

Technical Note

Project: Crymlyn Tip, Coed Darcy

Subject: Hydrock Lower Tip Works 2014/2015

Client:	St. Modwen Developments Ltd	Version:	1
Project No:	4020-PJA-22-XX-RP-R-0067	Author:	Barney Irlam
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I Overview

Between September 2014 and March 2015, a 'turnover' of the materials in the western part of Crymlyn Tip (also referred to as the 'Lower Tip' for topographical reasons) was carried out by Hydrock on behalf of St. Modwen Developments Ltd (St. Modwen). The extent of these works is shown with orange hatching on PJA Drawing 04020-A-SK243-P2 in Appendix A.

The turnover comprised excavation of waste fill and removal of identified sources of oil. Oil was skimmed from standing water in the base of the excavations and excavated soils were left to drain before being replaced in layers.

Waste fill was found to contain a mix of anthropogenic material including, barrels, pipes and hoses, laboratory glassware, timber and asbestos containing material including gaskets, rope and fire blankets. Metal waste including barrels, pipes and steel girders were left to drain of free phase hydrocarbons before removal off-site for recycling. The waste fill was found to have an average thickness of between approximately 3m and 4m, although the base of the waste fill was unconfirmed at depths of 7mbgl in the south eastern corner of the Lower Tip.

The waste fill was found to directly overlie soft brown fibrous peat, which was noted to be shallower in the northern part of the Lower Tip (approximately 1.5mbgl), compared to the south (approximately 5mbgl).

The waste fill in the Lower Tip is bound to the north by the ash bund. Perched water in the waste material was recorded at broadly the same level as in Crymlyn Bog to the north and the Coed Darcy wetlands to the south, at approximately 3.5m below the surface of the waste.

The extent of the turnover works was confined to the north by the ash bund which could not be excavated due to its instability and the potential for ingress of water from Crymlyn Bog. It was considered at the time that with the bulk sources of oil removed from the Lower Tip, residual oil present in the ash bund would drain out into the peripheral trench over time for collection.

Locally the waste extended beyond 7m depth and in these locations, sumps were installed from which small amounts of residual oil are periodically recovered.

Works were supervised on a part time basis by Atkins, who were employed by St. Modwen as Environmental consultants on the wider Coed Darcy Development. No formal completion or verification report was completed for the works by Hydrock. Site notes and photographs produced by Atkins have been reviewed by PJA to produce this summary technical note.

All data and interpretation is provided for information only and PJA cannot be accountable for any inaccuracies or omissions in any third party information.

2 Aims of the Works

Following a period of attempted oil recovery from trenches in 2014, it was decided by Hydrock, Atkins and St. Modwen that a more intensive excavation was required to recover sources of oil from the Lower Tip. A 'Tip Area Improvement Works Plan' was produced by Atkins in 2015 and is presented in Appendix B as Drawing 5041216-RAP-DWG-0001703. The primary objectives of the works were:

- to prevent oil product and residual impacts on Crymlyn Bog SSSI (to the north) and the remediated lagoons (to the south); and
- to collect and remove all free product (and sources) from zones 1, 2 and 3.

Atkins specified that excavation should be carried out to the base of the waste material, which was initially estimated to be approximately 3m below ground level (bgl). Excavations were intended to remove free product, grossly contaminated soils and potential sources of oil.

The work in the Lower Tip was split into three zones for ease of excavation and for water and material management. Excavation of waste materials from Zones 1, 2 and 3 was carried out from east to west as shown on Figure 1 below.

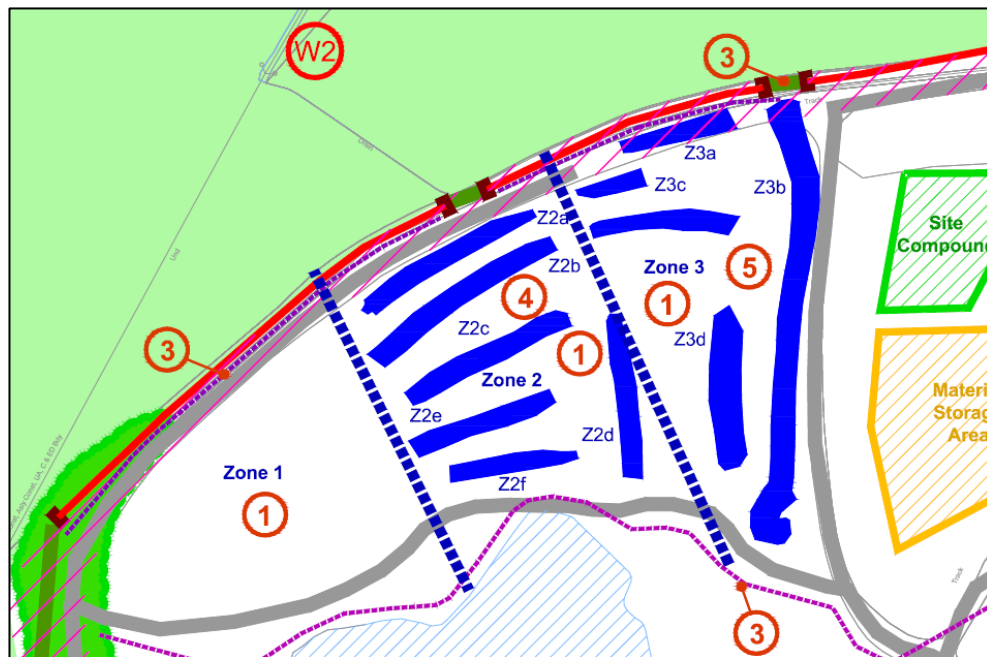


Figure 1: Extract from Atkins Drawing: 5041216-RAP-DWG-0001703

3 Site Records

Site notes produced by Atkins have been reviewed to determine the approximate base of excavation, as indicated on the figure in Appendix C.

Across much of the site, waste materials were excavated to expose the underlying peat, the depth of which ranged from approximately 2.0m to 6.5mbgl.

Where waste deposits were found to extend deeper than 6.5mbgl, the excavation was terminated and a sump was installed to collect free phase oil after backfilling.

Similarly, the ash bund material on the northern boundary of the site could not be excavated due to rapid water ingress during excavation. A series of sumps were installed along this northern boundary in the ash bund to allow any residual free phase hydrocarbons to be recovered.

These oil collection sumps remain in place and are monitored on a monthly basis.

4 Photographs

4.1 Zone I



Photograph 1: Excavation in Zone 1



Photograph 2: Base of Excavation North of Zone 1



Photograph 3: Backfilling of drained soils into Zone 1 (north east corner)

4.2 Zone 2



Photograph 4: Peat at base of excavation in northern part of Zone 2



Photograph 5: Excavation of waste deposits in Zone 2



Photograph 6: Base of excavation and partial backfilling in the southern part of Zone 2

4.3 Zone 3



Photograph 7: Oil Recovery from the excavation in Zone 3



Photograph 8: Arisings from excavations