.25	0.44	1.4	0.48	0.38	0.95	0.89	0.39	0.60	0.60
Vanadium		U	2455	mg/kg	0.5	34	36	73	25	46	43	27	35	35
Zinc		M	2455	mg/kg	0.50	100	110	90	71	130	130	45	96	96
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	3.3	3.6	4.1	1.7	1.3	1.9	0.57	1.2	1.2
TPH >C5-C6	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C6-C7	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C7-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	2.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	23	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH >C21-C35	EH_1D_Total	N	2670	mg/kg	1.0	37	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total TPH >C5-C35		N	2670	mg/kg	10	63	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: STV5959 Barrington Road

Client: Soiltechnics Limited		Chemtest Job No.:						24-33105	24-33105	24-33105	24-33105	24-33105	24-33105	24-33105
Quotation No.:		Chemtest Sample ID.:						1879857	1879858	1879859	1879860	1879861	1879862	1879864
Order No.: POR020105		Client Sample Ref.:						1	1	1	1	1	1	1
		Client Sample ID.:						SP101a-0.0-1	SP101b-0.0-1	SP101c-0.0-1	SP101d-0.0-1	SP101e-0.0-1	VTP24-0.1-1	VTP24-0.5-2
		Sample Location:						SP101a	SP101b	SP101c	SP101d	SP101e	VTP24	VTP24
		Sample Type:						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):						0.00	0.00	0.00	0.00	0.00	0.10	0.50
		Date Sampled:						09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024	09-Oct-2024
		Time Sampled:						0:00	0:00	0:00	0:00	0:00	0:00	0:00
		Asbestos Lab:						NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	HWOL Code	Accred.	SOP	Units	LOD									
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	0.45	0.15	0.23	< 0.10	< 0.10	0.40	< 0.10	< 0.10	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.18	< 0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.84	0.31	0.56	0.15	0.30	1.4	< 0.10	0.24	0.24
Pyrene		M	2800	mg/kg	0.10	0.78	0.33	0.50	0.18	0.25	1.3	< 0.10	0.25	0.25
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.33	0.16	0.23	< 0.10	< 0.10	0.99	< 0.10	< 0.10	< 0.10
Chrysene		M	2800	mg/kg	0.10	0.30	0.17	0.20	< 0.10	< 0.10	1.0	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	0.55	< 0.10	0.42	< 0.10	< 0.10	1.2	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.21	< 0.10	0.14	< 0.10	< 0.10	0.88	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	0.38	< 0.10	0.33	< 0.10	< 0.10	0.95	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	0.32	< 0.10	0.21	< 0.10	< 0.10	0.89	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.55	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	0.31	< 0.10	0.20	< 0.10	< 0.10	0.82	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's		N	2800	mg/kg	2.0	4.5	< 2.0	3.0	< 2.0	< 2.0	11	< 2.0	< 2.0	< 2.0
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: STV5959 Barrington Road

Client: Soiltechnics Limited		Chemtest Job No.:				24-33105	24-33105	24-33105
Quotation No.:		Chemtest Sample ID.:				1879865	1879866	1879867
Order No.: POR020105		Client Sample Ref.:				1	2	2
		Client Sample ID.:				VTP28-0.1-1	VTP28-0.5-2	VTP31-0.5-2
		Sample Location:				VTP28	VTP28	VTP31
		Sample Type:				SOIL	SOIL	SOIL
		Top Depth (m):				0.10	0.50	0.50
		Date Sampled:				09-Oct-2024	09-Oct-2024	09-Oct-2024
		Time Sampled:				0:00	0:00	0:00
		Asbestos Lab:				NEW-ASB	NEW-ASB	NEW-ASB
Determinand	HWOL Code	Accred.	SOP	Units	LOD			
ACM Type		U	2192		N/A	-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	16	16	19
Soil Colour		N	2040		N/A	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones and Roots	Stones
Soil Texture		N	2040		N/A	Clay	Clay	Clay
pH at 20C		M	2010		4.0	7.7	7.9	7.9
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.41	0.50	0.79
Cyanide (Complex)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Free)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Arsenic		M	2455	mg/kg	0.5	16	9.3	10
Beryllium		U	2455	mg/kg	0.5	1.2	1.1	0.8
Cadmium		M	2455	mg/kg	0.10	0.49	0.19	0.20
Chromium		M	2455	mg/kg	0.5	27	29	25
Copper		M	2455	mg/kg	0.50	32	18	25
Mercury		M	2455	mg/kg	0.05	0.12	0.05	0.06
Nickel		M	2455	mg/kg	0.50	17	25	18
Lead		M	2455	mg/kg	0.50	53	23	34
Selenium		M	2455	mg/kg	0.25	1.0	0.95	0.78
Vanadium		U	2455	mg/kg	0.5	32	41	30
Zinc		M	2455	mg/kg	0.50	91	59	67
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter		M	2625	%	0.40	1.3	< 0.40	0.76
TPH >C5-C6	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C6-C7	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C7-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
TPH >C21-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total TPH >C5-C35		N	2670	mg/kg	10	< 10	< 10	< 10
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: STV5959 Barrington Road

