



Photograph No 5

15 May 2012 – Typical ground profile prior to the removal of made ground



Photograph No 6

15 May 2012 – Ground profile indicates the position of former tank or cooling tower



Photograph No 7

11 July 2012 – Removal of made ground and breakout of rock



Photograph No 8

4 December 2012 – Typical ground profile following the removal of made ground



Photograph No 9

30 May 2013 – Typical ground profile following completion of the works



Photograph No 10

30 May 2013 – Typical ground profile following completion of the works

A E I F CO ARISO OF RBSL A RTC T RES OL S

4. Comparison of RBSLs and RTC

As an objective of these works was to establish whether the RBSLs were health protective, the RBSLs and RTC have been compared. This comparison is presented in the tables in this section of the report. Within the tables within this section, the lower of the RBSL/RTC has been bolded. Therefore where the RBSL has been bolded, it is protective in comparison to the RTC:

- If the RBSL and the RTC are equal, the RBSL is bolded.
- If the RTC is lower than the RBSL, the RTC is bolded ¹⁶.
- If the RBSL is lower than the RTC, the RBSL is bolded.

Where the RTC are greater than the RBSL or the RTC are equal to the RBSL, the values have been marked as final to illustrate that the RBSL is protective. Where the RTC are lower than the RBSL, further site specific modifications could be considered to establish whether the RTC is unnecessarily conservative and these have been marked as draft.

The RBSL should be used in all cases, except where the RTC is bolded. In this event, the relevant RTC should therefore be adopted.

These further site specific modifications have not been considered at the present stage. However, information provided herein could be used to inform such an evaluation.

4.1 Comparison of residential RBSLs and RTC (shallow soil)

The residential RBSLs and RTC for a shallow soil source are compared in Table 4.1 below.

Table 4.1 – Comparison of residential RBSLs and RTC for shallow soil

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sand (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/Final
Arsenic	6.40E+01	6.40E+01 a	6.40E+01 a	final
Chromium	1.30E+02	7.80E+01 a	7.80E+01 a	draft
Cadmium	2.60E+00	3.00E+00 b	3.00E+00 b	final
Mercury (inorganic)	1.00E+00	1.00E+00 b	1.00E+00 b	final
Nickel	5.00E+01	7.50E+01 b	7.50E+01 b	final
Selenium	3.00E+00	3.00E+00 b	3.00E+00 b	final
Lead	3.37E+02	3.37E+02 a	3.37E+02 a	final
Vanadium	4.16E+02	1.13E+02	1.15E+02	draft
Copper	4.78E+02	1.43E+02 a	1.43E+02 a	draft
Zinc	2.00E+02	4.78E+02 a	4.78E+02 a	final
Benzo(a)pyrene	9.00E-01	2.11E+00	2.42E+00	final
Benzene	1.20E-01	4.93E-02	1.92E-01	draft
Toluene	3.60E+01	8.69E+01	3.29E+02	final
Ethylbenzene	4.10E+01	3.82E+01	1.93E+02	draft
Xylene	3.20E+01	1.72E+01	1.31E+02	draft

¹⁶ In some cases there may be two RTC, where one RTC is higher and the other lower: one may be bolded and the other not and therefore they remain as draft.

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sand (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/Final
TPH aromatic C7-C8	1.25E+02	8.69E+01	3.29E+02	draft
TPH aromatic C8-C10	9.40E+01	1.48E+01	1.03E+02	draft
TPH aromatic C10-C12	1.18E+02	5.73E+01	2.21E+02	draft
TPH aromatic C12-C16	1.31E+02	1.42E+02	4.14E+02	final
TPH aliphatic C6-C8	8.34E+03	6.98E+01	1.69E+04 *	draft
TPH aliphatic C8-C10	1.12E+02	9.76E+00	8.71E+01	draft
TPH aliphatic C10-C12	3.20E+03	1.78E+03 *	4.18E+03 *	draft
TPH aliphatic C12-C16	4.51E+03	5.10E+03 *	5.31E+03 *	final
TPH aromatic C16-C21	8.20E+01	2.72E+02	5.77E+02	final
TPH aromatic C21-C35	1.13E+03	8.88E+02	1.14E+03	draft
TPH aliphatic C16-C21	9.42E+04	1.45E+05	1.45E+05	final
TPH aliphatic C21-C35	9.48E+04			final
Total TPH (Phase 1)	1.72E+03	none (see note 9)		
Total TPH (Process Area)	2.60E+03			
Total TPH (North Tank Farm)	1.10E+03			
Total TPH (South Tank Farm)	1.02E+03			
1,2-Dichloroethane	4.00E-02	1.90E-03	1.02E-02	draft
1,1,1-Trichloroethane	1.54E+02	2.23E+00	1.73E+01	draft
Tetrachloroethene	1.10E+01	4.55E-01	3.62E+00	draft
Trichloroethene	1.00E+00	3.82E-02	3.04E-01	draft
Vinyl chloride	1.00E-02	2.02E-04	8.20E-04	draft
Dichloromethane	5.00E+00	4.58E-01	1.56E+00	draft
Cis-1,2-Dichloroethene	4.00E+00	3.93E-02	2.55E-01	draft
Trans-1,2 Dichloroethene		6.71E-02	4.64E-01	draft
Notes				
1. It is assumed that no visible free product is present within the top 1.0m of soil				
2. Metal RTC derived considering Soil Codes and background data a – based on background soil concentration b – based on Soil Code				
3. Xylene - the lowest RTC of the three isomers has been presented. Users must consider total exposure from all xylene isomers and not consider them in isolation				
4. TPH aromatic C7-C8 is considered to comprise toluene only by Atkins				
* 5. The RTC for TPH aliphatic C10-C12 and TPH aliphatic C12-C16 for 1% sand and TPH aliphatic C6-C8, TPH aliphatic C10-C12 and TPH aliphatic C12-C16 for 3% sandy loam are based on a value produced from following the approach outlined in SR4 for substances at saturation				
6. In the S106 (Ref. 1), only one value was presented for 1,2-dichloroethene of 4 mg/kg				
7. 'Total' TPH RBSL derived for an area of development, based on individual RBSL and available mass fraction TPH data in soil at time of derivation, using the inverse weighted average approach.				

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sand (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/Final
8. Benzo(a)pyrene RBSL to be compared against sum of 16 US EPA Priority List PAHs using Toxicity Equivalence approach				
9. No RTC was produced for total TPH as this will be considered further at validation stage				
10. Asbestos has not been considered here as it is being considered in a separate report				
11. Additivity for TPHs and PAHs to be undertaken in line with guidance in this report				

4.2 Comparison of residential RBSLs and RTC (deep soil)

The residential RBSLs and RTC for a deep soil source are compared in Table 4.2 below.

Table 4.2 – Comparison of residential RBSLs and RTC for deep soil (1m FFL)

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sandy loam (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/final
Benzo(a)pyrene	none	>sat	>sat	final
Benzene	4.00E-01	4.60E-01	9.87E-01	final
Toluene	5.20E+01	>sat	>sat	final
Ethylbenzene	1.40E+02	2.90E+02	8.12E+02	final
Xylene	5.80E+01	9.14E+01	2.56E+02	final
TPH aromatic C7-C8	1.46E+02	>sat	>sat	final
TPH aromatic C8-C10	2.57E+02	7.10E+01	2.09E+02	draft
TPH aromatic C10-C12	1.39E+03	>sat	>sat	final
TPH aromatic C12-C16	none	>sat	>sat	final
TPH aliphatic C6-C8	none	>sat	>sat	final
TPH aliphatic C8-C10	1.58E+02	4.25E+01	1.25E+02	draft
TPH aliphatic C10-C12	none	>sat	>sat	final
TPH aliphatic C12-C16	none	>sat	>sat	final
TPH aliphatic C16-C21	none	none (see note 3)		
TPH aliphatic C21-C35	none			
TPH aromatic C16-C21	none			
TPH aromatic C21-C35	none			
Total TPH (Phase 1)	9.18E+03	none (see note 9)		
Total TPH (Process Area)	4.10E+03			
Total TPH (North Tank Farm)	3.80E+03			
Total TPH (South Tank Farm)	2.79E+03			
1,2-Dichloroethane	1.00E-01	1.11E-02	1.76E-02	draft
1,1,1-Trichloroethane	1.60E+02	1.08E+01	2.59E+01	draft
Tetrachloroethene	3.40E+01	2.30E+00	6.12E+00	draft
Trichloroethene	2.00E+00	1.88E-01	4.63E-01	draft

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sandy loam (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/final
Vinyl chloride	4.00E-02	9.30E-04	1.29E-03	draft
Dichloromethane	8.40E+01	4.19E+00	6.04E+00	draft
Cis-1,2-Dichloroethene	7.00E+00	2.06E-01	3.92E-01	draft
Trans-1,2 Dichloroethene		3.32E-01	6.89E-01	draft
Notes				
1. Where the lower of the vapour or aqueous saturation limits have been exceeded by the RTC calculated, the hazard quotient is considered to be less than 1 and as such >sat has been presented				
2. Xylene - the lowest RTC of the three isomers has been presented. Users must consider total exposure from all xylene isomers and not consider them in isolation				
3. TPH >C16 are not considered to be volatile according to TPHCWG. Consequently the inhalation of vapour pathways have not been considered and therefore no RTC value has been presented here				
4. "none" indicates theoretical RBSL greater than solubility limit				
5. In the S106 (Ref. 1), only one value was presented for 1,2-dichloroethene of 7 mg/kg				
6. 'Total' TPH RBSL derived for an area of development, based on individual RBSL and available mass fraction TPH data in soil at time of derivation, using the inverse weighted average approach.				
7. Benzo(a)pyrene RBSL to be compared against sum of 16 US EPA Priority List PAHs using Toxicity Equivalence approach				
8. TPH aromatic C7-C8 is considered to comprise toluene only by Atkins				
9. No RTC was produced for total TPH as this will be considered further at validation stage				
10. Asbestos has not been considered here as it is being considered in a separate report				
11. Additivity for TPHs and PAHs to be undertaken in line with guidance in this report				

4.3 Comparison of residential RBSLs and RTC (groundwater)

The residential RBSLs and RTC for a groundwater source are compared in Table 4.3 below.

