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chartered consulting engineers

Our ref: 7565cr

Completion Report –

Build Phase Remediation

for "*Coed Issa*"

Land East of Heritage Way,

Tan Y Fron, Wrexham

(former Brymbo – Lagoon Site)

For: Taylor Wimpey North West
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17 July 2026

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Document Verification

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7565cr	17/07/2026	Completion Report – Build Phase Remediation	ST & BWH	PRS

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- Coopers Drawing No. 7565/BPRP – Build Phase Remediation and Validation Plan.
- Coopers Drawing No. 7565-LRH-GS2A-RF-02 - Typical Gas Precaution Detail – Stiff Raft.

Appendix 2 - Gas Mitigation Verification Reports

- Gas Membrane Validation Report for Plots 1 to 3, dated 08 July 2022.
- Gas Membrane Validation Report for Plots 4, 5, and 63, dated 08 July 2022.
- Gas Membrane Validation Report for Plots 6 to 8, dated 06 July 2022.
- Gas Membrane Validation Report for Plots 9, 10 and 31, dated 02 August 2022.
- Gas Membrane Validation Report for Plots 11, 12 and 30, dated 28 July 2022.
- Gas Membrane Validation Report for Plots 13 to 15, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 16 and 17, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 18 to 22, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 23 to 26, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 27 to 29, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 32, 52 and 53, dated 28 July 2024.
- Gas Membrane Validation Report for Plots 33 to 35, dated 2 August 2024.
- Gas Membrane Validation Report for Plots 36 and 37, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 38 to 43, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 44 to 46, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 47 and 48, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 49 to 51, dated 28 July 2024.
- Gas Membrane Validation Report for Plots 54 to 59, dated 06 July 2024.
- Gas Membrane Validation Report for Plots 60 to 62, dated 08 July 2024.
- Gas Membrane Validation Report for Plots 64 to 66, dated 08 July 2024.
- Gas Membrane Validation Report for Plots 67 to 70, dated 06 July 2024.

Appendix 3 – Engineers Inspection Sheets for Repairs

- Coopers Gas Mitigation Inspection Record Sheet – Plots 8
- Coopers Gas Mitigation Inspection Record Sheet – Plots 9 and 10
- Coopers Gas Mitigation Inspection Record Sheet – Plots 11 and 12
- Coopers Gas Mitigation Inspection Record Sheet – Plots 28 and 29
- Coopers Gas Mitigation Inspection Record Sheet – Plots 49 and 50
- Coopers Gas Mitigation Inspection Record Sheet – Plots 51
- Coopers Gas Mitigation Inspection Record Sheet – Plots 52 and 53

Appendix 4 - Imported Soil Test Certificates.

- DETS Report No. 22-08422
- Eurofins Chemtest Report No. 24-14484
- Eurofins Chemtest Report No. 24-15142
- Eurofins Chemtest Report No. 24-17496
- DETS Report No. 25-01056
- DETS Report No. 25-03081
- DETS Report No. 25-06390
- DETS Report No. 25-08978
- DETS Report No. 25-13440
- DETS Report No. 25-20522

1.0 Site Location and Proposed Development

1.1 The proposed development is located on open land to the east of Heritage Way, in the villages of Tan Y Fron and Brymbo, at National Grid Reference SJ 297 525, post code LL11 5SQ, approximately 4km to the north west of Wrexham city centre (refer to Figure 1), and enclosed site location plan.