Client: Soiltechnics Limited		Chemtest Job No.:					24-33105	24-33105	24-33105
Quotation No.:		Chemtest Sample ID.:					1879865	1879866	1879867
Order No.: POR020105		Client Sample Ref.:					1	2	2
		Client Sample ID.:					VTP28-0.1-1	VTP28-0.5-2	VTP31-0.5-2
		Sample Location:					VTP28	VTP28	VTP31
		Sample Type:					SOIL	SOIL	SOIL
		Top Depth (m):					0.10	0.50	0.50
		Date Sampled:					09-Oct-2024	09-Oct-2024	09-Oct-2024
		Time Sampled:					0:00	0:00	0:00
		Asbestos Lab:					NEW-ASB	NEW-ASB	NEW-ASB
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Phenanthrene		M	2800	mg/kg	0.10	0.12	< 0.10	0.46	
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.37	
Fluoranthene		M	2800	mg/kg	0.10	0.28	0.20	2.0	
Pyrene		M	2800	mg/kg	0.10	0.27	0.21	2.0	
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10	1.9	
Chrysene		M	2800	mg/kg	0.10	< 0.10	< 0.10	1.9	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	2.0	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	1.6	
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	1.7	
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10	1.6	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10	1.3	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10	1.6	
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	< 2.0	18	
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at $\leq 30^{\circ}\text{C}$ prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

- DW - Drinking Water
- GW - Ground Water
- LE - Land Leachate
- NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix G GQRA Screening Assessment

QRA Screening

Assessments	Status	Date	Created by	Reviewed By
<i>Acute human health risk - Soils</i>	<i>Not undertaken</i>			
Chronic human health risk - Soils	Complete	22/10/24	JB	MOH
<i>Chronic human health risk - Groundwater vapour</i>	<i>Not undertaken</i>			
<i>Controlled waters risk - Surface water</i>	<i>Not undertaken</i>			
<i>Controlled waters risk - Drinking water</i>	<i>Not undertaken</i>			
<i>Controlled waters - Free phase indicator</i>	<i>Not undertaken</i>			
<i>Phytotoxicity</i>	<i>Not undertaken</i>			
<i>Ecotoxicity</i>	<i>Not undertaken</i>			

Key

Assessment	Abbr.	QRA Source (in order of preference)	Last Update
All	NGA	No guideline value available	-
Chronic human health risk - Soils	C4SL	Category 4 Screening Levels (DEFRA)	May 2021
	S4UL	Suitable 4 Use Levels (LQM)	August 2015
	ATK	Atrisk Soil Screening Values (Atkins)	June 2017
	CL:AIRE	Generic Assessment Criteria (CL:AIRE)	Jan 2010

Chronic human health risk (soils)

Scenario														
End user		Proposed site user												
Receptor		Residential with homegrown produce												
SOM		1.00%												
GAC Preference		C4SLs over S4ULs												
Contaminant	Guideline source	Guideline value (mg/kg)	Max value (mg/kg)	Location		VTP24	VTP24	VTP26	VTP28	VTP28	VTP31			
				Depth (m)		0.10	0.50	0.10	0.10	0.50	0.50			
				Date		024-10-09T00:024-10-09T00:024-10-09T00:024-10-09T00:024-10-09T00:024-10-09T00:0								
Inorganics - Metals														
Arsenic	C4SL	37	22			21	7.9	17	16	9.3	10			
Beryllium	S4UL	1.7	1.2			1.2	0.6	0.9	1.2	1.1	0.8			
Boron	S4UL	290	1.2			0.52	0.56	< 0.40	0.41	0.5	0.79			
Cadmium	C4SL	22	0.49			0.24	< 0.10	0.15	0.49	0.19	0.2			
Chromium (III)	S4UL	910	40			40	23	26	27	29	25			
Chromium (VI)	C4SL	21	<LoD			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
Copper	S4UL	2400	160			43	19	34	32	18	25			
Cyanide - Free	ATK	34	<LoD			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			
Lead	C4SL	200	70			70	66	56	53	23	34			
Mercury	S4UL	40	0.13			0.13	< 0.05	0.11	0.12	0.05	0.06			
Nickel	S4UL	130	25			22	13	18	17	25	18			
Selenium	S4UL	250	1.4			0.89	0.39	0.6	1	0.95	0.78			
Vanadium	S4UL	410	73			43	27	35	32	41	30			
Zinc	S4UL	3700	130			130	45	96	91	59	67			
Inorganics - Asbestos														
Asbestos Type		N/A												
Asbestos Screen		N/A												
Inorganics - Soil Parameters														
Organic matter		N/A												
Organics - PAH & Phenol														
						1.9	0.57	1.2	1.3	< 0.40	0.76			
Acenaphthene	S4UL	210	<LoD			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Acenaphthylene	S4UL	170	<LoD			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Anthracene	S4UL	2400	0.37			0.18	< 0.10	< 0.10	< 0.10	< 0.10	0.37			
Benzo(a)anthracene	S4UL	7.2	1.9			0.99	< 0.10	< 0.10	< 0.10	< 0.10	1.9			
Benzo(a)pyrene	C4SL	5	1.7			0.95	< 0.10	< 0.10	< 0.10	< 0.10	1.7			
Benzo(b)fluoranthene	S4UL	2.6	2			1.2	< 0.10	< 0.10	< 0.10	< 0.10	2			
Benzo(ghi)perylene	S4UL	320	1.6			0.82	< 0.10	< 0.10	< 0.10	< 0.10	1.6			
Benzo(k)fluoranthene	S4UL	77	1.6			0.88	< 0.10	< 0.10	< 0.10	< 0.10	1.6			
Chrysene	S4UL	15	1.9			1	< 0.10	< 0.10	< 0.10	< 0.10	1.9			
Dibenz(a,h)anthracene	S4UL	0.24	1.3			0.55	< 0.10	< 0.10	< 0.10	< 0.10	1.3			
Fluoranthene	S4UL	280	2			1.4	< 0.10	0.24	0.28	0.2	2			
Fluorene	S4UL	170	<LoD			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Indeno(1,2,3-cd)pyrene	S4UL	27	1.6			0.89	< 0.10	< 0.10	< 0.10	< 0.10	1.6			
Naphthalene	C4SL	15	<LoD			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Phenanthrene	S4UL	95	0.46			0.4	< 0.10	< 0.10	0.12	< 0.10	0.46			
Phenol	S4UL	120	<LoD			< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Pyrene	S4UL	620	2			1.3	< 0.10	0.25	0.27	0.21	2			
Organics - Banded TPH (unspeciated)														
EC >5-EC6 (unspeciated)	S4UL	42	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
EC >6-EC7 (unspeciated)	S4UL	70	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
EC >7-EC8 (unspeciated)	S4UL	100	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
EC >08-EC10 (unspeciated)	S4UL	27	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
EC >10-EC12 (unspeciated)	S4UL	74	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
EC >12-EC16 (unspeciated)	S4UL	140	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
EC >16-EC21 (unspeciated)	S4UL	260	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
EC >21-EC35 (unspeciated)	S4UL	1100	<LoD			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			

