Site Condition Report

Morganite Electrical Carbon Ltd.

VP3339PD (as Varied).

1.0 SITE DETAILS	
Name of the applicant	Morganite Electrical Carbon Ltd (Morganite)
Activity Address	Upper Fforest Way, Morriston, Swansea, SA6 8PP
National grid reference	Lat – 51.666400; Long – -3.912360
Document Reference and dates for Site Condition Report at permit application and surrender	Supporting documents to accompany this SCR detailed in Appendix F – Site Documents: F1 – CAR_NRW0033361 F2 – MECL Minor Tech 2018-10-01
Document references for site plans (including location and boundaries)	Ref Appendix F - Site Documents: F3 – Current Site Permit Boundary, F4 – New Site Permit Boundary F5 – New Site Layout Internal F6 – Surrendered Area Summary

2.0 Condition of the land at permit issue	
Environmental Setting including: • Geology • Hydrogeology • Surface waters	Details of the Environmental Setting are provided within the Site Report (Ref: BU3787 Part B1.3.1, March 2004) which was prepared as part of Morganite's IPPC Application. A copy of the Site Report is presented in Appendix A.
Pollution history including: • Pollution incidents that may have affected land • Historical land-uses and associated contaminants • Any visual/olfactory evidence of existing contamination • Evidence of damage to pollution prevention measures	The pollution history of the site is presented in the Site Report, Appendix A. Also site History and Pollution summary is presented in Appendix F – F9 – Surrender Overview.

Evidence of historical contamination, for example, historical site investigation, assessment, remediation and verification reports (where applicable)	Details of historical investigations undertaken at the Site are presented within the Site Report, and the design Site Protection Monitoring Programme (SPMP), a copy of which is presented in Appendix B. The SPMP was prepared in pursuance of Condition 4.1.7 of the Permit No. VP3339PD (the "Permit") authorising the operation of Morganite Electrical Carbon Limited (the "installation"). The SPMP makes reference to two known contamination events that occurred before issue of the Environmental Permit, which are summarised below: In the late 1970s a diesel spill occurred as a result of a fractured fuel supply pipe line. In early 2002 leakage of an oil pipeline located in the north western corner of the site occurred resulting in oil entering the ground. A programme of free product recovery (undertaken in 2004/2005) and on-going monitoring (both overseen by Environ) was implemented. The works were undertaken with agreement of the Environment Agency. As part of the SPMP, BHA was to be monitored to assess any movement of the remaining plume. Additionally, BHD was to be monitored to assess the groundwater quality as a result of the diesel spill that occurred in the 1970s.
Baseline soil and groundwater reference data	The baseline soil and groundwater reference data was considered to be obtained from the ground investigation undertaken by CH2MHiLL in 2003 and by Environ in 2003/04. This information is presented within the Site Report and the SPMP. Of the zones that fall within the boundary of the partial Environmental Permit surrender, baseline soil data was collected from Zone 1 (soil sample analysed from BH5CH2M, 2.5-3.0m bgl), and Zone 4 (WS2, WS3 and WS4, from various depths between 0 and 5.0m bgl).

3.0 Permitted Activities	
Permitted activities	The Operator is currently authorised to carry out the primary activities and the associated activities specified below:

	A1 – 6.2 A(1)(a) Carbon Activities – Production of Carbon by means of Graphitisation – Receipt of raw materials to dispatch of finished products. A2 – 4.2 A(1)(c)(vi) Inorganic Chemicals – Manufacturing activity involving the use of Lead – Receipt of raw materials to despatch of finished product. Historically, in addition to the above, the site has also listed the following activities: Section 4.2 A(1)(d) Inorganic Chemicals – Manufacturing activity involving the use of antimony - Receipt of raw materials to despatch of finished product. Section 3.6 Part B(a) Ceramic Production – Manufacture of technical ceramics – Receipt of raw materials to despatch of finished product. At the present time there are no significant planned changes to operational layout or processes between the submission date of this report (i.e. within 2 months after permit issue) and the start of the process to collect the reference data (i.e. within 6 months of permit issue).
Non-permitted activities undertaken	None other.
Document references for: • Plan showing activity layout; and • Environmental risk assessment	F5 – New Site Layout Internal F7 – Site Environmental Risk/Impact Assessment 2019.

4.0 Changes to the Activity	
Have there been any changes to the activity boundary?	No. Base raw materials and products manufactured on the site have remained the same throughout history.
Have there been any changes to the permitted activities?	None, process improvements and modernisation of plant have led to site consolidation. Base raw materials and products manufactured on the site have remained the same throughout history.
Have any ‘dangerous substances’ not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	None. Full list of MSDS sheets for substances used on site kept, all wastes and by products sent for disposal via licenced waste transport companies and handlers.