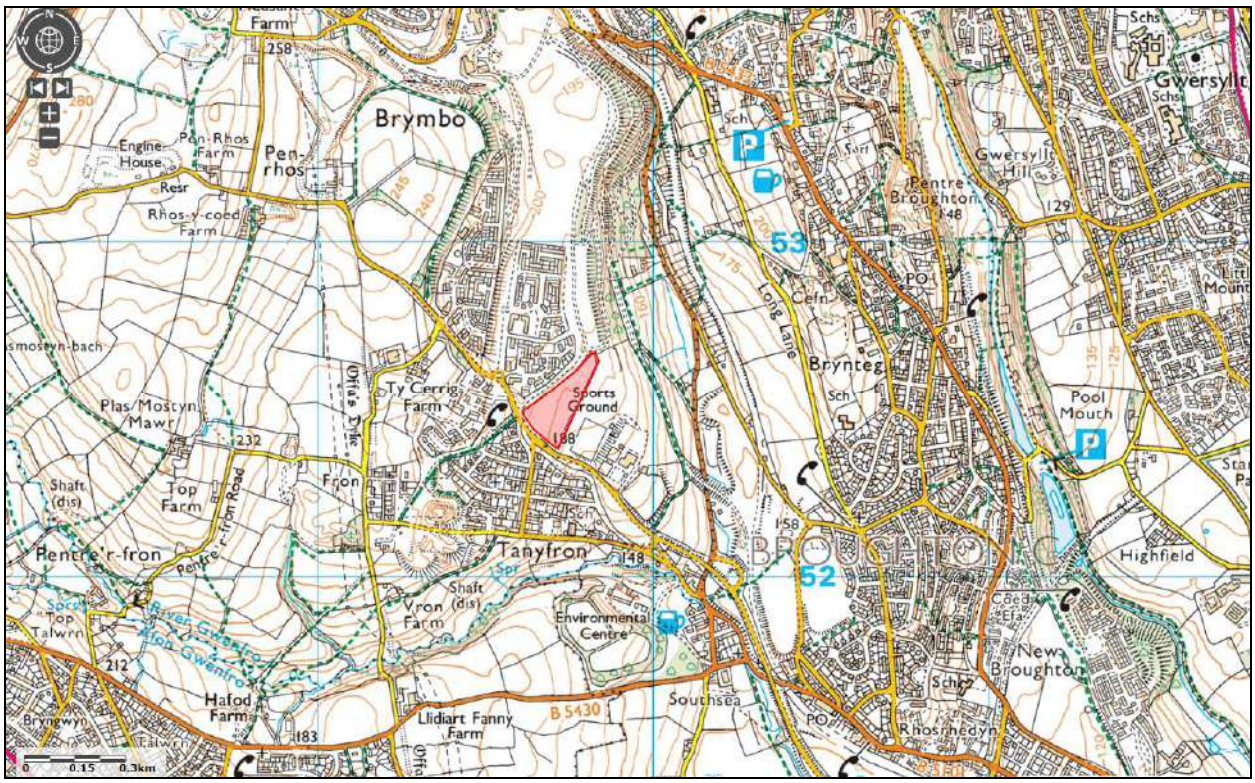


Figure 1: Site Location Plan. (NTS). Ordnance Survey Licence No. AL100005579.

1.2 The triangular shaped parcel of land is situated adjacent to residential housing to the south, west and north, with sports pitches to the east. At the time of Coopers walkover on 2 December 2020 the site consisted of 1 No. field with tree-lined embankments (refer to photograph 1) on the southern and western boundaries. The field consisted of scrubland with patches of no vegetation growth, with scattered self-seeded trees and strewn with scattered sandstone boulders left over from the remediation phase of the site.



Photograph 1: View of the site, with the tree-lined embankment in the background.