Appendix H Gas Protection Measures Verification

PHOTOGRAPHIC VALIDATION EVENT, INSPECTION CERTIFICATE OF INSTALLATION

DATE: 12.9.2023

PROJECT NAME: Barrington Road, Durrington - CW - Sea

CONTRACT NO: C908 - Plot 24 - Visqueen Radon Barrier - Full Line Out

PHOTOGRAPHIC INSPECTION & VALIDATION DETAILS:

As per the the quotation, and with consideration to a premier installer, namely GB Lining services Ltd installing the membrane. MTS Ltd agreed with the client to accept photographic evidence as proof of install. Upon receipt of the copious photographs received, our validation surveyor inspected all in a timely and methodical way. Checking that all membrane had been installed to the entire footprint of the build, checking the seams were welded, checking all service entries and corner detailing and the like had been sealed using GR lap tape. All appeared to have been installed well however, MTD Ltd can not check the integrity of the welds or the adherence of the GR lap tape.

MembraneTestingSolutions Ltd hereby confirm that the elements of the project detailed above have been photographically inspected, reviewed and validated by a suitably qualified independent consultant in accordance with industry requirements, with the test result noted below:

CONCLUSION (PASS/FAIL) **PASS IN FULL**

Where the conclusion above indicates a Pass, the construction activities may proceed subject to suitable protection measures of the membrane being applied in accordance with the manufacturer's recommendations.

Signed for on behalf of **MembraneTestingSolutions Ltd:**



Name: Michael Smith

Dated: 12.9.2023

Membrane Testing Solutions Limited • The Studio, Parsonage House, Parsonage Street, Halstead, Essex CO9 2JR

Telephone: 0844 557 3786 • email: sales@mtsltd.net • www.mtsltd.net

PHOTOGRAPHIC VALIDATION EVENT, INSPECTION CERTIFICATE OF INSTALLATION

DATE: 12.9.2023

PROJECT NAME: Barrington Road, Durrington - CW - Sea

CONTRACT NO: C908 - Plot 25 - Visqueen Radon Barrier - Full Line Out

PHOTOGRAPHIC INSPECTION & VALIDATION DETAILS:

As per the quotation, and with consideration to a premier installer, namely GB Lining services Ltd installing the membrane. MTS Ltd agreed with the client to accept photographic evidence as proof of install. Upon receipt of the copious photographs received, our validation surveyor inspected all in a timely and methodical way. Checking that all membrane had been installed to the entire footprint of the build, checking the seams were welded, checking all service entries and corner detailing and the like had been sealed using GR lap tape. All appeared to have been installed well however, MTD Ltd can not check the integrity of the welds or the adherence of the GR lap tape.

MembraneTestingSolutions Ltd hereby confirm that the elements of the project detailed above have been photographically inspected, reviewed and validated by a suitably qualified independent consultant in accordance with industry requirements, with the test result noted below:

CONCLUSION (PASS/FAIL) **PASS IN FULL**

Where the conclusion above indicates a Pass, the construction activities may proceed subject to suitable protection measures of the membrane being applied in accordance with the manufacturer's recommendations.