5.0 Measures taken to protect land
Refer to Appendix C for historic groundwater and soil sampling reports. Groundwater and Soil results are summarised with graphs in Appendix D. Daily checks are undertaken as part of 14001:2015 EMS procedures. Bunds, tanks, waste handling areas, discharge points including storm water and effluent systems are checked daily

for signs of spillages and contaminants or damage. Any incidents are noted on daily check sheets and any significant incidents are noted in the site Environmental Incident Report (EIR) log.
This was reviewed prior to submission of this SCR and there were no notable incidents that could have caused notable effect on the environment or the land and groundwater within the site permit area.

6.0 Pollution incidents that may have had an impact on land, and their remediation

No pollution incidents have occurred during the period of the Environmental Permit.

7.0 Soil gas and water quality monitoring (where undertaken)

Groundwater quality monitoring

In accordance with the SPMP groundwater sampling of boreholes with subsequent analysis has been undertaken in 2006, 2007, 2008, 2010, 2015 and 2019. These reports are included in Appendix C. Of the boreholes that are present at site, three (BHA, BHD and BH5CH2M) are located in the area of the site where the permit is to be surrendered. The concentrations of chemical species recorded within these three boreholes over the monitoring period are presented in tabular form and graphs in Appendix D.

Data considered to represent reference groundwater quality was collected from BH5CH2M (by CH2M Hill in August 2003, and Environ in November 2003 and March 2004), and BHA & BHD by Environ in March 2004 (Total Petroleum Hydrocarbons analysis only).

The text below summarises the key findings of the results of the analysis within the three boreholes over the monitoring period (2006 to 2019). A comparison of the results with the reference data is subsequently provided.

BH5CH2M (Zone 1)

The recorded concentrations of chloride, alkalinity, ammoniacal nitrogen, magnesium, sodium, potassium, nitrate, Total Organic Carbon, together with pH, remained relatively constant throughout the monitoring period. The recorded concentrations of calcium and iron generally decreased over the monitoring period. Between 2006 and 2008 the concentration of Total Petroleum Hydrocarbons (TPH) was elevated (ranged between 330 µg/l and 1610 µg/l). However, during 2010, 2015 and 2019 the recorded concentration of TPH was less than the laboratory detection limit indicating an overall betterment in groundwater quality. The concentration of PAH was only determined in 2015 (even though its analysis was not required as part of the SPMP) with the concentration being less than the laboratory detection limit (120 µg/l).

BHD (Zone 3)

The recorded concentrations of chloride, ammoniacal nitrogen, magnesium, sodium, calcium, potassium, nitrate, Total Organic Carbon, together with pH, remained relatively constant throughout the monitoring period. Despite an initial elevated concentration, the concentrations of iron were subsequently reduced and relatively constant throughout the monitoring period. The alkalinity remained relatively constant throughout the monitoring period, although an unexplained increase was observed in 2008. Concentrations of TPH and PAH were only determined in 2015 (even though their analysis was not required as part of the SPMP) and recorded concentrations that were less than the laboratory detection limit of 100 µg/l and 120 µg/l, respectively

BHA (Zone 4)

The recorded concentrations of nitrate, ammoniacal nitrogen, magnesium, calcium, potassium, nitrate, Total Organic Carbon, together with pH, remained relatively constant throughout the monitoring period. With the exception of the results in 2019, the concentrations of chloride and sodium also remained relatively constant throughout the monitoring period. An unexplained increase in the concentrations of chloride and sodium were observed in 2019. Despite an initial elevated concentration, the concentrations of iron were subsequently reduced and relatively constant throughout the monitoring period. Between 2006 and 2008 the concentration of Total Petroleum Hydrocarbons (TPH) was elevated (ranged between 330 µg/l and 1610 µg/l). However, on 2015 and 2019 the recorded concentration of TPH was less than the laboratory detection limit indicating an overall betterment in groundwater quality. The Total PAH concentration was marginally elevated in 2007 and 2008 but was below the laboratory detection limit in 2015.

It became apparent during the monitoring in 2019 that, unintentionally, at least in 2015, that BHC had mistakenly been assumed to be BHA, and sampled instead. For consistency, Morganite sampled both BHC and the true BHA in 2019. Whilst BHC recorded a TPH concentration less than the laboratory detection limit, BHA recorded elevated concentrations of TPH. Free product was collected from BHA and its analysis indicated that it comprised weathered diesel which was dated by the laboratory to be approximately 17 years old. This would date the contamination as being present from 2002, which is consistent with the date of the known contamination incident (detailed in Section 2). This confirms that the contamination in this area predates the issue of the Environmental Permit. To establish the representative groundwater concentration at BHA a groundwater sample was collected before and after purging the borehole in 2019. The TPH concentration pre and post purging was 32,000 µg/l and 3400 µg/l, respectively. The results of the analysis undertaken on the samples collected from BHA in 2019 are presented in Appendix E.