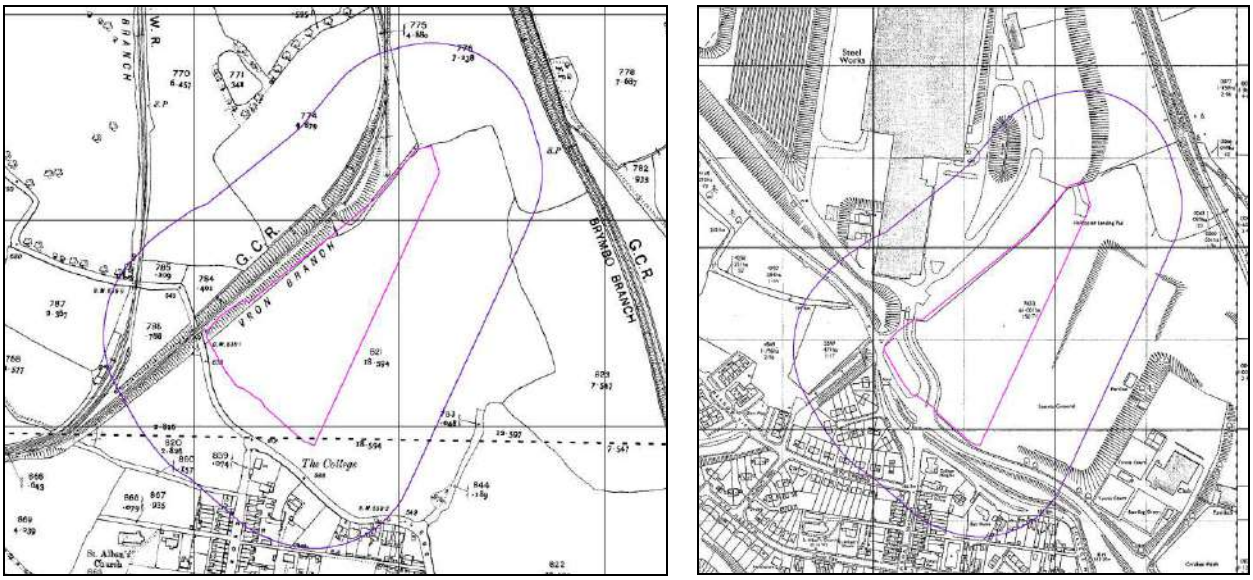
1.3 The proposed development by Taylor Wimpey North West consisted of 70 No. residential properties, comprising of a combination of traditional detached and semi-detached housing, with associated roads, parking, gardens and landscaping (refer to Figure 2). A copy of the full development layout is recorded on the appended Coopers Drawing No. 7565/BPRP in Appendix 1.



Figure 2: Extract of proposed development layout.

2.0 Summary of Site History

2.1 The site has consisted of open ground from 1879, with a mineral railway situated within a cutting along the north western site boundary recorded by 1900. The mineral railway connected Vron Colliery to the south of the site to Brymbo Steel and Iron Works to the north. The mineral railway was recorded as disused by 1962, following closure of Vron Colliery. By 1981 the mineral railway and cutting were no longer recorded with extensive earthworks to the north west at part of the extension of the steel works close to the site boundary (refer to Figures 3 and 4).



Figures 3 & 4: Showing historical Ordnance Survey map editions of 1912 (left) and 1990 (right) in relation to the approximate site boundary.

2.2 The steelworks was reported to have closed in 1990, followed by remediation works, at which time the site was formed as water storage for dust suppression, with numerous water lagoons shown on historical aerial photograph from circa 2006 (refer to Figure 5). Subsequent aerial photographs showed the lagoons to have been filled and remaining as open ground (refer to Figure 6).



Figure 5: Aerial photograph from circa 2006 with approximate site boundary. Image from Google Earth.



Figure 6: Aerial photograph from circa 2018 with approximate site boundary. Image from Google Earth.

3.0 Ground Investigations and Other Reports

3.1 The site was subject to monitoring, testing and assessments in 2007, with contaminated land aspects addressed by Smith Grant (SG) LLP and earthworks/settlement by Scott Wilson (SW) Ltd with the parcel of land referenced as "*Link Road Development Module*". The completion report by both parties were reviewed and enclosed within Wardell Armstrong report "*Ground Conditions Assessment*", referenced ST16882-001, dated November 2018.

3.2 The WA Report assessed the results from 19 No. shallow validation samples by SG in relation to current Tier 1 residential garden thresholds as part of the assessments for proposed development. The laboratory test results identified the elevated concentrations of chromium (III) in 1 No. sample, arsenic within 2 No. samples and 20 No. samples with elevated naphthalene. No asbestos fibres/fragments were found and no elevated concentrations of TPHs or dioxins were found. The WA report discussed the contaminants would not pose a significant risk to controlled waters due to the receptor sensitivity and the hydro-geological conditions.