Table 4.3 – Comparison of residential RBSLs and RTC for groundwater (1m FFL)

Contaminant	S106 RBSL (mg/l)	RTC (mg/l)	Draft/Final
Benzo(a)pyrene	none	>sat	final
Benzene	7.00E-01	8.88E-02	draft
Toluene	4.70E+01	9.64E+01	final
Ethylbenzene	1.02E+02	1.34E+01	draft
Xylene	4.30E+01	4.10E+00	draft
TPH aromatic C7-C8	2.00E+01	9.64E+01	final
TPH aromatic C8-C10	2.20E+01	9.85E-01	draft
TPH aromatic C10-C12	none	3.87E+00	draft
TPH aromatic C12-C16	none	>sat	final
TPH aromatic C16-C21	none	none (see note 6)	final
TPH aromatic C21-C35	none		final
TPH aliphatic C6-C8	none	1.40E+00	draft

Contaminant	S106 RBSL (mg/l)	RTC (mg/l)	Draft/Final
TPH aliphatic C8-C10	none	2.96E-02	draft
TPH aliphatic C10-C12	none	2.28E-02	draft
TPH aliphatic C12-C16	none	>sat	final
TPH aliphatic C16-C21	none	none (see note 6)	final
TPH aliphatic C21-C35	none		final
1,2-Dichloroethane	2.00E-01	3.73E-02	draft
1,1,1-Trichloroethane	1.93E+02	1.31E+01	draft
Tetrachloroethene	2.20E+01	1.66E+00	draft
Trichloroethene	2.60E+00	2.22E-01	draft
Vinyl chloride	6.00E-02	2.48E-03	draft
Dichloromethane	1.50E+02	1.30E+01	draft
Cis-1,2 Dichloroethene	1.50E+01	5.47E-01	draft
Trans-1,2 Dichloroethene	1.50E+01	6.75E-01	draft
Notes			
1. Xylene - the lowest RTC of the three isomers has been presented. Users must consider total exposure from all xylene isomers and not consider them in isolation			
2. TPH aromatic C7-C8 is considered to comprise toluene only by Atkins			
3. "none" indicates theoretical RBSL greater than solubility limit			
4. In the S106 (Ref. 1), only one value was presented for 1,2-Dichloroethene of 15 mg/l.			
5. Where indoor and outdoor values were presented by RBCA, these have been integrated in line with SNIFFER (2003). Where both indoor and outdoor values derived by RBCA were greater than the saturation limit, >sat has been presented. Where indoor values were presented by RBCA, and the outdoor values were >sat, only the indoor values have been presented. Therefore >sat indicates that the theoretical RTC is greater than solubility limit.			
6. TPH >C16 are not considered to be volatile according to TPHCWG. Consequently the inhalation of vapour pathways have not been considered			
7. Additivity for TPHs and PAHs to be undertaken in line with guidance in this report			

4.4 Comparison of recreational RBSLs and parks RTC (shallow soil)

The residential RBSLs and RTC for a shallow soil source are compared in Table 4.4 below.

Table 4.4 – Comparison of recreational RBSLs and RTC for shallow soil

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sand (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/Final
Arsenic	6.40E+01	6.40E+01 a	6.40E+01 a	final
Chromium	2.00E+02	7.80E+01 a	7.80E+01 a	draft
Cadmium	2.60E+00	3.00E+00 b	3.00E+00 b	final
Mercury (inorganic)	1.00E+00	1.00E+00 b	1.00E+00 b	final
Nickel	7.50E+01	7.50E+01 b	7.50E+01 b	final

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sand (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/Final
Selenium	3.00E+00	3.00E+00 b	3.00E+00 b	final
Lead	3.37E+02	3.37E+02 a	3.37E+02 a	final
Vanadium	6.40E+02	3.51E+02	3.51E+02	draft
Copper	4.78E+02	1.43E+02 a	1.43E+02 a	draft
Zinc	2.00E+02	4.78E+02 a	4.78E+02 a	final
Benzo(a)pyrene	9.00E-01	2.14E+00	2.14E+00	final
Benzene	1.30E+01	2.62E+01	2.75E+01	final
Toluene	8.11E+03	2.16E+04 *	2.14E+04 *	final
Ethylbenzene	4.74E+03	9.67E+03 *	9.45E+03 *	final
Xylene	7.94E+03	1.72E+04 *	1.50E+04 *	final
TPH aromatic C7-C8	2.13E+04	2.16E+04	2.14E+04	final
TPH aromatic C8-C10	4.03E+03	2.23E+03	2.31E+03	draft
TPH aromatic C10-C12	4.59E+03	2.30E+03	2.34E+03	draft
TPH aromatic C12-C16	4.80E+03	2.33E+03	2.35E+03	draft
TPH aliphatic C6-C8	6.06E+05	2.94E+05 *	2.94E+05 *	draft
TPH aliphatic C8-C10	1.21E+04	5.88E+03 *	5.74E+03 *	draft
TPH aliphatic C10-C12	1.21E+04	5.70E+03	5.83E+03	draft
TPH aliphatic C12-C16	1.21E+04	5.80E+03	5.86E+03	draft
TPH aromatic C16-C21	3.64E+03	1.45E+03	1.45E+03	draft
TPH aromatic C21-C35	3.64E+03	1.45E+03	1.45E+03	draft
TPH aliphatic C16-C35	2.43E+05	1.59E+05	1.59E+05	draft
TPH aliphatic C21-C35	2.43E+05			draft
Total TPH (Phase 1)	9.06E+03	none (see note 10)		
Total TPH (Process Area)	1.08E+04			
Total TPH (North Tank Farm)	9.42E+03			
Total TPH (South Tank Farm)	6.35E+03			
1,2-Dichloroethane	4.50E+00	9.52E+00	1.07E+01	final
1,1,1-Trichloroethane	2.79E+04	5.80E+04 *	5.80E+04 *	final
Tetrachloroethene	6.41E+02	1.29E+03 *	1.29E+03 *	final
Trichloroethene	1.93E+02	3.79E+02	4.55E+02	final
Vinyl chloride	7.00E-01	1.29E+00	1.33E+00	final
Dichloromethane	2.41E+02	5.07E+02	5.12E+02	final
Cis-1,2-Dichloroethene	6.32E+02	3.92E+02	4.68E+02	draft
Trans-1,2 Dichloroethene	6.32E+02	1.11E+03	1.40E+03	final
Notes				
1. It is assumed that no visible free product is present within the top 1.0m of soil				

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sand (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/Final
2. Metal RTC derived considering Soil Codes and background data a – based on background soil concentration b – based on Soil Code				
3. Xylene - the lowest RTC of the three isomers has been presented. Users must consider total exposure from all xylene isomers and not consider them in isolation				
4. TPH aromatic C7-C8 is considered to comprise toluene only by Atkins				
* 5. The RTC for toluene, ethylbenzene, xylene, TPH aliphatic C6-C8, TPH aliphatic C8-C10, 1,1,1-trichloroethane and tetrachloroethene are based on a value produced from following the approach outlined in SR4 for substances at saturation				
6. TPH >C16 are not considered to be volatile according to TPHCWG. Consequently the inhalation of vapour pathways have not been considered				
7. In the S106 (Ref. 1), only one value was presented for 1,2-dichloroethene of 632 mg/kg				
8. 'Total' TPH RBSL derived for an area of development, based on individual RBSL and available mass fraction TPH data in soil at time of derivation, using the inverse weighted average approach.				
9. Benzo(a)pyrene RBSL to be compared against sum of 16 US EPA Priority List PAHs using Toxicity Equivalence approach				
10. No RTC was produced for total TPH as this will be considered further at validation stage				
11. Asbestos has not been considered here as it is being considered in a separate report				
11. Additivity for TPHs and PAHs to be undertaken in line with guidance in this report				

4.5 Comparison of recreational RBSLs and parks RTC (deep soil)

The residential RBSLs and RTC for a deep soil source are compared in Table 4.5 below.

Table 4.5 – Comparison of recreational RBSLs and RTC for deep soil (1m FFL)

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sandy loam (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/Final
Benzo(a)pyrene	none	>sat	>sat	final
Benzene	4.80E+01	4.32E+02	9.28E+02	final
Toluene	none	>sat	>sat	final
Ethylbenzene	none	>sat	>sat	final
Xylene	none	4.78E+02	1.33E+03	draft
TPH aromatic C7-C8	none	>sat	>sat	final
TPH aromatic C8-C10	none	>sat	>sat	final
TPH aromatic C10-C12	none	>sat	>sat	final
TPH aromatic C12-C16	none	>sat	>sat	final
TPH aliphatic C6-C8	none	>sat	>sat	final
TPH aliphatic C8-C10	none	>sat	>sat	final
TPH aliphatic C10-C12	none	>sat	>sat	final

Contaminant	S106 RBSL (mg/kg)	RTC 1% Sandy loam (mg/kg)	RTC 3% Sandy loam (mg/kg)	Draft/Final
TPH aliphatic C12-C16	none	>sat	>sat	final
TPH aromatic C16-C21	none	none (see note 4)		
TPH aromatic C21-C35	none			
TPH aliphatic C16-C21	none			
TPH aliphatic C21-C35	none			
Total TPH (Phase 1)	none	none (see note 8)		
Total TPH (Process Area)	none			
Total TPH (North Tank Farm)	none			
Total TPH (South Tank Farm)	none			
1,2-Dichloroethane	6.00E+00	1.04E+02	1.66E+02	final
1,1,1-Trichloroethane	none	>sat	>sat	final
Tetrachloroethene	1.78E+03	>sat	>sat	final
Trichloroethene	2.69E+02	>sat	>sat	final
Vinyl chloride	1.60E+01	8.21E+00	1.14E+01	draft
Dichloromethane	6.22E+03	>sat	>sat	final
Cis-1,2-Dichloroethene	8.81E+02	1.92E+03	3.66E+03	final
Trans-1,2 Dichloroethene		3.10E+03	6.42E+03	final
Notes				
1. Where the lower of the vapour or aqueous saturation limits has been exceeded by the RTC calculated, the hazard quotient is considered to be less than 1 and as such >sat has been presented				
2. Xylene - Users must consider total exposure from all xylene isomers and not consider them in isolation. It should be noted that the value presented is the lowest of the aqueous or vapour saturation limits. The lowest saturation limit of the three isomers has been presented.				
3. TPH aromatic C7-C8 is considered to comprise toluene only by Atkins				
4. TPH >C16 are not considered to be volatile according to TPHCWG. Consequently the inhalation of vapour pathways have not been considered and therefore no value has been presented here				
5. “none” indicates theoretical RBSL greater than solubility limit				
6. ‘Total’ TPH RBSL derived for an area of development, based on individual RBSL and available mass fraction TPH data in soil at time of derivation, using the inverse weighted average approach.				
7. Benzo(a)pyrene RBSL to be compared against sum of 16 US EPA Priority List PAHs using Toxicity Equivalence approach				
8. No RTC was produced for total TPH as this will be considered further at validation stage				
9. Asbestos has not been considered here as it is being considered in a separate report				
10. In the S106, only one value was presented for 1,2-dichloroethene of 881 mg/kg				
11. Additivity for TPHs and PAHs to be undertaken in line with guidance in this report				

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AECOM Infrastructure & Environment UK Limited
Longcross Court
47 Newport Road
Cardiff
CF24 0AD
United Kingdom

Telephone: +44(0)29 2046 5960
Fax: +44(0)29 2046 5961

www.aecom.com

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Scope

This Redevelopment Remediation Works Completion Certificate (RRWCC) has been prepared with reference to the following agreements:

- Section 106 Agreement dated 8 February 2008 between Neath Port Talbot Borough Council (NPTCBC), St Modwen Developments Limited (SMD), St Modwen Properties Plc (SMP), BP Oil Llandarcy Refinery Limited (BPLR) and Coed Darcy Limited (CDL); and
- Remediation and Maintenance Agreement dated 23 May 2008 (RMA) between SMD, SMP and CDL.