Signed for on behalf of **MembraneTestingSolutions Ltd:**

Name: Michael Smith

Dated: 12.9.2023

Membrane Testing Solutions Limited • The Studio, Parsonage House, Parsonage Street, Halstead, Essex CO9 2JR

Telephone: 0844 557 3786 • email: sales@mtsltd.net • www.mtsltd.net

PHOTOGRAPHIC VALIDATION EVENT, INSPECTION CERTIFICATE OF INSTALLATION

DATE: 12.9.2023

PROJECT NAME: Barrington Road, Durrington - CW - Sea

CONTRACT NO: C908 - Plot 26 - Visqueen Radon Barrier - Full Line Out

PHOTOGRAPHIC INSPECTION & VALIDATION DETAILS:

As per the quotation, and with consideration to a premier installer, namely GB Lining services Ltd installing the membrane. MTS Ltd agreed with the client to accept photographic evidence as proof of install. Upon receipt of the copious photographs received, our validation surveyor inspected all in a timely and methodical way. Checking that all membrane had been installed to the entire footprint of the build, checking the seams were welded, checking all service entries and corner detailing and the like had been sealed using GR lap tape. All appeared to have been installed well however, MTD Ltd can not check the integrity of the welds or the adherence of the GR lap tape.

MembraneTestingSolutions Ltd hereby confirm that the elements of the project detailed above have been photographically inspected, reviewed and validated by a suitably qualified independent consultant in accordance with industry requirements, with the test result noted below:

CONCLUSION (PASS/FAIL) **PASS IN FULL**

Where the conclusion above indicates a Pass, the construction activities may proceed subject to suitable protection measures of the membrane being applied in accordance with the manufacturer's recommendations.

Signed for on behalf of MembraneTestingSolutions Ltd:



Name: Michael Smith

Dated: 12.9.2023

Membrane Testing Solutions Limited • The Studio, Parsonage House, Parsonage Street, Halstead, Essex CO9 2JR

Telephone: 0844 557 3786 • email: sales@mtsltd.net • www.mtsltd.net

PHOTOGRAPHIC VALIDATION EVENT, INSPECTION CERTIFICATE OF INSTALLATION

DATE: 12.9.2023

PROJECT NAME: Barrington Road, Durrington - CW - Sea

CONTRACT NO: C908 - Plot 27 - Visqueen Radon Barrier - Full Line Out

PHOTOGRAPHIC INSPECTION & VALIDATION DETAILS:

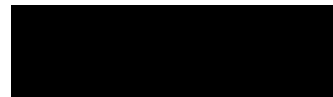
As per the quotation, and with consideration to a premier installer, namely GB Lining services Ltd installing the membrane. MTS Ltd agreed with the client to accept photographic evidence as proof of install. Upon receipt of the copious photographs received, our validation surveyor inspected all in a timely and methodical way. Checking that all membrane had been installed to the entire footprint of the build, checking the seams were welded, checking all service entries and corner detailing and the like had been sealed using GR lap tape. All appeared to have been installed well however, MTD Ltd can not check the integrity of the welds or the adherence of the GR lap tape.

MembraneTestingSolutions Ltd hereby confirm that the elements of the project detailed above have been photographically inspected, reviewed and validated by a suitably qualified independent consultant in accordance with industry requirements, with the test result noted below:

CONCLUSION (PASS/FAIL) **PASS IN FULL**

Where the conclusion above indicates a Pass, the construction activities may proceed subject to suitable protection measures of the membrane being applied in accordance with the manufacturer's recommendations.

Signed for on behalf of MembraneTestingSolutions Ltd:



Name: Michael Smith

Dated: 12.9.2023

Membrane Testing Solutions Limited • The Studio, Parsonage House, Parsonage Street, Halstead, Essex CO9 2JR

Telephone: 0844 557 3786 • email: sales@mtsltd.net • www.mtsltd.net

PHOTOGRAPHIC VALIDATION EVENT, INSPECTION CERTIFICATE OF INSTALLATION

DATE: 12.9.2023

PROJECT NAME: Barrington Road, Durrington - CW - Sea

CONTRACT NO: C908 - Plot 28 - Visqueen Radon Barrier - Full Line Out

PHOTOGRAPHIC INSPECTION & VALIDATION DETAILS:

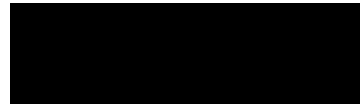
As per the quotation, and with consideration to a premier installer, namely GB Lining services Ltd installing the membrane. MTS Ltd agreed with the client to accept photographic evidence as proof of install. Upon receipt of the copious photographs received, our validation surveyor inspected all in a timely and methodical way. Checking that all membrane had been installed to the entire footprint of the build, checking the seams were welded, checking all service entries and corner detailing and the like had been sealed using GR lap tape. All appeared to have been installed well however, MTD Ltd can not check the integrity of the welds or the adherence of the GR lap tape.