3.4 Coopers undertook further investigation, testing and assessments of the ground conditions, the findings of which were provided within Coopers correspondence, referenced 7565TWNW210121L, dated 21 January 2021. The assessments determined the requirements for the development would be:

- Chemical testing of imported soils intended for use on site.
- Gas mitigation measures to Characteristic Situation 2 (BS8485) for all properties.

3.5 The specific measures for remediation and verification were provided within Coopers Report No. 7565bprs "*Build Phase Remediation Strategy*", dated 21 January 2021.

4.0 Summary of Gas Mitigation Measures and Verification

4.1 The previous assessments by Smith Grant (SG) identified that prior to remediation this parcel of the site was unaffected by hazardous ground. Due to the absence of post remediation gas monitoring and the potential risks of gas emissions from previous coal mining beneath the site, all properties should be constructed with Characteristic Situation 2 gas mitigation measures. The site is also designated as requiring basic radon protection measures, with the mitigation designs for CS2 superseding designs for basic radon (similar designs but higher specification of gas membrane).

4.2 The gas mitigation measures are incorporated into the floor slab construction with designs and risk classification dependent upon the type of floor slab. All plots are proposed for stiff raft foundations.

4.3 For any raft foundation the gas mitigation design system follows BS8485:2015+A1:2019 and is required to justify the system is appropriate.

4.4 The requirements for gas protection designs, mitigation and associated verification are all interconnected as part of a holistic approach defined within CIRIA C735 and supported by BS8485 and NHBC Guidance. The proposals included inspection of all plots at gas membrane stage.

5.0 Gas Mitigation Measures – Summary and Certificate References

5.1 Coopers undertook inspections of all gas membranes, constructed above the rafts, below insulation and screed. The validation reports were provided within groups of plots for legal completion, summarised in Table 1 with certificates contained in Appendix 2.

Table 1: Summary of gas membrane inspection and report dates.

Plot No.	Inspection Date	Report Date	Repair Inspection Required/Date	Plot No.	Inspection Date	Report Date	Repair Inspection Required/Date
1	10/03/2022	08/07/2022	No	36	26/04/2024	23/07/2024	N/A
2	10/03/2022	08/07/2022	No	37	26/04/2024	23/07/2024	N/A
3	10/03/2022	08/07/2022	No	38	25/06/2024	23/07/2024	N/A
4	10/03/2022	08/07/2022	No	39	25/06/2024	23/07/2024	N/A
5	28/04/2022	08/07/2022	No	40	25/06/2024	23/07/2024	N/A
6	26/05/2022	08/07/2022	No	41	25/06/2024	23/07/2024	N/A
7	26/05/2022	08/07/2022	No	42	25/06/2024	23/07/2024	N/A
8	26/05/2022	08/07/2022	03/05/2024	43	25/06/2024	23/07/2024	N/A
9	07/07/2022	02/08/2022	03/05/2024	44	26/04/2024	23/07/2024	N/A
10	07/07/2022	02/08/2022	03/05/2024	45	26/04/2024	23/07/2024	N/A
11	19/07/2022	28/07/2022	10/04/2024	46	26/04/2024	23/07/2024	N/A
12	19/07/2022	28/07/2022	10/04/2024	47	26/04/2024	23/07/2024	N/A
13	26/04/2024	23/07/2024	N/A	48	26/04/2024	23/07/2024	N/A
14	26/04/2024	23/07/2024	N/A	49	19/07/2022	28/07/2022	10/04/2024
15	26/04/2024	23/07/2024	N/A	50	19/07/2022	08/07/2022	10/04/2024
16	26/04/2024	23/07/2024	N/A	51	19/07/2022	08/07/2022	10/04/2024
17	26/04/2024	23/07/2024	N/A	52	07/07/2022	08/07/2022	03/05/2024
18	25/06/2024	23/07/2024	N/A	53	06/05/2022	08/07/2022	03/05/2024
19	25/06/2024	23/07/2024	N/A	54	06/05/2022	08/07/2022	No
20	25/06/2024	23/07/2024	N/A	55	06/05/2022	08/07/2022	No
21	25/06/2024	23/07/2024	N/A	56	06/05/2022	08/07/2022	No
22	25/06/2024	23/07/2024	N/A	57	06/05/2022	08/07/2022	No
23	18/07/2024	23/07/2024	N/A	58	06/05/2022	08/07/2022	No
24	18/07/2024	23/07/2024	N/A	59	06/05/2022	08/07/2022	No
25	18/07/2024	23/07/2024	N/A	60	06/04/2022	08/07/2022	No
26	18/07/2024	23/07/2024	N/A	61	06/04/2022	08/07/2022	No
27	18/07/2024	23/07/2024	N/A	62	06/04/2022	08/07/2022	No
28	18/07/2024	23/07/2024	28/02/2025	63	28/04/2022	08/07/2022	No
29	18/07/2024	23/07/2024	28/02/2025	64	06/04/2022	08/07/2022	No
30	19/07/2022	28/07/2022	No	65	06/04/2022	08/07/2022	No
31	07/07/2022	02/08/2022	No	66	10/03/2022	08/07/2022	No
32	19/07/2022	28/07/2022	No	67	18/03/2022	08/07/2022	No
33	07/07/2022	02/08/2022	No	68	18/03/2022	08/07/2022	No
34	07/07/2022	02/08/2022	No	69	18/03/2022	08/07/2022	No
35	07/07/2022	02/08/2022	No	70	18/03/2022	08/07/2022	No