Unless advised otherwise, definitions used in this RRWCC can be found in the Section 106 Agreement and/or the RMA.

This RRWCC has been prepared for Phase 31 in response to the receipt of a written request from SMD pursuant to clause 4.3 of the RMA. The phase boundary and intended use on which this RRWCC is based were notified to the Monitor by letter, a copy of which is provided in **Appendix A**.

The Phase Boundary for Phase 31 is the land edged green on drawing 5041216-REM-DWG-1565 Rev B, a copy of which is provided in **Appendix A**. The approximate location of Phase 31 in relation to the Development Boundary is shown in **Figure** below. The area of Phase 31 is approximately 31,575m².

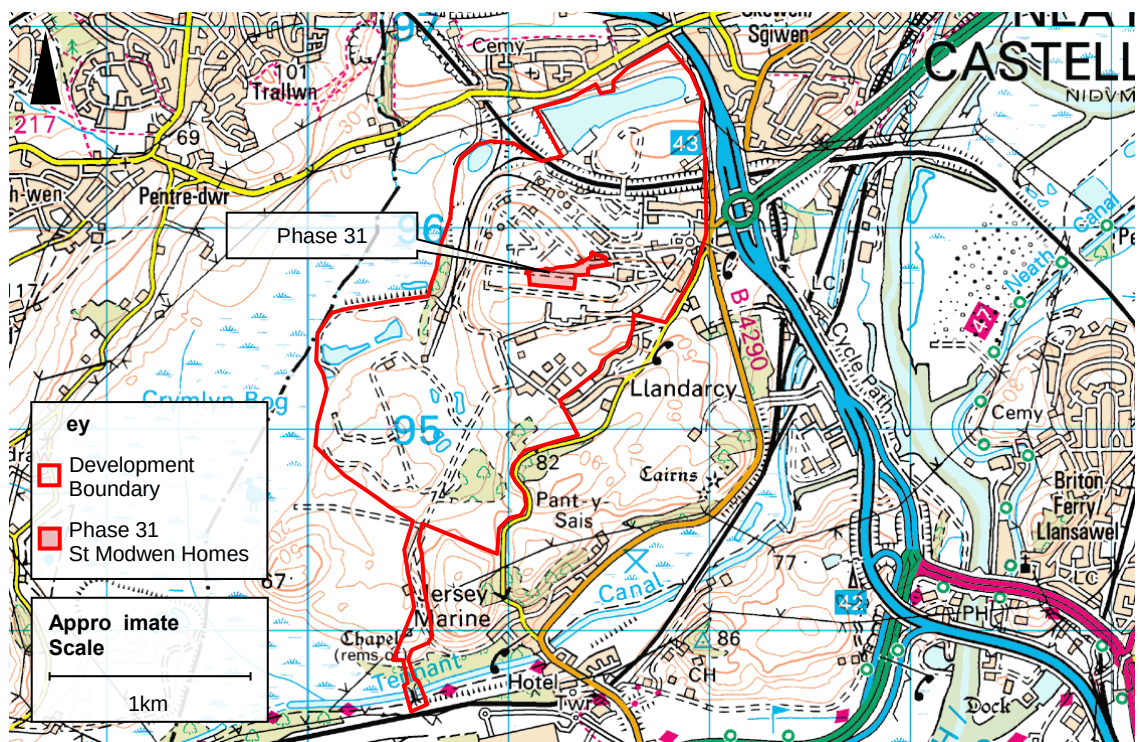


Figure Location plan

The intended use has been declared as 'residential housing with gardens and associated infrastructure'. With reference to the definitions provided in the Section 106 Agreement, this is considered to comprise a residential phase.

The proposed development layout is illustrated on the Rodgers Leask drawings P13-268 309 and 310, copies of which are also provided in **Appendi A**. It is noted that the proposed development layout is only known for part of Phase 31. However an older Roberts Limbrick drawing 7389/SK007A, a copy of which is provided in **Appendi A**, illustrates an indicative development layout for the entire Phase 31.

In accordance with the requirements of the Monitor's Deed of Appointment, this RRWCC shall:

- Describe the remedial action which in the Monitor's professional opinion has been carried out for the purposes of completing the Redevelopment Remediation Works in relation to Phase 31; and
- Certify that in the Monitor's professional opinion the Redevelopment Remediation Works have been satisfactorily completed for Phase 31 in accordance with the purpose, objectives and requirements of Schedule 8 of the Section 106 Agreement, having regard to the intended use.

A copy of Schedule 8 of the Section 106 Agreement is provided in **Appendi B**.

Bac ground

Objectives of the Redevelopment Remediation Works

Part One of Schedule 8 of the Section 106 Agreement outlines the purpose and objectives of the Redevelopment Remediation Works as follows:

- The purpose and objectives of the Redevelopment Remediation Works are the carrying out of all such remedial action over and above that actually carried out as part of the RAP Works that is necessary in order to make each part of the Property suitable for its Intended Use. A part of the property will only be suitable for its Intended Use if and when the Phase Works Completion Date (PWCD) is declared in respect of that part of the Property.
- This objective will be deemed to be met for the purposes of the Section 106 Agreement and the RMA on the date specified in a notice from CDL declaring the PWCD for the Phase. The PWCD will be declared once CDL is satisfied that the remediation necessary for the specified Intended Use for the Phase has been completed.

Part Two of Schedule 8 of the Section 106 Agreement places a number of obligations on SMD as the Developer. The main obligations pertinent to this Phase are as follows:

- The Developer shall carry out or procure the carrying out of all Remedial Action necessary in order to achieve the purpose and objective as outlined in Part 1 of Schedule 8 of the Section 106 Agreement. The design and specification of any remediation shall take account of the principles and objectives and the design assumptions for the RAP Works and shall not prejudice the achievement and future sustainability of these principles and objectives.
- In order to determine the need for Remedial Action in the first place it is necessary to undertake an appropriate site assessment. This assessment needs to take account of the site history, potential and/or actual measured extent of contamination and the associated implied risk. Only by developing a thorough understanding of both potential and actual contamination will it be possible to confirm that all necessary Remedial Action likely to have been completed. This obligation should be satisfied through completion of an appropriate desk study and intrusive investigation.
- The RBSLs set out in Tables 1 and 2 [in Schedule 8 of the Section 106 Agreement] and the aesthetic criteria, remediation quality and scope (including the depth below Final Finished Level (FFL) to which quality standards are achieved), as the same may be varied

in accordance with this Schedule 8, shall be achieved for each part of the Property at the minimum validation frequencies set out in Clause 8 of Part 3 (as applicable depending upon whether such part of the Property is intended for use as residential, commercial or recreational land) as a minimum base level standard.

It should be noted that SMD has procured the services of Atkins Ltd. to assist in discharging the above obligations.

Tables 1, 2, 3 and 4 from Schedule 8 of the Section 106 Agreement are reproduced below for reference.

Table Summary of Soil RBSLs

<i>Contaminant</i>	<i>Land-Use Specific Soil RBSL Surface to 1m below FFL (mg/kg)¹</i>			<i>Land-Use Specific RBSL Soil below 1m depth (mg/kg)</i>		
	<i>Residential</i>	<i>Commercial</i>	<i>Recreational</i>	<i>Residential</i>	<i>Commercial</i>	<i>Recreational</i>
<u>METALS & METALLOIDS</u>						
Arsenic	64	500	64	-	-	-
Cadmium	2.6	1400	2.6	-	-	-
Chromium	130	5000	200	-	-	-
Mercury	1	480	1	-	-	-
Nickel	50	5000	75	-	-	-
Selenium	3	8000	3	-	-	-
Lead	337	750	337	-	-	-
Vanadium	416	16000	640	-	-	-
Copper	200	-	200	-	-	-
Zinc	478	-	478	-	-	-
<u>ORGANIC SPECIES</u>						
Benzene	0.12	5	13	0.4	5	48
Benzo(a)pyrene ²	0.9	29	0.9	none	none	none
Toluene	36	1160	8110	52	389	none
Ethylbenzene	41	122000	4740	140	none	none
Xylenes	32	121000	7940	58	none	none
1,2-Dichloroethane	0.04	2	4.5	0.1	0.65	6
Dichloromethane	5	1650	241	84	665	6220

<i>Contaminant</i>	<i>Land-Use Specific Soil RBSL Surface to 1m below FFL (mg/kg)¹</i>			<i>Land-Use Specific RBSL Soil below 1m depth (mg/kg)</i>		
	<i>Residential</i>	<i>Commercial</i>	<i>Recreational</i>	<i>Residential</i>	<i>Commercial</i>	<i>Recreational</i>
Tetrachloroethene	11	1050	641	34	368	1780
Trichloroethene	1	84	193	2	28	269
Vinyl Chloride	0.01	4	0.7	0.04	1.6	16
1,2 Dichloroethene	4	273	632	7	91	881
1,1,1-Trichloroethane	154	577000	27900	160	3250	none
TPH Aromatic EC>C7-C8	125	1840	21337	146	617	none
TPH Aromatic EC>C8-C10	94	913	4025	257	547	none
TPH Aromatic EC>C10-C12	118	26515	4589	1394	none	none
TPH Aromatic EC>C12-C16	131	64875	4799	none	none	none
TPH Aromatic EC>C16-C21	82	51449	3639	none	none	none
TPH Aromatic EC>C21-C35	1130	51449	3639	none	none	none
TPH Aliphatic EC>C6-C8	8335	8517587	606191	none	none	none
TPH Aliphatic EC>C8-C10	112	158890	12075	158	none	none
TPH Aliphatic EC>C10-C12	3204	163360	12094	none	none	none
TPH Aliphatic EC>C12-C16	4513	169032	12117	none	none	none
TPH Aliphatic EC>C16-C21	94174	3429944	242573	none	none	none
TPH Aliphatic EC>C21-C35	94820	3429944	242573	none	none	none
Total TPH (Phase 1) ³	1717	81413	9061	9182	81956	None
Total TPH (Process Area) ³	2601	44344	10830	4098	35014	None
Total TPH (North Tank Farm) ³	1104	25875	9419	3802	13974	None
Total TPH (South Tank Farm) ²	1015	37230	6349	2792	34797	None
<u>ASBESTOS</u>						
Sum of all Types of ACM	200	300	200	200 ⁴	-	-

otes

“-” value not applicable to scenario

“none” RSBL value exceeds soil saturation limits and free phase assessment appropriate