MembraneTestingSolutions Ltd hereby confirm that the elements of the project detailed above have been photographically inspected, reviewed and validated by a suitably qualified independent consultant in accordance with industry requirements, with the test result noted below:

CONCLUSION (PASS/FAIL) **PASS IN FULL**

Where the conclusion above indicates a Pass, the construction activities may proceed subject to suitable protection measures of the membrane being applied in accordance with the manufacturer's recommendations.

Signed for on behalf of **MembraneTestingSolutions Ltd**:



Name: Michael Smith

Dated: 12.9.2023

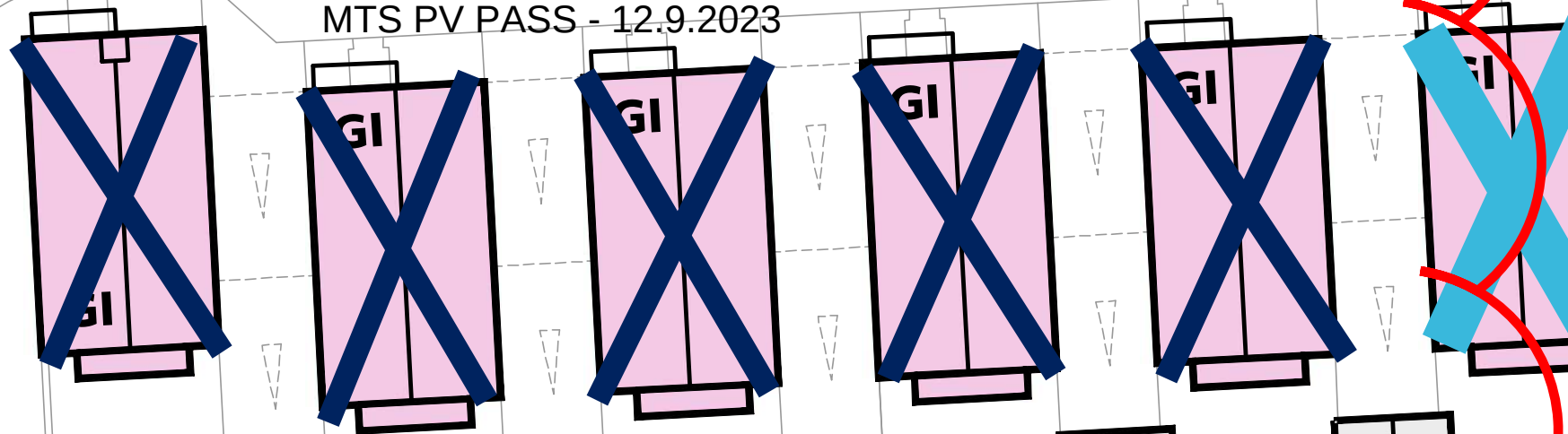
Membrane Testing Solutions Limited • The Studio, Parsonage House, Parsonage Street, Halstead, Essex CO9 2JR

Telephone: 0844 557 3786 • email: sales@mtsltd.net • www.mtsltd.net

MTS Mark-up - 12.9.2023

Installation Evidence - Plots 24 - 28

MTS PV PASS - 12.9.2023



028

027

026

025

024

023

032

031

INDEPENDENT INSPECTION & VALIDATION CERTIFICATE OF CONFORMANCE

DATE: 20.12.2023

PROJECT NAME: Barrington Road, Durrington-On-Sea.

CONTRACT NO: C908 - Plot 30 - Visqueen R400 Membrane - Full Line Out Installation.

INSPECTION, VALIDATION & INTEGRITY TESTING DETAILS:

MTS Ltd were requested to attend site to inspect/validate the R400 membrane installed to the above mentioned plot formation, the membrane covered the entire plot crossing all cavities and finishing at the outside brick edge. On initial inspection our validation surveyor noted that the membrane had been installed well. Our surveyor then using a visual pick and pull inspection, inspected all membrane welded seams, checking all detail strip used to seal service entries, door thresholds, internal corners and the like. Checking adhesion and specification, then inspected all membrane for any defects or damage. All was installed well, however, two areas of delaminating tape was found. These were marked up and immediately repaired using extra GR lap tape by the installers. The repairs were validated proving a pass. Photographic evidence was take for report inclusion. All membrane was installed to design specification and validated in accordance with the Ciria C735 best practice document.

MembraneTestingSolutions Ltd hereby confirm that the elements of the project detailed above have been inspected and validated by a suitably qualified independent consultant in accordance with industry requirements, with the test result noted below:

CONCLUSION (PASS/FAIL) **PASS IN FULL**

Where the conclusion above indicates a Pass, the construction activities may proceed subject to suitable protection measures of the membrane being applied in accordance with the manufacturers recommendations.