5.2 The construction works on site were put on hold for 18 months in 2022 due to national planning limitations associated with sewage treatment/phosphates. Plots 8 to 12 and 49 to 53, were paused at floor slab construction level with attempts to protect the gas membrane undertaken by covering the areas with sand. Upon recommencement of the construction works, Coopers were invited to site to reinspect plots which had been exposed and identified areas remedial works were required, typically through cutting out and replacing sections of membrane which were damaged. The gas mitigation measures on Plots 28 and 29 were verified in July 2024, but later identified to have been damaged as a result of flooding, needing removal and reinstatement of the screed, insulation and repairs/replacement of the gas membrane. Details of Membrane Repairs are provided in Section 6.

5.3 Appendix 2 contains the completed validation reports for the validation of the gas mitigation measures, consisting of:

- Gas Membrane Validation Report for Plots 1 to 3, dated 08 July 2022.
- Gas Membrane Validation Report for Plots 4, 5, and 63, dated 08 July 2022.
- Gas Membrane Validation Report for Plots 6 to 8, dated 06 July 2022.
- Gas Membrane Validation Report for Plots 9, 10 and 31, dated 02 August 2022.
- Gas Membrane Validation Report for Plots 11, 12 and 30, dated 28 July 2022.
- Gas Membrane Validation Report for Plots 13 to 15, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 16 and 17, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 18 to 22, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 23 to 26, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 27 to 29, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 32, 52 and 53, dated 28 July 2024.
- Gas Membrane Validation Report for Plots 33 to 35, dated 2 August 2024.
- Gas Membrane Validation Report for Plots 36 and 37, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 38 to 43, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 44 to 46, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 47 and 48, dated 22 July 2024.
- Gas Membrane Validation Report for Plots 49 to 51, dated 28 July 2024.
- Gas Membrane Validation Report for Plots 54 to 59, dated 06 July 2024.
- Gas Membrane Validation Report for Plots 60 to 62, dated 08 July 2024.
- Gas Membrane Validation Report for Plots 64 to 66, dated 08 July 2024.
- Gas Membrane Validation Report for Plots 67 to 70, dated 06 July 2024.

6.0 Gas Membrane Reinspection due to Post Verification Damage

6.1 Section 5 summarised the specific requirements for reinspection of plots which were considered as liable to have been damaged after inspection and reporting, specifically to Plots 8 to 12, 28-29 and 49 to 53. Inspection record sheets for the repairs are included in Appendix 3, with further details and photographs provided below.