- 1 Lower value of human health RBSL or Soil Code value if higher than background LCL value (applicable to metals & metalloids only)
- 2 Benzo(a)pyrene RBSL to be compared against sum of 16 US EPA Priority List PAHs using Toxicity Equivalence approach
- 3 'Total' TPH RBSL derived for an area of development, based on individual RBSLs provided and available mass fraction TPH data in soil at time of derivation, using the inverse weighted average approach
- 4 Refer to Section 106 Agreement for specification of relevant depth ranges

Table Summary of RBSLs for groundwater

<i>Contaminant</i>	<i>Land-Use Specific RBSL (mg/l)</i>		
	<i>Residential</i>	<i>Commercial</i>	<i>Recreational</i>
TPH Aliphatic EC>C6-C8	none	none	none
TPH Aliphatic EC>C8-C10	none	none	none
TPH Aliphatic EC>C10-C12	none	none	none
TPH Aliphatic EC>C12-C16	none	none	none
TPH Aliphatic EC>C16-C21	none	none	none
TPH Aliphatic EC>C21-C35	none	none	none
TPH Aromatic EC>C7-C8	20	97	none
TPH Aromatic EC>C8-C10	22	none	none
TPH Aromatic EC>C10-C12	none	none	none
TPH Aromatic EC>C12-C16	none	none	none
TPH Aromatic EC>C16-C21	none	none	none
TPH Aromatic EC>C21-C35	none	none	none
Benzene	0.7	6	198
Benzo(a)pyrene	none	none	none
Toluene	47	229	none
Ethylbenzene	102	506	none
Xylenes	43	607	none
1,2-Dichloroethane	0.2	0.82	45
Dichloromethane	150	624	none
Tetrachloroethene	22	115	none
Trichloroethene	2.6	13	813

<i>Contaminant</i>	<i>Land-Use Specific RBSL (mg/l)</i>		
	<i>Residential</i>	<i>Commercial</i>	<i>Recreational</i>
Vinyl Chloride	0.06	0.3	18
1,2-Dichloroethene	15	68	none
1,1,1-Trichloroethane	193	989	none

Notes

“none” theoretical RBSL greater than solubility limit

Table Scale of Aesthetic Criteria

<i>Class</i>	<i>Visual</i>	<i>Olfactory</i>
0	No visible staining of soil, no visible suspect ACM	No detectable odour on soil
1	Occasional staining of soil, no visible suspect ACM	Faint odour on soil
2	Frequent staining of soil	Distinct but not strong odour on soil
3	Occasional heavy staining of soil	Strong odour on soil
4	Heavy staining of soil	Strong odour discernable in ambient air
5	Visible hydrocarbon product	Overwhelming Odour

Notes

Visible suspect ACM refers to asbestos containing material visible to the naked eye which a reasonable and prudent person used to managing asbestos may suspect to be asbestos containing.

Table Minimum Validation Testing Frequencies

<i>Testing for the Validation Suite at the following frequency:</i>	<i>Shallow Soils (Residential <1m FFL)</i>	<i>Deeper Soils (Residential >1m below FFL)</i>	<i>Soils (Commercial all relevant depths)</i>
Imported quarried material	1 per 500m ³ ex situ, composite of 5 regular sub-samples	1 per 1000m ³ ex situ, composite of 5 regular sub-samples	1 per 1000m ³ ex situ, composite of 5 regular sub-samples
Imported soil from verified greenfield site	1 per 250m ³ ex situ, composite of 5 regular sub-samples	1 per 500m ³ ex situ, composite of 5 regular sub-samples	1 per 500m ³ ex situ, composite of 5 regular sub-samples
Imported soil from characterised brownfield site ¹	1 per 25m ³ ex situ, composite of 5 sub-samples	1 per 50m ³ ex situ, composite of 5 sub-samples	1 per 100m ³ ex situ, composite of 5 sub-samples

<i>Testing for the Validation Suite at the following frequency:</i>	<i>Shallow Soils (Residential <1m FFL)</i>	<i>Deeper Soils (Residential >1m below FFL)</i>	<i>Soils (Commercial all relevant depths)</i>
0.5-1m below FFL in-situ	Regular grid of 1 per 50m ² , sample over 0.5m depth	n/a	Regular grid of 1 per 400m ² , sample over 0.5m depth
>1m below FFL in-situ	n/a	Regular grid of 1 per 100m ² , sample over 1m depth	Regular grid of 1 per 400m ² , sample over 0.5m depth
Stockpiled excavated site materials for re-use	1 per 50m ³ ex situ, composite of 5 sub-samples	1 per 100m ³ ex situ, composite of 5 sub-samples	1 per 400m ³ ex situ, composite of 5 sub-samples
Face of remedial excavations <1m deep	1 per 10m, minimum of 1 per face, worst case VO sample	n/a	1 per 15m, minimum of 1 per face, worst case VO sample
Face of remedial excavations >1m deep	n/a	1 per 10m ² , minimum of 1 per face, worst case VO sample	1 per 15m ² , minimum of 1 per face, worst case VO sample
Along redundant service excavations	1 per 20m of trench, worst case VO sample	1 per 20m of trench, worst case VO sample	1 per 20m of trench, worst case VO sample
Soil treated ex-situ and homogenised	1 per 200m ³ , composite of 5 regular sub-samples	1 per 200m ³ , composite of 5 regular sub-samples	1 per 500m ³ , composite of 5 regular sub-samples

otes

- “1” Validation suite to reflect prior use of the originating brownfield site and the design and purpose of the relevant area of Coed Darcy.
- “VO” Visual/olfactory (i.e. aesthetic) observation

Remediation Action Plan (RAP) Works

In addition to meeting the requirements of the Redevelopment Remediation Works, the Developer must also complete a series of statutory remedial works which are referred to as the RAP Works. The requirements for the RAP Works are outlined in Schedule 7 of the Section 106 Agreement.

It is intended that this report, which is the RRWCC, will be complemented by a RAP Works Completion Statement (RAPWCS) in order to provide the information required by CDL to enable the PWCD to be declared.

Details of the scope of works and associated validation completed to satisfy the RAP requirements pertinent to this Phase are reported separately in RAPWCS ref. 49310747/BRRP00074/Cert 31a.

Information Sources

A summary of the information sources that the Monitor has been provided with in relation to Phase 31 is provided below in **Table** . Unless otherwise stated, the Monitor has relied solely

on these information sources as the basis for issuing this RRWCC. Upon a review of the information sources, in the Monitor's reasonable professional opinion, such information and the manner in which it was obtained appears sufficiently up to date, reliable and robust to justify such reliance. No verification of the data has been completed by the Monitor unless noted in the following sections.

Electronic copies of the information sources are provided in **Appendi C**.

Table Information Sources

<i>Ref.</i>	<i>Document Reference</i>	<i>Format</i>	<i>Title</i>	<i>Author</i>	<i>Date Received</i>
1	39991-044-785-FR1287	Report	Whole Site Investigation BP Llandarcy Refinery	URS	August 2005
2	44382742/BRRP0001	Report	BP Llandarcy Refinery Desk Study	URS	July 2007
3	5041216-REM-RPT-000216	Report	Derivation of Remediation Target Criteria (Revision 3)	Atkins	January 2010
4	5041216-REM-RPT-000373	Report	Central Processing Area East Controlled Waters Risk Assessment	Atkins	January 2012
5	-	Technical Note	Residential Phase 2 – Notes for Monitor Agreement	Atkins	July 2013
6	-	Technical Note	Residential Phase 2 – Engineer's Brief Reclamation/Remediation Works	Atkins	July 2013
7	5041216-PLOTS-RPT-000992	Report	Geo-Environmental Assessment and Outline Remediation Strategy – Proposed Residential Phase 2	Atkins	July 2013
8	-	Email	Email correspondence with the Monitor, NPTCBC and Atkins re. soils verification	URS, NPTCBC, Atkins	September 2013
9	7389/SK007A	Drawing	Phase 2A Development Layout	Roberts Limbrick Architects	September 2013
10	5041216-PH2D-TN-1090	Technical Note	Response to Monitor Comments RFI119	Atkins	October 2013
11	-	Email	Email correspondence between the Monitor and Atkins re. validation frequencies	URS, Atkins	January 2014
12	-	Email	Email correspondence between the Monitor and Atkins re. asbestos testing	URS	January 2014
13	SLS/NW/2259	Letter	Phase Declaration Letter	St. Modwen	November 2013
14	5041216-PLOTS-RPT-1284	Report	St. Modwen Homes (Monitor Phase 31) Validation Report Revision 1	Atkins	January 2015

<i>Ref.</i>	<i>Document Reference</i>	<i>Format</i>	<i>Title</i>	<i>Author</i>	<i>Date Received</i>
15	5041216-PLOTS-TN-1313	Technical Note	Response to Monitor RFI 128	Atkins	January 2015
16	5041216-PLOTS-TN-1316	Technical Note	St. Modwen Homes Plot Fill Materials	Atkins	January 2015

Requests for Information RFIs Issued by the Monitor

The Monitor has raised two RFIs in relation to Phase 31, as summarised in **Table** below. Copies of the RFIs are provided in **Appendix** . Copies of the responses received are included in the information sources provided in **Appendix C**.

Table RFIs

<i>RFI Ref.</i>	<i>Title</i>	<i>Associated Atkins Document</i>	<i>Date Raised</i>	<i>Complete</i>	<i>Comments</i>
119	Review of Atkins' Notes for Monitor Agreement, Engineer's Brief and Remediation Strategy for the Residential Phase 2	Notes for Monitor Agreement Engineer's Brief Reclamation/Remediation Works Geo-Environmental Assessment and Outline Remediation Strategy	August 2013	Yes	-
127	Review of Atkins' Validation Report for Monitor Phase 31	St. Modwen Homes (Monitor Phase 31) Validation Report	December 2014	Yes	-

DESCRIPTION OF THE REMEDIAL ACTION

The following section provides a description of the remedial action that has been carried out for the purposes of completing the Redevelopment Remediation Works in relation to Phase 31. This section of the report is structured as follows:

1. Site Assessment
2. Remediation Strategy
3. Redevelopment Remediation Works
4. Validation

Site Assessment

As discussed above, the Section 106 Agreement requires the Developer to undertake an appropriate site assessment which needs to take account of the site history, potential and/or actual measured extent of contamination and the associated implied risk. The Section 106 Agreement also states that only by developing a thorough understanding of both potential and

actual contamination will it be possible to confirm that all necessary Remedial Action is likely to have been completed. This obligation should be satisfied through completion of an appropriate desk study and intrusive investigation.