Comparison with baseline data

Of the chemical species analysed between 2006 and 2019 as part of the SPMP, the majority were not analysed in 2003/2004 so it is not possible to provide a direct comparison of the data. The concentration of TPH within BH5CH2M during 2003 and 2004 ranged between 268 and 2300 µg/l, whilst the concentration of TPH within BHA and BHD was 1600 µg/l and 1100 µg/l respectively.

The concentration of TPH within BH5CH2M between 2006 and 2008 was broadly similar to that observed during 2003 and 2004. Subsequent to 2008 there has been a general reduction in the recorded concentration of TPH, indicating overall betterment in groundwater quality.

The concentration of TPH recorded in the sample collected from BHD as part of the baseline monitoring (1100 µg/l) was higher than the concentration recorded in 2015 (<100 µg/l)

The concentration of TPH recorded in the sample collected from BHA as part of the baseline monitoring (1600 µg/l) was in the same ball park as the sample collected (post purging) in 2019 from BHA (3400 µg/l). The monitoring undertaken in 2019 shows that localised diesel contamination is still present in the area of BHA but, importantly, the incident that led to this contamination was prior to the issue of the Environmental Permit.

Soil Monitoring

In accordance with the SPMP no ongoing monitoring of soils was to be undertaken during the life of the Environmental Permit. However, it was stated within the SPMP that following surrender of the Environmental Permit an investigation to assess for the presence of contamination in soils would be undertaken. A variation to the original Environmental Permit (Ref. VP3339PD/V008, April 2017) also required monitoring of soils to be undertaken every 10 years (and groundwater every 5 years).

In accordance with the above, soil sampling was undertaken from 7no. locations across the site. The sampling locations were situated in areas where hardstanding was absent, and which shall be surrendered. The samples were collected from depths of between 0.4m and 0.5m bgl (all collected from Made Ground) and analysed for a suite of chemical species commonly present at industrial sites. The results of the testing are presented in the 2019 monitoring report within Appendix D and are summarised below.

Gross contamination was not identified within the samples analysed. The concentrations of inorganic chemical species (including heavy metals) were broadly similar within all samples analysed. The concentrations of TPH were increased at locations HP106 and HP107 compared to the other locations, whilst the concentrations of PAH were more increased at HP105, HP106 and HP107 than at the other locations. There is no obvious reasoning for the more elevated concentrations of TPH and PAH at the locations where they have been observed and their presence is likely to be from the general composition of the Made Ground rather than from a specific source of contamination. Asbestos containing material (ACM) in the form of cement and fibres/clumps were identified at two locations. The presence of ACM within Made Ground on an industrial site is not unexpected.

To put the recorded concentrations of chemical species within context, the concentrations were compared to published assessment criteria (Suitable 4 Use Levels published by Land Quality Management). These assessment criteria may be used to assess the potential long term health risks to site users of an industrial site). With the exception of a small number of PAH species within the samples collected from HP105, HP106 and HP107, the concentrations of all chemical species within the 7no. samples were less than the assessment criteria. This indicates that, on the whole, the recorded soil concentrations do not present an unacceptable risk to the long term health of site users. It should also be noted that in the areas where the soil samples were collected the surface was covered with inert limestone gravel which prevents the direct exposure of soils to site users.

Comparison with baseline data

The recorded concentrations of chemical species within the 7no. samples analysed were broadly similar to those observed in the samples that represent the baseline reference data for the Site. It should be noted that the soil samples collected in 2019 were not in the same exact location as those collected as part of the baseline monitoring so the direct comparison of data cannot be made. The results of the soil analysis do not provide evidence for the deterioration of soil quality as a result of the activities undertaken during the period of the Environmental Permit.

8.0 Decommissioning and removal of pollution risk

This is presented in Appendix F – F9 – Surrender Overview.
It contains photos of the vacated areas also.

9.0 Reference data and remediation (where relevant)

The results of the soil and groundwater monitoring undertaken as part of the SPMP (and discussed in Section 7 above) indicate than the condition of the land has not deteriorated during the period of the Environmental Permit. Remediation of the site, as a result of activities undertaken during the period of the Environmental Permit, is not considered necessary.

10.0 Statement of site condition

The results of the soil and groundwater monitoring undertaken as part of the SPMP (and discussed in Section 7 above) indicate than the condition of the land has not deteriorated during the period of the Environmental Permit. The condition of the land is consistent with the conditions that may be expected at an industrial site with a similar setting and historical land use.

As confirmed by the monitoring undertaken in 2019, localised TPH groundwater contamination is present in the north western corner of the site (BHA). This contamination, however, predates the issue of the Environmental Permit.