6.2 **Plots 11 to 12 & 49 to 51:**

Coopers attended site on 10th April 2024 to undertake reinspection of the above Plots due to identified damage subsequent to the previous inspections and issue of the verification reports. It was identified that following a lengthy period during which construction had ceased post Cooper's original inspection, the detailing tape product used to form corner sections had pulled away from the various overlapped sections with repairs required. It was determined that a full reinstallation of the corner sections with JUTA SAM would be the proposed remedial method, with Cooper's attending site upon completion to verify that the repairs met the required specification. Cooper's inspections confirmed the remedial works were suitably constructed, and photographic records included below.



Photograph 2: Example of a corner section on Plots 11-12 having been repaired following post-verification damage.



Photograph 3: Example of a section of the external wall on Plots 11-12 damaged post-verification, repaired with a patch of JUTA SAM.



Photograph 4: Example of a corner section on Plots 49-50 having been repaired following post-verification damage.



Photograph 5: Example of a section of the external wall on Plots 49-50 damaged post-verification, repaired with a patch of JUTA SAM.



Photograph 6: Example of a corner section on Plot 51 having been repaired following post-verification damage.



Photograph 7: Example of a section of the external wall on Plot 51 damaged post-verification, repaired with a patch of JUTA SAM.

6.3 **Plots 8 to 10 & 52 to 53:**

Coopers attended site on 3rd May 2025 to undertake reinspection of the above Plots due to identified damage subsequent to the previous inspections and issue of the verification reports. It was identified that following a lengthy period during which construction had ceased post Cooper's original inspection, the detailing tape product used to form corner sections had pulled away from the various overlapped sections with repairs required. It was determined that a full reinstallation of the corner sections with JUTA SAM would be the proposed remedial method, with Cooper's attending site upon completion to verify that the repairs met the required specification. Cooper's inspections confirmed the remedial works were suitably constructed, and photographic records included below.



Photograph 8: Example of a corner section on Plot 8 having been repaired following post-verification damage.



Photograph 9: Example of a section of the external wall on Plot 8 damaged post-verification, where fresh sections of Visqueen Gas Barrier have been heat welded to areas of existing gas membrane.



Photograph 10: Example of a corner section on Plots 9-10 having been repaired following post-verification damage.



Photograph 11: Example of a section of the external wall on Plots 9-10 damaged post-verification, where fresh sections of Visqueen Gas Barrier have been heat welded to areas of existing gas membrane.



Photograph 12: Example of a corner section on Plots 52-53 having been repaired following post-verification damage.



Photograph 13: Example of a section of the external wall on Plots 52-53 damaged post-verification, where fresh sections of Visqueen Gas Barrier have been heat welded to areas of existing gas membrane.

6.4 **Plots 28 to 29:**

Coopers attended site on 28th February 2025 to undertake reinspection of the above Plots due to identified damage subsequent to the previous inspections and issue of the verification reports. It was identified that following post-verification damage caused by water ingress beneath the screed (and subsequent cracking of the screed observed), a full reinstallation and fresh verification of the gas membrane was carried out by Coopers. Cooper's inspections confirmed the remedial works were suitably constructed, and photographic records included below.



Photograph 14: General status of Plots 28-29, showing the fresh gas membrane installation fully completed prior to verification by a Coopers engineer.



Photograph 15: View of the gas membrane spanning the external wall cavity on Plots 28-29.



Photograph 16: View of a dual service entry constructed from JUTA SAM, installed on Plots 28-29.



Photograph 17: View of a corner installation constructed from JUTA SAM on Plots 28-29.

7.0 Imported Soil Testing

7.1 Testing Criteria

Coopers Build Phase Remediation and Validation Strategy detailed the proposals for testing any imported soils upon delivery, with sample frequencies and testing suites depending on the source material, as below:

- **Recycled/mixed/unverified source = 1 sample per 50m^3** (minimum of 3 per source). Testing to include standard inorganics, PAHs (16), asbestos and speciated TPHs (CWG incl. BTEX), with potential for additional testing of VOCs, SVOCs and PCBs (subject to site of origin and material type).
- **Greenfield source = 1 sample per 100m^3** (minimum of 3 per source). Testing to include standard CLEA suite inorganics, PAHs (16), and asbestos.

The criteria for chemical testing of imported soils used in gardens are detailed in Table 2 (below).