Desk Study

It can be seen from the list of information sources provided in **Table** that Atkins has prepared a number of reports and technical notes examining Phase 31. It is evident that Atkins has reviewed the information collected during previous site investigations and desk studies to develop an understanding of both potential and actual contamination. The following is of note.

Phase 31 is located within the former processing area in the central part of the former refinery. With reference to the historical maps provided in **Appendix E** it can be seen that various refinery infrastructure was situated within Phase 31, as follows:

- East-west pipe route which passed through the centre of Phase 31;
- Furfural solvent extraction unit which was located in the southern part of Phase 31;
- Gas oil heating unit which was located in the southern part of Phase 31;
- Methyl Ethyl Ketone (MEK) de-waxing and re-crystallisation unit which was located in the southern part of Phase 31;
- Construction department and electrical department offices that were located in the northern part of Phase 31.

Furthermore a Crude Distillation Unit (CDU), sump separator and pump house and workshops were situated directly to the north of Phase 31. A further sump separator and pump house was also situated directly to the east of Phase 31 and encroached some way into Phase 31. This sump separator and pump house have previously been designated as a Special Process Area, indicating a potentially higher risk of contamination.

With regards geology Atkins reports that the British Geological Survey Sheet for Swansea (Sheet 247) Drift Edition indicates that this part of the refinery is underlain by Glacial Drift (undifferentiated) overlying Carboniferous, Upper Pennant Measures. Solid strata are suggested to dip towards the north. There are no recorded faults shown to cross beneath Phase 31.

With regards hydrology, Atkins reports that Phase 31 lies within the catchment of the River Neath, which is situated approximately 1km east of the site. The underlying sandstones are classified as a Secondary A Aquifer, which are defined by the Environment Agency as 'permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers'.

Groundwater within Phase 31 is generally situated within the underlying bedrock and flow is considered to be towards the north/north east. This is consistent with the general topography of this area.

Intrusive Investigations

A number of intrusive investigations were carried out by URS pre 2004 as reported in URS' site investigation report FR1287 (Information Source 1). These investigations included 17 trial pits and six boreholes within Phase 31.

In 2011 Atkins also undertook a site investigation which included the excavation of a further 10 trial pits within the southern part of Phase 31, otherwise referred to as the middle terrace. This

site investigation was carried out after the removal of historic structures and a turnover of the soils within this area.

Details of these site investigations are presented in Atkins' remediation strategy (Information Source 7) and Atkins' validation report (Information Source 14).

Logs from the trial pits and boreholes indicate ground conditions to be consistent with the reported geology discussed above. Generally the soils comprised made ground, underlain with glacial soils over sandstone bedrock. The bedrock was generally shallow, being exposed at some locations, but dropped to approximately 3.5m below ground level towards the north of Phase 31.

Land contamination is reported to have been evident within the soils in the form of staining, odours and localised free product. Laboratory analysis identified inorganic metals, polyaromatic hydrocarbons (PAH) and hydrocarbons in excess of the adopted thresholds for a residential end use. Asbestos was also reported to have been encountered at one location.

Atkins reports that monitoring information from the wells within Phase 31 indicated free product within one of the boreholes on a single monitoring occasion. No further free product was recorded at this location or within the other wells within this area.

Groundwater across Phase 31 was generally found to lie within the underlying bedrock with some localised perched groundwater within the shallow soils.

As noted in Section 2.1.1 above one of the sump separators and pump houses situated on the eastern boundary of Phase 31 were previously designated as a Special Process Area, indicating a potentially higher risk of contamination. Atkins reports that the separator comprised a concrete structure which was demolished. The underlying soils were also removed to bedrock and it is reported that there was no significant evidence of contamination.

Remediation Strategy

Schedule 8 of the Section 106 Agreement sets out the minimum remedial action required depending on the intended use and the groundwater regime. As already noted, the intended use for Phase 31 has been declared as residential. Also as discussed above, groundwater in Phase 31 is primarily in rock i.e. there is limited soil material over bedrock, little perched groundwater is present in that soil and the water table is normally first encountered in bedrock. Therefore, the minimum remedial action required for Phase 31 detailed below.

- All oil saturated soil should be removed.
- All soils must be remediated so as to meet the RBSLs for TPH, BTEX and PAHs at the relevant depth relative to FFL and the aesthetic criteria Class 2 or better at greater than 1m below FFL.
- The aesthetic quality of soils shall be Class 1 or better for at least the first metre below FFL.
- Soils where there is visible ash and clinker, or metal concentrations above RBSLs, are to be removed so that none is retained within the first metre below FFL in garden areas.
- Where it is not practicable to address groundwater contamination within bedrock this must be controlled, e.g. where seeps, sheens and iron staining discharge from the bedrock. Acceptable methodologies for remediation may include, but are not limited to, the use of land drainage via interceptors. Control measures should result in no visible discharge at surface and little or no odour observable.
- All soil potentially containing dispersed asbestos fibres or visible ACM must be removed or remediated to meet in bulk, considering both dispersed fibres and pieces of ACM, the

appropriate ACM RBSL, or to meet the requirements of relevant Environmental Authorities, whichever is the more conservative.

In addition to the minimum remedial action requirements outlined above, Schedule 10 of the Section 106 Agreement states that:

- All buried services shall be removed and the routes of those services shall be backfilled with material no more permeable than the general material in the vicinity.
- Wherever there is a risk that following construction of the Urban Village groundwater or organic phase liquid may contaminate soils within the top one metre below FFL such that any of the relevant RBSLs and/or aesthetic criteria specified in Schedule 8 of the Section 106 Agreement may be exceeded, the Developer shall ensure that all necessary steps are taken to mitigate these risks. Suitable measures may include, but not be limited to, the installation of land drains and/or the raising of the site ground levels such that groundwater will not be able to influence shallow soil quality.
- The final 0.5m of materials shall comprise quality controlled imported fill materials suitable for the use to which they are to be put and of better quality than all RBSLs for the relevant end-use and meeting aesthetic type 0 for residential use and type 1 or better for commercial use as specified in **Table** of this report.

Based on the above requirements and the findings of the site assessment discussed in Section 2.1 of this report, Atkins prepared a remediation strategy (Information Source 7). The remediation strategy is summarised as follows:

- Removal of oil saturated soils and/or free product;
- Removal of visible ash and clinker;
- Removal of soils with a visual/olfactory rating exceeding Class 2 (as defined in **Table** of this report);
- Removal of remaining structural remnants including brickwork, concrete and other obstructions, which will involve a general turnover of soils which, given the shallow nature of bedrock, will result in the visual inspection of the majority of soils;
- Removal of redundant services, including drainage;
- Removal of asbestos contaminated materials;
- Removal of other contamination hotspots;
- Re-profiling of soils to achieve a stable, free drainage surface; and
- Validation and verification via the excavation of trial pits and the analysis of soil samples.

The Monitor considered the above approach to be acceptable in accordance with the requirements of the Section 106 Agreement.

Redevelopment Remediation works

The redevelopment remediation works that have been completed for Phase 31 are described in Atkins' validation report (Information Source 14) and can be summarised as follows:

- Clearance of above ground structures, including a sump separator and surface hardstanding;

- Removal of below ground structures and removal of unsuitable soils. This involved the excavation of soils to expose bedrock across the Phase;
- Visual and olfactory validation of the exposed bedrock;
- Placement of imported soils;
- Placement of shallow soils across part of Phase 31;
- Validation trial pitting;
- Hotspot removal and validation;
- Additional validation trial pitting and sampling.

The Monitor is satisfied that the works that have been carried out are in accordance with the remediation strategy outlined above and satisfy the requirements of the Section 106 Agreement.

Observations During the Redevelopment Remediation Works

A summary of the observations made by the Monitor during the Redevelopment Remediation Works is provided in **Table 1**.

Table 1: Monitor's Observations during the Redevelopment Remediation Works

DATE	OBSERVATIONS
14-Mar-2011	Preliminary site clearance works were observed. Underlying soils were inspected where exposed. Visual and olfactory observations indicated the presence of contaminated soils.
22-Jun-2011	Site investigation trial pits observed. Again, visual and olfactory evidence suggested the presence of contaminated soils.
24-Jul-2013	The remediation works had commenced. Soils were being excavated to expose the underlying bedrock. The soils were being segregated at source based on a visual/olfactory assessment. Buried structures and pipework were being removed. Some evidence of contamination was noted, comprising stained soils, oily seepages, sheens and olfactory evidence – generally 3s and 4s. A haul road was being constructed using crushed rock from elsewhere on site, the ground below which is reported to have been validated already.
8-Aug-2013	Works were continuing to excavate soils and segregate at source based on a visual/olfactory assessment. Observations suggested that shallow soils were not heavily impacted, but deeper soils below the first 1m to 2m were less acceptable. A visual inspection of the stockpile of excavated material deemed to be acceptable for re-use confirmed Atkins' assessment, in that no staining was observed and no odour was noted. The material comprised a clayey gravel. Materials deemed to be unacceptable were being taken to a treatment pad elsewhere on site. Atkins reported that some pipelines had been removed and some buried structures had been encountered. Some sheens were observed on what appeared to be surface water run-off, rather than intercepted groundwater. No free product was observed.
15-Aug-2013	The remediation works were progressing along the Road 50 corridor. Ground conditions were observed to be generally similar to those described previously.