Signed for on behalf of MembraneTestingSolutions Ltd

Name: Michael A Smith

Dated: 20.12.2023

Signed for on behalf of The Client:

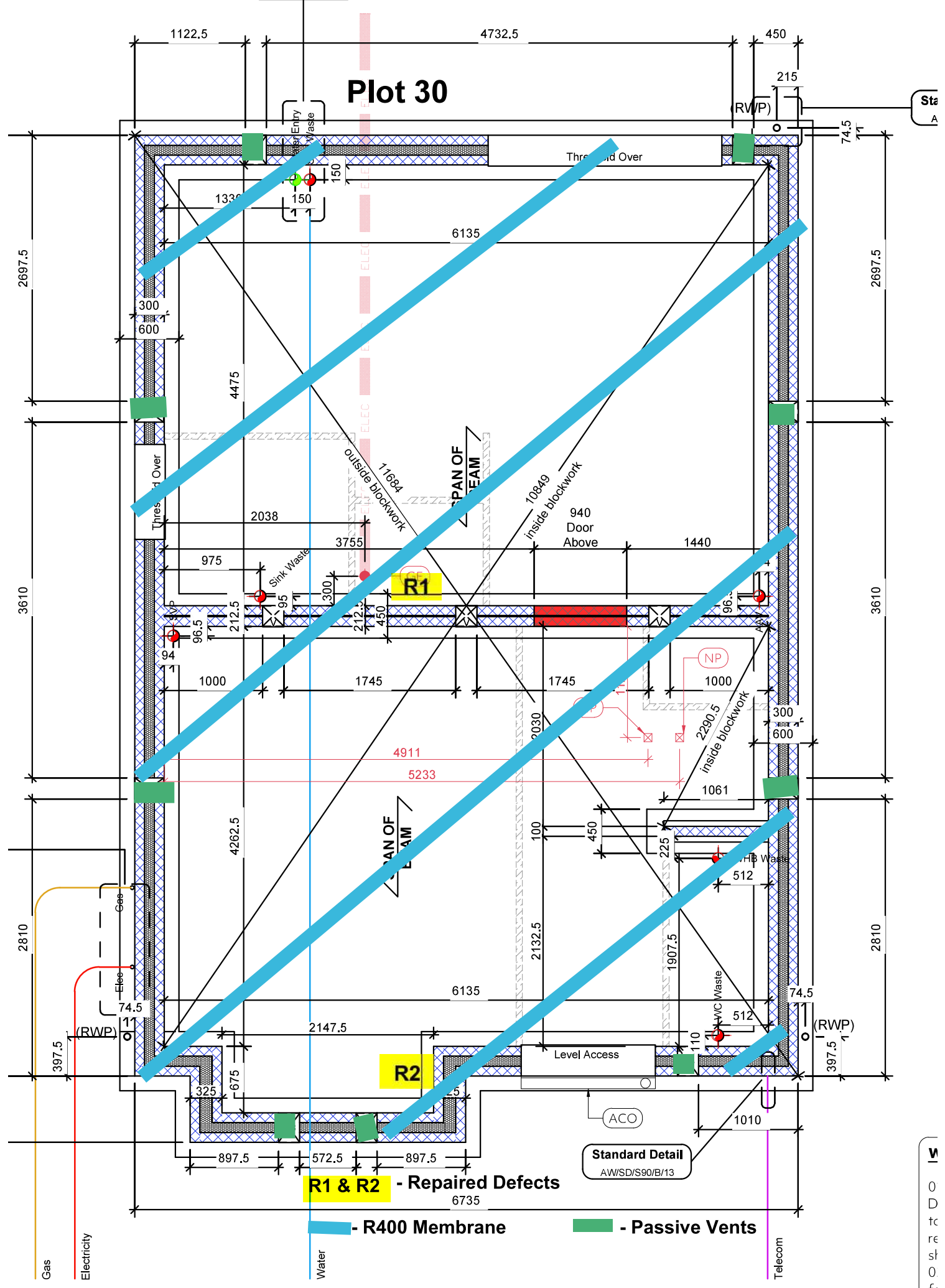
Name: David Packham

Dated: 20.12.2023

Membrane Testing Solutions Limited • The Studio, Parsonage House, Parsonage Street, Halstead, Essex CO9 2JR

Telephone: 0844 557 3786 • email: sales@mtsltd.net • www.mtsltd.net

Plot 30



R1 & R2 - Repaired Defects

- R400 Membrane

- Passive Vents

PHOTOGRAPHIC VALIDATION EVENT, INSPECTION CERTIFICATE OF INSTALLATION

DATE: 25.9.2023

PROJECT NAME: Barrington Road, Durrington - CW - Sea

CONTRACT NO: C908 - Plot 31 - Visqueen Radon Barrier - Full Line Out

PHOTOGRAPHIC INSPECTION & VALIDATION DETAILS:

As per the quotation, and with consideration to a premier installer, namely GB Lining services Ltd installing the membrane. MTS Ltd agreed with the client to accept photographic evidence as proof of install. Upon receipt of the copious photographs received, our validation surveyor inspected all in a timely and methodical way. Checking that all membrane had been installed to the entire footprint of the build, checking the seams were welded, checking all service entries and corner detailing and the like had been sealed using GR lap tape. All appeared to have been installed well however, MTD Ltd can not check the integrity of the welds or the adherence of the GR lap tape.