Table 2: Thresholds For Inert Material Within Gardens And Landscaping

Compound/Element		Human Health (Residential)	Phytotoxic		
			pH<6	pH6-7	pH>7
Inorganics	Arsenic	37	-	-	-
	Beryllium	51	-	-	-
	Boron	291	-	-	-
	Cadmium	26	-	-	-
	Copper	-	100	135	200
	Chromium (III)	3000	-	-	-
	Chromium (VI)	21	-	-	-
	Lead	200	-	-	-
	Mercury (methyl)	7.4	-	-	-
	Mercury (inorganic)	169	-	-	-
	Nickel	-	60	75	110
	Selenium	351	-	-	-
	Vanadium	79	-	-	-
	Zinc	-	200	200	300
PAHs	Acenaphthene	205	-	-	-
	Acenaphthylene	168	-	-	-
	Anthracene	2260	-	-	-
	Benzo(a)anthracene	3.1	-	-	-
	Benzo(a)pyrene	5.0	-	-	-
	Benzo(b)fluoranthene	5.56	-	-	-
	Benzo(ghi)perylene	10.7	-	-	-
	Benzo(k)fluoranthene	8.5	-	-	-
	Chrysene	6.0	-	-	-
	Dibenz(ah)anthracene	0.76	-	-	-
	Fluoranthene	257	-	-	-
	Fluorene	163	-	-	-
	Indeno(123-cd)pyrene	3.18	-	-	-
	Phenanthrene	91.8	-	-	-
	Pyrene	563	-	-	-
	Naphthalene	1.54	-	-	-
TPH – Aliphatic	5-6	30	-	-	-
	6-8	73	-	-	-
	8-10	19	-	-	-
	10-12	93 (48)^{vap}	-	-	-
	12-16	740 (24)^{sol}	-	-	-
	16-35	45,000 (8.48)^{sol}	-	-	-
	35-44	45,000 (8.48)^{sol}	-	-	-
TPH - Aromatic	8-10	27	-	-	-
	10-12	69	-	-	-
	12-16	140	-	-	-
	16-21	250	-	-	-
	21-35	890	-	-	-
BTEX	Benzene	0.2	-	-	-
	Toluene	119	-	-	-
	Ethylbenzene	62.5	-	-	-
	Xylene (based on p)	41.7	-	-	-
	Phenol	184	-	-	-
	Asbestos	None	-	-	-

Notes to Table 2:

Thresholds derived within CLEA or DEFRA C4SL utilising the most conservative parameters for unknown nature of imported materials. This includes 1% Soil Organic Matter for organic compounds (inorganics unaffected), silty clay strata for metals, semi-metals and several PAH compounds and sandy loam for phenol and naphthalene.

Cyanide should not be present within significant quantities, and where encountered should be speciated to determine what form the cyanide is present in.

All imported material must be free of deleterious odour and should not include demolition/construction wastes within garden areas.

7.2 Testing of Soils from Stockpiles

Coopers were requested to attend site to inspect all imported soils and obtain samples for chemical testing. The sources of the soils have all been greenfield, detailed as below:

7.3 Source – Taylor Wimpey North West site at Wrexham Road, Chester.

Coopers have been engineering consultants for the above site and confirm the site is classified as a greenfield source. A total of 150m^3 of topsoil was imported from this source, sampled by Coopers upon delivery on 28 April 2022. A total of 5 No. samples were tested, with results provided within DETS Report No. 22-08422, confirming the soils were within the criteria for residential garden topsoil.

The topsoil was considered of textural quality to be suitable for use in gardens and free of construction wastes or other inclusions that would render the soils unacceptable for residential gardens (refer to Photographs 18 and 19).





Photographs 18 and 19: Stockpile sampled by Coopers on 28 April 2022.

7.4 Source – Taylor Wimpey North West site at David Whitby Way, Crewe, Cheshire

Coopers have been engineering consultants for the above site and confirm the site is classified as a greenfield source. A total of 1174m^3 of topsoil was imported from this source, sampled by Coopers upon delivery on 7 No. occasions. A summary of the testing dates, volumes and laboratory testing is provided in Table 3.