DATE	OBSERVATIONS
28-Aug-2013	The remediation works were continuing towards the eastern end of Road 50, with some excavations starting to be backfilled. Excavations were observed within the eastern area adjacent to the Persimmon plots where retaining walls were being removed. Olfactory observations indicated some odours, although not overly strong. No evidence of free product was observed. A number of ochreous seepages were noted.
12-Sep-2013	Remediation excavations were observed as well as backfill operations. Ground conditions were similar to those described previously. Some ochreous seepages were observed but no evidence of free product was noted.
15-Oct-2013	Remediation excavations were progressing to the north of Road 50 as well as within the proposed public open space area. Bedrock had been exposed and benched. The exposed rock was inspected and no signs of significant contamination were observed (visual/olfactory 1/1 at worst). Backfilling works were observed to be continuing adjacent to Road 50.
21-Nov-2013	The excavation works across Phase 31 appeared to have been largely completed. No further free product or seepages had been observed. Some light staining of bedrock was observed (visual/olfactory 2/0) and consideration was to be given to the further breakout of road despite its significant depth to FFL.
04-Dec-2013	Backfilling works were observed to be well progressed along the Road 50 corridor and the residential plots to the south of this. Observations indicated the backfill material to be acceptable (visual/olfactory 0/0).
11-Dec-2013	Backfilling works were observed across Phase 31.
09-Jan-2014	Discussions indicated that the Contractor was preparing to import soils from greenfield and brownfield sites for the top 0.5m up to FFL across part of Phase 31. It was stated that the soils would be validated within a stockpile prior to placement.
22-Jan-2014	It was reported that some validation samples had indicated the presence of asbestos. These samples had been scheduled for quantitative assessment, the results from which were awaited.
25-Feb-2014	It was reported that the laboratory results from the quantitative asbestos assessment had confirmed some RBSL/RTC exceedences. It was confirmed that the materials would be removed and new validation trial pits would be excavated.
20-Mar-2014	Filling of the top 0.5m was observed within the eastern part of Phase 31 where it ties into the Persimmon plots.
21-Ocr-2014	Validation trial pitting observed.
13-Nov-2014	Validation trial pitting observed.
04-Dec-2014	Validation trial pitting observed. Atkins stated that there was a visual/olfactory hotspot within Phase 31 that would be removed.

A selection of photographs taken during the remediation works is provided in **Appendi F**.

In summary, the Monitor is satisfied that the works appear to have been carried out in accordance with the Remediation Strategy and the requirements of the Section 106 Agreement.

Validation

With reference to the minimum remedial action discussed in Section 2.2 of this report, the following sections aim to demonstrate whether or not the requirements of the Section 106 Agreement have been satisfied.

Aesthetic Criteria

The Section 106 Agreement requires all soils to be remediated such that the aesthetic quality of soils shall be Class 1 or better for at least the first metre below FFL. The aesthetic quality of soils greater than 1m below FFL must be remediated so as to meet the aesthetic criteria Class 2 or better. These aesthetic criteria are defined in **Table** in this report.

Atkins reports that deep fill within Phase 31 comprised site-won materials, either excavated site materials stockpiled for re-use or excavated soil treated ex-situ and homogenised. These materials were segregated at source based on a visual/olfactory assessment with the materials either being stockpiled as being suitable for deep residential soils, or otherwise transported to a treatment area elsewhere on site. Those materials deemed suitable for use as backfill were re-used within Phase 31.

Shallow fill, which has been placed across only part of Phase 31, comprised soils imported from a brownfield site. This was monitored during placement as well as via validation trial pits excavated following placement of the material. Atkins reports that no concerns were noted and that all observations indicated an aesthetic criteria of 0/0.

In addition to a visual/olfactory assessment of the placed soils, Atkins also undertook a visual/olfactory assessment of the exposed bedrock across Phase 31. Atkins identified four potential areas of concern where evidence of hydrocarbon contamination was observed. However, further removal of materials and subsequent monitoring suggested that the observations were not representative of a significant source of free product. Following these works Atkins reports visual/olfactory scores generally of 0 with some localised 1s. Where bedrock was exposed which will fall within the top 1m of the development, a more detailed visual/olfactory assessment was undertaken by Atkins. All observations returned a visual/olfactory scoring of 0/0.

In summary, the Monitor is satisfied that the soils within Phase 31 meet the necessary aesthetic criteria as specified in the Section 106 Agreement.

Removal of Oil Saturated Soils

The Section 106 Agreement requires that all oil saturated soil should be removed. As noted above, all soils down to bedrock were excavated and segregated based on a visual/olfactory assessment. Any oil saturated soils that may have been identified during these works were transferred to a treatment area elsewhere on site for further remediation works. Also as noted above, some evidence of hydrocarbon contamination was observed in four locations at the base of the remediation excavations. Following the removal of further material and subsequent monitoring it was concluded that the observations were not representative of a significant source of free product.

In summary, the Monitor is satisfied that oil saturated soils have been removed from Phase 31 in accordance with the requirements of the Section 106 Agreement.

Soil Chemical Quality

The Section 106 Agreement requires that all soils must be remediated so as to meet the RBSLs for TPH, BTEX and PAHs at the relevant depth relative to FFL.

Given that Phase 31 represents a residential phase where groundwater is primarily in rock, the relevant depth to FFL, as defined in the Section 106 Agreement, is the level at which bedrock

is encountered. This effectively means that all soils from bedrock to FFL must meet the specified RBSL thresholds.

In addition to the RBSLs, in order to assess the significance of any reported contaminant concentrations, validation results have also been screened against Remediation Target Concentrations (RTCs) which have been developed by Atkins. The RTCs are intended to be health protective for a low density residential end-use. It has been agreed previously with NPTCBC that where the RTCs are numerically lower than the RBSLs, the RTCs shall be used. A summary of the relevant RBSLs and RTCs is presented in **Appendix**.

It should be noted that the RBSL/RTC thresholds are depth dependant, so the following sections consider deep soils (those soils greater than 1m below FFL) and shallow soils (those soils less than 1m below FFL) separately. It should also be noted that the ground levels following the completion of the remediation works represent FFL minus 0.5m in the eastern part of Phase 31 where shallow fill been placed and FFL minus 1m elsewhere.

Chemical Quality of Deep Soils >1m Below FFL

As described in Section 2.3 of this report, all soils across Phase 31 were excavated to expose the underlying bedrock. Unacceptable soils were removed and replaced with suitable fill which comprised site-won materials. This either comprised excavated soils from Phase 31 that had been segregated and stockpiled for re-use or excavated soils that had been treated ex-situ and homogenised.

Atkins reports that the homogenised materials were mixed and turned within windrows using mechanical excavators over a period of months, undergoing low grade weathering and bioremediation. Following this, the materials were inspected and sampled to confirm their suitability for re-use.

Chemical testing of the deep soils indicated three exceedences against the RBSL/RTC thresholds, as follows:

- Benzene 0.438 mg/kg in P1TP41 at 1.6m bgl against an RBSL/RTC of 0.4 mg/kg
- Trichloroethene 0.262 mg/kg in P1TP97 at 3.8m bgl against an RBSL/RTC of 0.188 mg/kg
- Naphthalene 2.88 mg/kg in P1TP57 at 0.2m bgl against an RBSL/RTC of 2.8 mg/kg

The benzene exceedence was considered to be marginal at 438µg/kg against a threshold of 400µg/kg. Other samples within the vicinity of this exceedence appear to have been acceptable, notably those samples above and below the exceedence. Given the depth of the exceedence at 2.6m below FFL, Atkins considered it appropriate to leave this exceedence in situ. The Monitor considers this to have been acceptable.

The trichloroethene exceedence was situated within an area that is proposed as a public open space. Therefore, given the depth of the exceedence at 4.3m below FFL, Atkins considered that it would be acceptable for this material to remain in situ. Again, the Monitor is satisfied that this was appropriate.

Soils within the vicinity of the naphthalene exceedence were excavated and removed.

Atkins also reports three exceedences of TPH C8-C10 (aliphatic) within one of the validation trial pits. However, this trial pit was situated beneath a proposed road, so Atkins re-screened the results against commercial thresholds and the materials were deemed to be acceptable. The Monitor considers this to be appropriate.

In summary the Monitor is satisfied that the deep soils within Phase 31 meet the necessary chemical quality as specified in the Section 106 Agreement.

Chemical Quality of Shallow Soils 1m to 0.5m Below FFL

Atkins reports that soils have been imported from four sources to provide fill materials for depths from 1m to 0.5m below FFL. It is understood that these soils were imported in two stages. Firstly, soils described as red marl, were imported and placed in the eastern part of Phase 31. Secondly, soils from three greenfield and brownfield sources were imported as fill for the western part of Phase 31, although these soils are yet to have been placed.

In respect of the red marl, Atkins reports that approximately 4,600m³ of soils were imported from Parc Derwen in Bridgend. The soils were validated by means of a series of validation trial pits after the material had been placed. Atkins reports that laboratory analysis indicated a number of exceedences against the RBSL/RTC thresholds for metals, PAH, TPH and benzo(a)pyrene. Eleven hotspots were identified and the soils were excavated and removed and replaced with suitable soils.

However, validation of the hotspot excavations indicated four further RBSL/RTC exceedences at three locations, as follows:

- Cadmium 5.5 mg/kg in SMH176N against an RBSL/RTC of 2.6 mg/kg
- Naphthalene 1.2 mg/kg in SMH160S against an RBSL/RTC of 0.585 mg/kg
- Benzo(a)pyrene 3.6 mg/kg in SMH89E against an RBSL/RTC of 0.9 mg/kg
- Benzo(a)pyrene 1.2 mg/kg in SMH160S against an RBSL/RTC of 0.9 mg/kg

Two of these locations, SMH160 and SMH176, are reported to be located within an area of proposed open space which is to be used predominantly for footpaths and planting areas. Given the reduced risk, Atkins considers the material be suitable for retention. The Monitor is satisfied that this is appropriate.

The third location, SMH89, which had a Benzo(a)pyrene exceedence, indicated consistently elevated results for other determinands, albeit below the RBSL/RTC thresholds, suggesting that the material may not be representative of the imported soils. Atkins suggests that given the consistent soil descriptions, the material can be considered to be heterogenic and therefore the use of statistical analysis, which indicates that the soils are acceptable for retention, is appropriate. The Monitor is satisfied that this exceedence is isolated and does not to pose a significant risk to end users of the final development.

In respect of the second consignment of soils intended for placement on the western part of Phase 31, Atkins reports that approximately 5,005m³ of soils were imported from Cimla, Lougher and Kenfig. These materials have been validated within the stockpiles and all soils were found to be in compliance with the RBSL/RTC thresholds. As noted above, these materials are yet to have been placed.

In summary, the Monitor is satisfied that the shallow soils within Phase 31 meet the necessary chemical quality as specified in the Section 106 Agreement.

Top 0.5m of Quality Controlled Imported Fill

The Section 106 Agreement requires that a minimum thickness of suitable garden soils are to be provided in residential areas, soils for landscaping in public and commercial areas and sub-base for hardsurfaced areas which shall comprise a minimum of 0.5m of quality controlled imported fill materials suitable for the use to which they are to be put and of better quality than all RBSLs for the relevant end-use and meeting aesthetic type 0 for residential use and type 1 or better for commercial use.

Atkins states that FFLs are yet to be confirmed but that the ground levels following the completion of the remediation works represent FFL minus 0.5m in the eastern part of Phase 31 where the red marl has been placed and FFL minus 1m elsewhere.