MembraneTestingSolutions Ltd hereby confirm that the elements of the project detailed above have been photographically inspected, reviewed and validated by a suitably qualified independent consultant in accordance with industry requirements, with the test result noted below:

CONCLUSION (PASS/FAIL) **PASS IN FULL**

Where the conclusion above indicates a Pass, the construction activities may proceed subject to suitable protection measures of the membrane being applied in accordance with the manufacturer's recommendations.

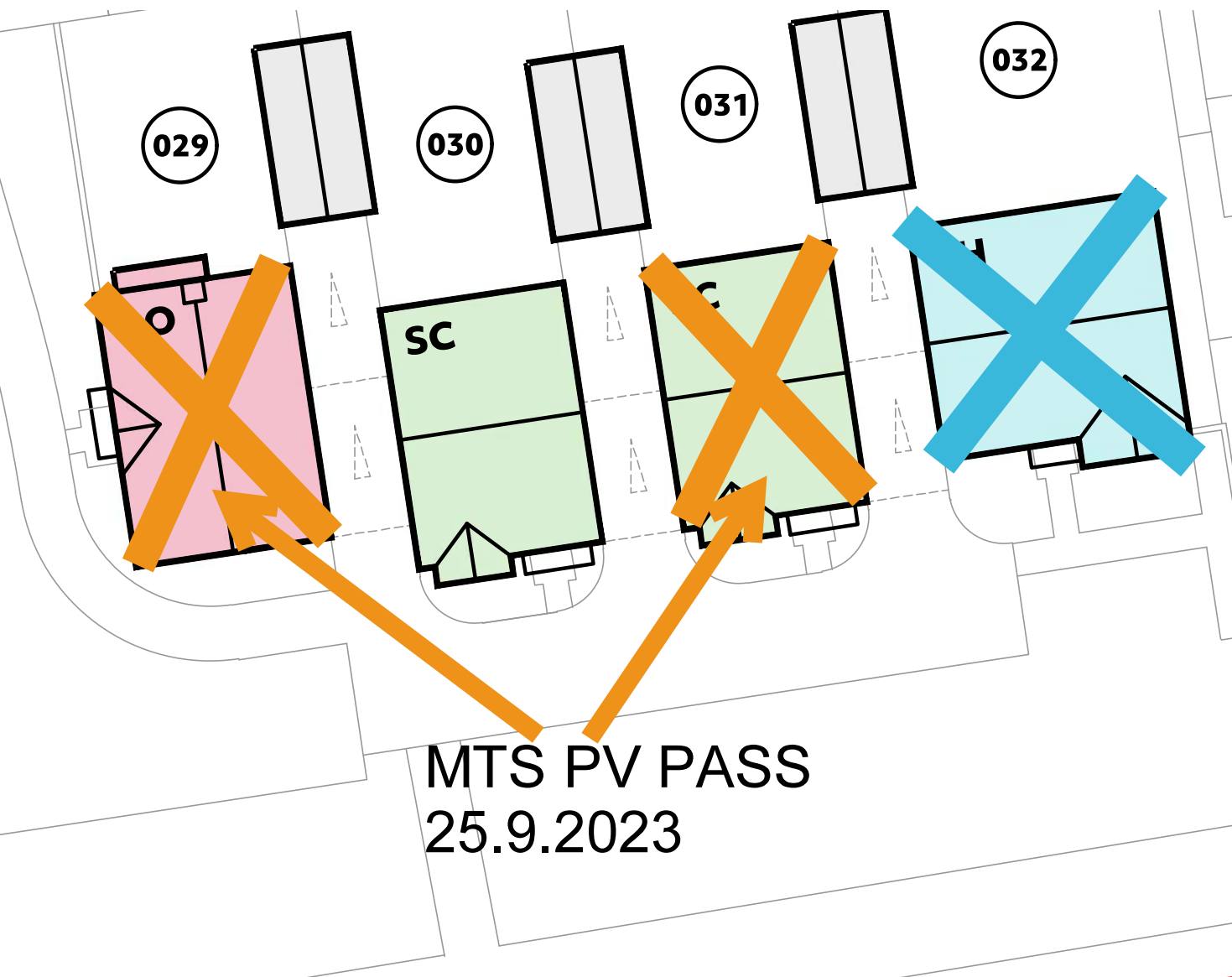
Signed for on behalf of **MembraneTestingSolutions Ltd**:

Name: Michael Smith

Dated: 25.9.2023

Membrane Testing Solutions Limited • The Studio, Parsonage House, Parsonage Street, Halstead, Essex CO9 2JR

Telephone: 0844 557 3786 • email: sales@mtsltd.net • www.mtsltd.net



MTS PV PASS
25.9.2023

PHOTOGRAPHIC VALIDATION EVENT, INSPECTION CERTIFICATE OF INSTALLATION

DATE: 10.8.2023

PROJECT NAME: Barrington Road, Durrington - CW - Sea

CONTRACT NO: C908 - Plot 32 - Visqueen Radon Barrier - Full Line Out

PHOTOGRAPHIC INSPECTION & VALIDATION DETAILS:

Due to time and program constraints, and with consideration to a premier installer, namely GB Lining services Ltd installing the membrane. MTS Ltd agreed with the client to accept photographic evidence as proof of install. Upon receipt of the copious photographs received, our validation surveyor inspected all in a timely and methodical way. Checking that all membrane had been installed to the entire footprint of the build, checking the seams were welded, checking all service entries and corner detailing and the like had been sealed using GR lap tape. All appeared to have been installed well however, MTD Ltd can not check the integrity of the welds or the adherence of the GR lap tape.

