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TE1880-TE-00-XX-CO-GE-001-V01

FAO Jonathon Parr

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ENVIRONMENTAL HEALTH SENIOR OFFICER COMMENTS RESPONSE LETTER – HOPWOOD HALL COLLEGE, ROCHDALE PREAPP-00012-25

Dear Jonathon,

Tier Environmental wish to thank you for your email comments received on 16th April 2025 following your review of the following documents produced by Tier Environmental for the above site, including the positive comments provided – this is very much appreciated:

- TE1880-TE-00-XX-RP-GE-001-V03 PRA - Preliminary Risk Assessment (report reference: TE1880-TE-00-XX-RP-GE-001-V03, dated: 12th March 2025);
- TE1880-TE-00-XX-RP-GE-002-V02 GIR - Ground Investigation Report (report reference: TE1880-TE-00-XX-RP-GE-002-V02, dated 3rd March 2025); and,
- TE1880-TE-00-XX-RP-GE-004-V01 DQRA - Asbestos Quantitative Risk Assessment (report reference: TE1880-TE-00-XX-RP-GE-004-V01, dated 28th February 2025)

It is understood that the Coal Mining Risk Assessment (report reference: TE1880-TE-00-XX-RP-GE-003-V01, dated 6th February 2025) has been receipted but not reviewed at the time of writing.

For ease, we have reproduced your comments and provided responses in red below:

TE1880-TE-00-XX-RP-GE-002-V02 GIR Conclusions:

Tier Environmental concluded the following in relation to onsite contamination:

1. It is recommended that further soil sampling and human health risk assessment is conducted post-demolition in the vicinity of the proposed contoured landscaped area in the east of the site
2. It is recommended that an asbestos Detailed Quantitative Risk Assessment is carried out for the asbestos concentrations reported at the site. If this is not carried out or if a potential risk is identified following any future risk assessment, then a remediation strategy will be

required for a clean cover system at the site I assume this is why TE1880-TE-00-XX-RP-GE-004-V01 - DQRA was written? Yes, this is correct. The DQRA was conducted to further assess whether the concentrations reported in the soils presented a potential risk to end-users that warranted remedial action.

3. It is recommended that an Asbestos Management Plan is prepared for the site.
4. It is recommended that further detailed consideration of asphalt is conducted to determine potential re-use opportunities and further refine the waste classification.
5. No ground gas protection measures are considered necessary for the site (subject to identification during earthworks of any unrecorded mine shaft, adit or associated coal mining features that may present preferential pathways).
6. I HAVE LEFT COMMENTS RE THE CONTROLLED WATERS RISK ASSESSMENT TO THE EA (except for one note on the SOBRA groundwater vapour guidance). Thank you for the confirmation.

I am in agreement with these conclusions, and this work needs to be undertaken. Thank you for the confirmation. However, please see below for further comments I feel need further consideration.

Comments:

1. The white stained soils identified within CP101 and CP104 at shallow depth (CP101 at 0.21-0.5mBGL and CP104/RH102 at 0.35-0.8mBGL) have not been tested. Nor is there any discussion of what these soils are. A review of CLR2 would indicate white staining/colouration could be indicative of: salts of Al, As, Cd, Pb, or Mg, mercurous chloride, mercurous sulphate, some Ag salts or Zn salts. CP101 has historically been adjacent to dye works, and CP104 was historically within the old course of the Roch before it was diverted. Tier Environmental has recently conducted some additional works for the purposes of delineating an area around WS105 for soil waste classification purposes. This has included a series of core holes and shallow hand pits inclusive of locations in locale of CP101 and CP104 and it can be confirmed that no further evidence of 'white coating' on silt pockets has been identified. It is considered on balance, and in the absence of any evidence of widespread similar descriptions within these areas that the observations may have been a result from the concrete coring / limestone and the white slurry formed as water is added during the process. This is supported by the shallow nature of these observations.
2. I believe testing of the possible PFA has not taken into account metals which are generally enriched within PFA. BRE 509 provides a list of the usual constituents of PFA which includes As, B, Ba, Cd, Chloride, Co, Cr, Cu, Fl, Hg, Mn, Mo, Ni, P, Pb, Sb, Se, Tn, V and Zn, as well as noting their average concentrations. I also believe that PFA can be radioactive, which does not appear to have been considered. I understand that you don't always know what you are testing when you schedule testing or that something like this might be present and so it is not always possible to react to it, but I believe this needs to be at least considered. We use Element materials Technology who use a Geiger counter to check any concerns with samples entering the laboratory with regards to radioactivity. Whilst the results aren't