As has been agreed with the Local Authority, the import of soils within the top 0.5m will be controlled via planning conditions given that the Monitor will have no formal on-going role to control subsequent works once the RRWCC is issued.

It should be noted that if there is any significant change in the development proposals or the proposed FFLs then reconsideration of the information contained within this report may be necessary. Notwithstanding this, it is understood that the redevelopment remediation works that have been completed are aimed at being conservative to allow for minor alterations to FFLs.

Removal of Ash, Clinker and Metals

The Section 106 Agreement requires that visible ash and clinker and metal concentrations above RBSLs are to be removed from soils so that none is retained within the first 1m below FFL in garden areas.

As noted above, backfill within the top 1m has been completed only within part of Phase 31. No ash and clinker was reported to have been observed within the soils.

However as noted above, some exceedences against metals were identified. These hotspots are reported to have been removed such that the top 1m of material meets the necessary thresholds as specified in the Section 106 Agreement.

From the soil descriptions provided, and the validation testing carried out, the Monitor is satisfied that the soils within the top 1m below FFL do not contain visible ash and clinker or metals above the RBSL/RTC thresholds.

Asbestos

The Section 106 Agreement requires that all soils potentially containing dispersed asbestos fibres or visible ACM must be removed or remediated to meet in bulk, considering both dispersed fibres and pieces of ACM, the appropriate ACM RBSL, or to meet the requirements of relevant Environmental Authorities, whichever is the more conservative. The Environmental Authorities have not declared any more stringent requirements and therefore the RBSLs/RTCs shall apply.

Whereas under the scenario defined in the Section 106 Agreement for a residential phase where groundwater is primarily in rock there is no minimum depth to which this requirement must be achieved, for the scenario where groundwater is in soil, the above requirement must be met to a minimum depth of 2m below FFL. On previous Phases it has been agreed that it is appropriate for this minimum depth to also apply to residential phases where groundwater is in rock.

Atkins reports that for the deep soils a total of 386 samples were screened for asbestos. Asbestos was reportedly detected in 223 of the samples, being reported as trace in 30 of these samples. Quantitative assessment was undertaken on the remaining samples, although with reference to the tables provided in Appendix F of Atkins' validation report (Information Source 14), it appears that where asbestos was detected in more than one sample from the same trial pit then only one of the samples was sent for quantitative assessment. Quantitative assessment appears to have been carried out on 149 samples.

Five exceedences in excess of the threshold of 200ppm were identified. Four of the exceedences occurred within the top 2m below FFL and were therefore excavated and removed as hotspots. No asbestos was identified in any of the validation samples relating to these exceedences.

The imported soils that were placed within the top 1m below FFL were also screened for the presence of asbestos.

187 samples collected from the red marl were screened for asbestos. Asbestos was reportedly detected in 11 of the samples, being reported as trace in two of these samples. Quantitative assessment was undertaken on the remaining nine samples and all results fell below the RBSL/RTC threshold of 200ppm and were therefore considered acceptable for retention.

144 samples were collected from the imported soils that are intended for placement in the western part of Phase 31. Asbestos was reportedly detected in ten of the samples, all of which were scheduled for quantitative assessment. All results fell below the RBSL/RTC threshold of 200ppm and were therefore considered acceptable for retention.

In summary the Monitor is satisfied that the soils within Phase 31 meet the necessary requirements with regards to the presence of asbestos as defined in the Section 106 Agreement.

Testing Frequencies

The Section 106 Agreement requires that the quality of all material placed as fill and/or remaining in-situ post-construction must as a minimum meet the relevant RBSLs and aesthetic standards at the frequencies set out in Table 4 of Schedule 8 of the Section 106 Agreement i.e. the sampling of soils shall be undertaken to the minimum frequencies defined.

Given that the remediation works comprised the removal of all soils to expose the underlying bedrock and then backfilling with soils from various sources, the following minimum testing frequencies are considered to be applicable to Phase 31:

- Shallow residential soils comprising imported soils from a verified greenfield site at a minimum testing frequency of 1 per 250m³
- Shallow residential soils comprising imported soils from a characterised brownfield site at a minimum testing frequency of 1 per 25m³
- Deep residential soils comprising stockpiled excavated site materials for re-use at a minimum testing frequency of 1 per 100m³
- Deep residential soils comprising soil treated ex-situ and homogenised at a minimum testing frequency of 1 per 200m³

With reference to the above, 'shallow' and 'deep' soils refer to those soils above or below 1m below FFL as applicable.

Testing Frequencies for Deep Soils >1m Below FFL

Atkins reports that the fill materials placed up to 1m below FFL (i.e. deep soils) comprised approximately 55,866m³ of material. Atkins reports that this comprised 27,998m³ of soil treated ex-situ and homogenised and 27,868m³ of stockpiled excavated site materials for re-use, of which 4,750m³ comprised broken out rock.

Given these volumes the required number of samples that would need to be tested from each source in order to meet the minimum testing frequencies for deep residential soils would be as follows:

- From the 27,998m³ of soil treated ex-situ and homogenised a total of 140 samples would be required in order to meet the minimum testing frequency of 1 per 200m³.

- From the 23,118m³ of stockpiled excavated site materials for re-use a total of 232 samples would be required in order to meet the minimum testing frequency of 1 per 100m³.

No chemical testing was undertaken on the remaining 4,750m³ rock which was validated on a visual/olfactory basis.

Atkins reports the deep soils were tested after placement via a series of trial pits from which validation samples were collected. A total of 208 trial pits are reported to have been excavated from which 433 validation samples were collected.

Atkins also reports that in addition to the trial pits that were excavated following placement of the material, a total of 41 samples were collected from the stockpiles prior to placement.

Given the nature of the in-situ testing that was carried out after placement, it is not possible to determine which of the samples would have originated from which source. Nevertheless, it can be seen that the total number of samples collected, 474, exceeds the absolute minimum required of 372. Furthermore, as a general guide, based on the volume of material that was placed of 51,116m³ (i.e. 55,866m³ minus the 4,750m³ of rock) a total of 474 samples equates to a testing frequency of 1 per 108m³ which is broadly in line with the lower of the two frequencies specified.

The Monitor is therefore satisfied that an appropriate number of validation samples have been collected from the deep soils in order to demonstrate compliance with the testing requirements specified in the Section 106 Agreement.

Testing Frequencies for Shallow Soils 1m to 0.5m Below FFL

With regards to the shallow soils, Atkins reports that approximately 4,600m³ of red marl was placed within the eastern part of Phase 31. A total of 187 samples are reported to have been collected from the validation trial pits, which equates to a testing frequency of 1 per 25m³ which complies with the minimum testing frequency listed above.

A further 5,005m³ of soils are reported to have been imported to site to be placed within the western part of Phase 31. This comprised 3,000m³ from greenfield sources, from which 64 samples were collected from the stockpiles for validation. This equates to a testing frequency of 1 per 47m³ which complies with the minimum testing frequency listed above. The remaining 2,005m³ comprised soils from a brownfield source, from which 80 samples were collected from the stockpile for validation. This equates to a testing frequency of 1 per 25m³ which also complies with the minimum testing frequency listed above.

In summary the Monitor is therefore satisfied that an appropriate number of validation samples have been collected from shallow soils in order to demonstrate compliance with the testing requirements specified in the Section 106 Agreement.

Groundwater

The Section 106 Agreement requires that wherever there is a risk that following construction of the Urban Village groundwater or organic phase liquid may contaminate soils within the top 1m below FFL such that any of the relevant RBSLs and/or aesthetic criteria specified in Schedule 8 may be exceeded, the Developer shall ensure that all necessary steps are taken to mitigate these risks. Suitable measures may include, but not be limited to, the installation of land drains and/or the raising of the site ground levels such that groundwater will not be able to influence shallow soil quality.

Observations during the remediation works indicated that groundwater is at significant depth within the underlying bedrock across Phase 31. It is therefore considered unlikely that groundwater would enter the top 1m below FFL. The Monitor is therefore satisfied that there is no significant risk of groundwater re-contaminating soils within the top 1m below FFL and therefore no further measures as listed in the Section 106 Agreement are required.

Seepages

The Section 106 Agreement requires that where it is not practicable to address groundwater contamination within bedrock this must be controlled, e.g. where seeps, sheens and iron staining discharge from the bedrock. Acceptable methodologies for remediation may include, but are not limited to, the use of land drainage via interceptors. Control measures should result in no visible discharge at surface and little or no odour observable.

Given that only minor seepages were observed at the surface of the bedrock at significant depth in relation to the FFL, there is not considered to be a significant risk of visible discharge of seepages, sheens or iron stained discharge from the bedrock. The Monitor is therefore satisfied that no further measures are necessary in relation to Phase 31.

Removal of Buried Services

The Section 106 Agreement requires that all existing buried services shall be removed and the routes of those services shall be backfilled with material no more permeable than the general material in the vicinity. Where backfill to new underground services may become a pathway for residential Pre-Transfer Date Contamination, appropriate control measures such as land drainage or venting measures shall be installed so as to appropriately protect remediated and/or developed areas.

All soils within Phase 31 were removed down to bedrock, which enabled assurance that redundant services had been removed. The Monitor is therefore satisfied that buried services have been removed in accordance with the requirements specified in the Section 106 Agreement.

CERTIFICATION

Redevelopment Remediation Works

The following section aims to confirm whether or not in the Monitor's professional opinion the Redevelopment Remediation Works have been satisfactorily completed in accordance with the purpose, objectives and requirements of Schedule 8 of the Section 106 Agreement, having regard to the intended use.

Validation is required in order to confirm that the requirements set out in the Section 106 Agreement have been met. With reference to the minimum remedial action required, as discussed in Section 2.2 of this report, **Table** provides a summary of whether or not in the Monitor's professional opinion these objectives have been satisfied.

Table Certificate Summary

REQUIREMENT	STATUS	COMMENTS
Aesthetic quality of soils	Complete	Refer to Section 2.4.1
Removal of oil saturated soil	Complete	Refer to Section 2.4.2
Chemical quality of soils	Complete	Refer to Section 2.4.3
Top 0.5m of quality controlled imported fill	Incomplete	Refer to Section 2.4.4. This requirement will be controlled by the Local Authority.
Removal of ash and clinker and metals	Complete	Refer to Section 2.4.5
Asbestos	Complete	Refer to Section 2.4.6

REQUIREMENT	STATUS	COMMENTS
Testing frequencies	Complete	Refer to Section 2.4.7
Recontamination of the top 1m of soils through contaminated groundwater	Complete	Refer to Section 2.4.8
Management of seeps, sheens and iron staining discharge	Complete	Refer to Section 2.4.9
Removal of redundant services	Complete	Refer to Section 2.4.10

Preventative Measures

In addition to preparing the RAPWCS and RRWCC, the Monitor is also obliged, if requested by CDL, to review any certificate or other documentation produced to CDL by or on behalf of the Developer purporting to confirm that Preventative Measures have been completed or are not required in relation to any Phase or part thereof providing CDL in writing of its professional opinion as to:

- whether the author is suitably qualified to issue the certificate; and
- whether the certificate contains or reflects any manifest error, omission or bias, etc. and certifies that the land is fit for its purpose.