MembraneTestingSolutions Ltd hereby confirm that the elements of the project detailed above have been photographically inspected, reviewed and validated by a suitably qualified independent consultant in accordance with industry requirements, with the test result noted below:

CONCLUSION (PASS/FAIL) **PASS IN FULL**

Where the conclusion above indicates a Pass, the construction activities may proceed subject to suitable protection measures of the membrane being applied in accordance with the manufacturer's recommendations.

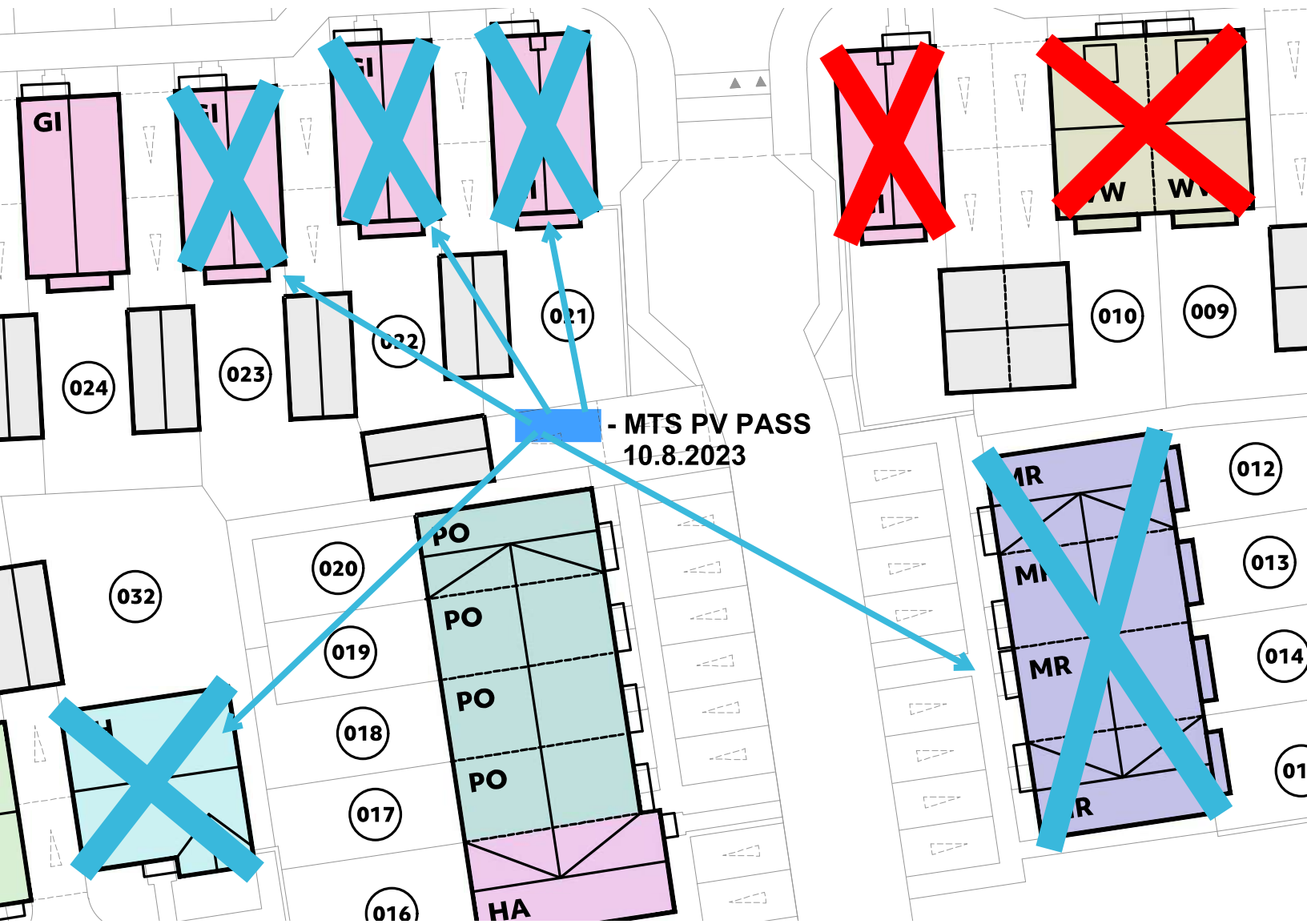
Signed for on behalf of **MembraneTestingSolutions Ltd:**

Name: Michael Smith

Dated: 10.8.2023

Membrane Testing Solutions Limited • The Studio, Parsonage House, Parsonage Street, Halstead, Essex CO9 2JR

Telephone: 0844 557 3786 • email: sales@mtsltd.net • www.mtsltd.net



Appendix I Contractor Photographs



Plot 35



Plot 35