Table 3: Summary of testing and volumes of topsoil imported from David Whitby Way, Crewe.

Stockpile Volume	Sample No.	Sample Date	Laboratory Reference
100m^3	4	03/05/2024	24-14484 & 24-15142 (*1)
386m^3	4	31/05/2024	24-17496(*1)
150m^3	4	11/02/2025	25-03081 (*2)
150m^3	4	21/03/2025	25-06390 (*2)
166m^3	4	22/04/2025	25-08978 (*2)
150m^3	3	12/06/2025	25-13440 (*2)
72m^3	3	03/09/2025	25-20522 (*2)

Notes to Table 3:
**1 – Chemical testing undertaken by Eurofins Chemtest Ltd*
**2 – Chemical testing undertaken by DETS*

The first batch of topsoil sampled by Coopers on 3 May 2024 was tested by Eurofins Chemtest, Report No. 24-14484, identified 1 No. of the 4 No. samples to contain a slightly elevated concentration of one PAH compound, Dibenz(a,h)Anthracene of 0.74mg/kg above the Tier 1 threshold of 0.24mg/kg. All other samples identified concentrations below the LOD of 0.1mg/kg. The source had no likely sources of contaminants, and it was considered likely that the elevated concentrations would be due to a small inclusion and sample heterogeneity. To confirm if the elevated PAH compounds were consistently present within the sample, Coopers scheduled additional testing of 4 separate subsamples of the original sample for PAH testing. The additional testing was provided within Eurofins Chemtest, Report No. 24-15142, and identified all 4 No. samples to contain no elevated concentrations, with Dibenz(a,h)Anthracene of <0.10mg/kg.

Slightly elevated concentrations of PAH compounds can occur through inclusions of materials such as coal, ash, and clinker in addition to higher risk materials such as tars and petroleum derived materials. The presence of infrequent slightly elevated concentrations would indicate the likely presence of small inclusions where the elevated concentrations would vary if the specific soil particles were present within the extract. The laboratories homogenise the samples received, but where small inclusions are infrequent this will result in variable spikes in concentrations. It was considered that the material as a whole would not pose a significant risk, and the infrequent low occurrences of spikes in PAH compounds would not pose a significant risk within soils in the residential gardens.

The topsoil was considered of textural quality to be suitable for use in gardens and free of construction wastes or other inclusions that would render the soils unacceptable for residential gardens (refer to Photographs 20 and 21).



Photographs 20 and 21: Stockpile sampled by Coopers on 3 May 2024 (left) and 12 June 2025 (right).

7.5 **Source – Redrow Homes site at "Daresbury Phase 2", located off Delph Lane/Chester Road (A56), Daresbury, Cheshire.**

Taylor Wimpey North West provided a copy of the ground investigation report undertaken by Betts Associates on behalf of Redrow Homes for their residential development, referenced 12RED037/GI, revision 1, dated January 2013. The report referenced that the site consisted of 4 No. agricultural fields, with no former development on the site (Greenfield in origin). The investigation identified occasional slightly elevated concentrations of PAH Compounds (benzo(a)pyrene) in topsoil. The assessments determined the elevations related to coal fragments with forensic and statistical assessments determining the soils as suitable for residential gardens and no remediation required.

A total of 110m^3 of topsoil was imported from this source, sampled by Coopers upon delivery on 16 January 2025. A total of 4 No. samples were tested, with results provided within DETS Report No. 25-01056, confirming the soils were within the criteria for residential garden topsoil.

The topsoil was considered of textural quality to be suitable for use in gardens and free of construction wastes or other inclusions that would render the soils unacceptable for residential gardens (refer to Photographs 22 and 23).





Photographs 22 and 23: Stockpile sampled by Coopers on 16 January 2025.

8.0 Conclusions

8.1 Coopers can confirm the testing of all imported soils and verification of the gas mitigation measures has been undertaken in accordance with the build phase remediation strategy.

8.2 This report should be submitted to and approved by Wrexham Council and NHBC prior to development.