URS has not been asked to review any such documentation in relation to Phase 31.

Ground Gas

The Section 106 Agreement states that a proprietary and appropriate ground gas resistant membrane and appropriate venting system shall be installed in all structures that will be entered by people and any structure where there is a potential for gas accumulation if ground gas is present.

Atkins has undertaken an assessment of historical gas monitoring data and concluded that the risk, as defined in CIRIA C665, is considered representative of Characteristic Situation 2 (low risk classification). Atkins therefore recommends the following gas and vapour protection measures for all enclosed structures as required by the Section 106 Agreement:

- Reinforced concrete cast in situ floor slab (suspended, non-suspended or raft) with at least 2000g DPM and underfloor venting;
- Beam and block or pre-cast concrete and 2000g DPM reinforced gas membrane and underfloor venting;
- All joints and penetrations to be sealed.

Atkins proposes that the exact details of the gas protection systems shall be agreed with the relevant regulatory authorities prior to installation.

The Monitor shall, if requested by CDL, review any certificate or other documentation purporting to confirm that Preventative Measures have been completed or are not required.

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This RRWCC confirms that in the Monitor's professional opinion, and on the basis of the information provided within the information sources and observations made by the Monitor during the remediation works, the Monitor is satisfied that the Phase 31 redevelopment remediation works appear to have been completed in general accordance with the purpose, objectives and requirements of Schedule 8 of the Section 106 Agreement, having regard to the specified intended uses, and that the purpose, objectives and requirements of Schedule 8 of the Section 106 Agreement are likely to continue to be met for the foreseeable future without the need for further remedial action in relation to or affecting the area within the Phase Boundary.

C

The PWCD will be declared once CDL is satisfied that the remediation necessary for the specified intended uses for the Phase has been completed. This report, which is the RRWCC, will be complemented by a RAPWCS in order to provide the information required by CDL to enable the PWCD to be declared.

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ST. MODWEN DEVELOPMENTS LIMITED - a ST. MODWEN company

Registration England 892832

Sir Stanley Clarke House, 7 Ridgeway, Quinton Business Park, Birmingham, B32 1AF

T: 0121 222 9400 **W:** www.stmodwen.co.uk

5th January 2015

Our ref:

Coed Darcy Limited
Dumfries House
Dumfries Place
Cardiff
CF10 3ZF

Dear Sirs

Coed Darcy
Phase 31 - St Modwen Homes Plot
Request for Phase Works Completion Date

We hereby give our written request seeking the declaration of the Phase Works Completion Date for Phase 31 of Coed Darcy as required under Clause 4.6 of the Remediation Agreement made between Coed Darcy Limited, St. Modwen Developments Limited and St. Modwen Properties PLC dated 23rd May 2008.

The Phase 31 boundary is shown on the attached Drawing No. 5041216-REM-DRG-1565(B).

The "Intended Use" for Phase 31 is confirmed as that of residential housing with gardens and associated infrastructure.

As required by the Remediation Agreement, we have copied this letter to the Monitor.

Yours faithfully

Neil Williams

For and on behalf of St. Modwen Developments Limited

Cc Rhys Mander, Llancoed House, Coed Darcy, Neath, SA11 8AZ

St. Modwen Properties PLC

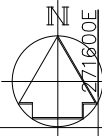
Head Office & Registered Office: Sir Stanley Clarke House, 7 Ridgeway, Quinton Business Park, Birmingham, B32 1AF

T: [0121] 222 9400 **W:** www.stmodwen.co.uk

Registration: England 349201

ATKINS

5041216-REM-DRG-1565



Key

Monitor Phase Boundary

B	BOUNDARY REVISED	MJ	ML	17/11/14
A	BOUNDARY REVISED	MJ	ML	27/05/14

REVISIONS	Drawn By	Checked By	Date
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PURPOSE OF ISSUE	Rev.	Authorised for issue	Date
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Atkins Limited
Telford Office
Cornerstone House
Stafford Park 13
Telford TF3 3AZ
Tel 01952 201234
Fax 01952 200981
Birmingham Office
The Axis, 10 Holliday Street
Birmingham
West Midlands B1 1TF
Tel 0121 483 5000
Fax 0121 483 5252

THIS DRAWING IS NOT TO BE SCALED

CLIENT
ST.MODWEN

PROJECT
COED DARCY

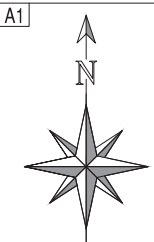
DRAWING TITLE
PROPOSED PHASE BOUNDARY
MONITOR PHASE 31

SCALES 1:2000	DRAWN MJ	CHECKED ML	CO-ORD CHECK
	DATE 22.07.13	DATE 22.07.13	DATE

0	SHEET A3	PLOT DATE 18.11.14
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DRAWING NO 5041216-REM-DRG-1565	REV B
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- NOTES
- POTENTIAL RETAINING FEATURES LESS THAN 300mm NOT INDICATED.
- KEY
- RETAINING FEATURE (HEIGHT & TYPE VARIES)
 - EXPOSED BRICKWORK
 - RETAINING FEATURE TANKING

Rev.	Date	Amendments	By	Chk

Client: St Modwen Homes

Project: Coed Darcy Residential Phase 2

Drawing Title: External Levels

Sheet 1

Status: Tender

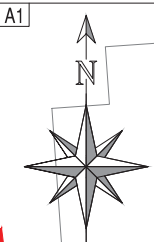
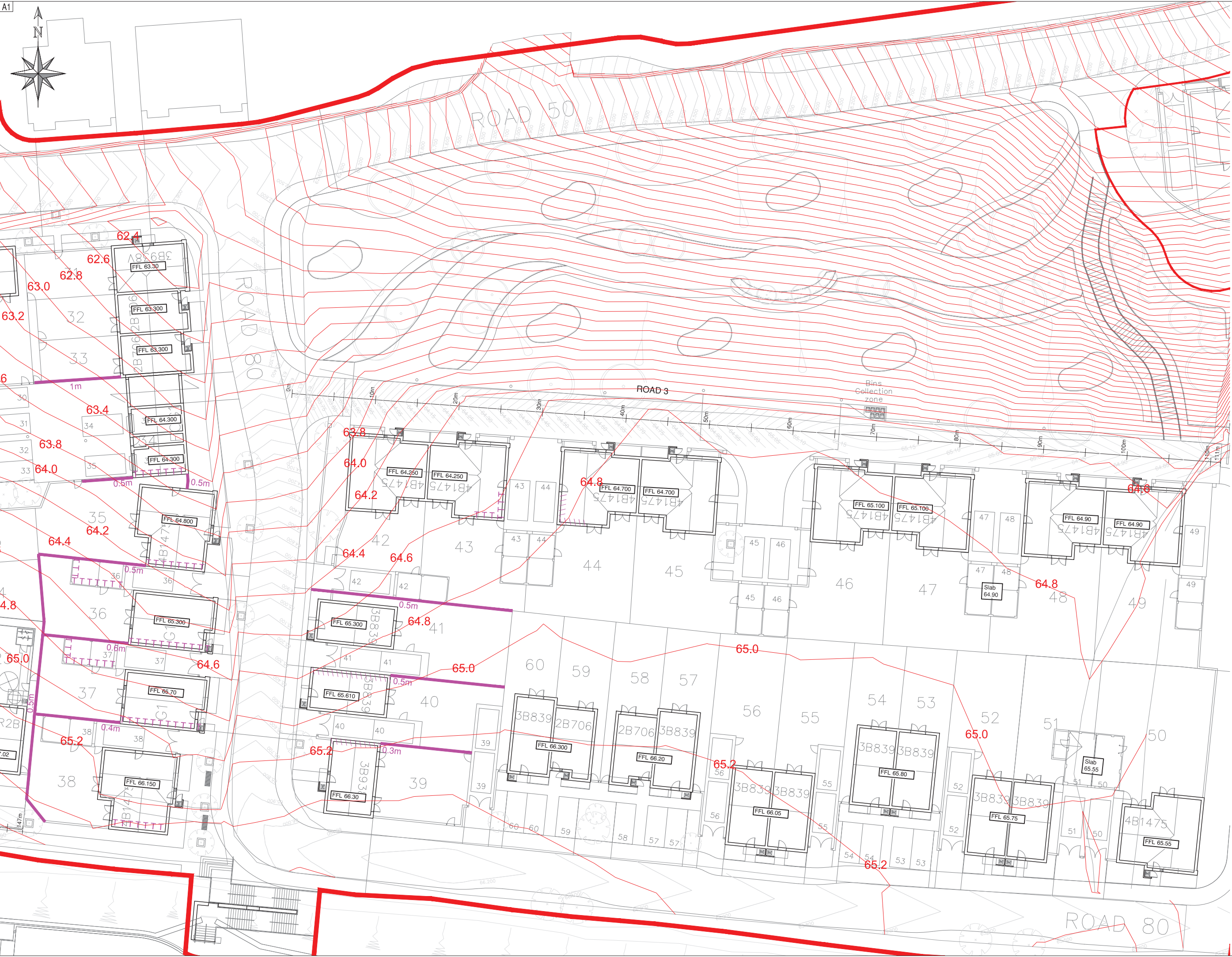
Scale	Drawn	Checked	Date
A1@ 1:250	RM	DMcC	23.10.14

Project No. P13-268

Drawing No. 309

Scale Bar: 1:500

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- NOTES**
- POTENTIAL RETAINING FEATURES LESS THAN 300mm NOT INDICATED.
- KEY**
- RETAINING FEATURE (HEIGHT & TYPE VARIES)
 - EXPOSED BRICKWORK
 - RETAINING FEATURE TANKING

Rev.	Date	Amendments	By	Chk

RL **RODGERS LEASK**
Consulting Civil & Structural Engineers

Client:
St Modwen Homes

Project:
Coed Darcy Residential Phase 2

Drawing Title:
External Levels Sheet 2

Status:

Tender

Scale	Drawn	Checked	Date
A1@ 1:250	RM	DMcC	23.10.14

Project No. Drawing No. Rev.

P13-268 310

Scale Bar:
1:500
0 10 20 30
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