reported, there is an opportunity for them to raise any concerns regarding the radioactivity of any samples submitted for chemical analysis. In the absence of any such alerts, it is considered unlikely that the PFA on site represents a risk from radioactivity.

We acknowledge the list of metals identified above and can confirm that arsenic, cadmium, chloride, chromium, copper, mercury, nickel, lead, selenium and zinc have been analysed in such a manner that this would be sufficient to assess any general enrichment within these materials. While it is recognised that other metals and inorganic parameters may also be present in soils, the pathways and mechanisms of exposure for these substances are broadly commensurate with those of the metals listed above. Their risk can therefore be considered indirectly assessed through the same exposure routes and receptor scenarios.

In the context of this assessment of the metals analysed for and in line with the principle of proportionate risk assessment, the selected determinand list is considered appropriate and sufficient to characterise risks to human health under the current conceptual site model.

3. I believe testing of the soils has not taken into account those substances used within bleaching/dyeing mills. The relevant DoE Industry profile provides a list of substances used within dyeing processes. I believe other substances not mentioned within the DoE IP could have included tannic acid, oxalic acid, alum, chrome alum, iodine, potassium, sodium, and tungsten. Animal dung was also used to remove excess mordants (although I see no presence of this within the logs). I understand given the age of the mills that a lot of the organic compounds mentioned within the IP won't have been used. (Sources "DoE Industry profile Textile Works and Dye works", "Colouring textiles; A history of natural dyestuffs in Industrial Europe" and "Manual of chemical technology").

While direct laboratory analysis for individual acids (e.g., tannic acid, oxalic acid) was not conducted, soil pH testing was undertaken as part of the geotechnical analysis (see Table 7.3 of the GIR). The results indicate that soil pH values were generally near neutral, with no indication of significant acidification across the site.

As acidic substances typically degrade or neutralize over time and in the presence of alkaline Made Ground materials (e.g., concrete, brick, slag), we consider pH testing a reasonable proxy to indicate the absence of persistent acidic contamination. If historic acidic discharges had occurred, we would expect a legacy of lowered pH, which was not observed.

The DoE Industry Profile for Textile Works and Dye Works and literature such as "Colouring Textiles" and the "Manual of Chemical Technology" do reference a broad range of historical dyeing chemicals, including tannic acid, alum, oxalic acid, iodine, chromium compounds (e.g., chrome alum), and various mordants.

While not all of these were directly analysed, the site was tested for a wide range of relevant chemical groups, including:

- Metals, including Chromium inclusive of hexavalent and trivalent forms (chrome alum is a chromium salt) and indeed separate analysis for hexavalent chromium as well.
- Cyanides, which may result from dye processes involving azo or vat dyes.
- PCBs, PAHs, VOCs/SVOCs, which cover many potential organic compounds historically used in dye and bleaching processes.
- Asbestos was also screened, given the age and former industrial uses of the site.
- Speciated TPH, BTEX, glycols, and phenols were included to assess petroleum and solvent-based contamination pathways.

Given the age of the mills and understanding of industrial practices at the time, it is recognised that many organic compounds noted in historical records are likely to have degraded over time or were never used in significant quantities.

While specific tannin or biological breakdown products (e.g., from animal dung used in pre-mordant processes) were not tested, these are considered unlikely to persist in the environment over the decades since the operational use of the mills. Such compounds are also highly biodegradable and would not typically represent a long-term contamination concern. No visual or olfactory indicators (e.g., manure odours or high organic content deposits) were identified during logging, nor were organic-rich strata (other than expected in the alluvium) recorded.

Based on the pH data, absence of low-pH values, and the broad analytical suite selected, we believe that reasonable lines of evidence exist to demonstrate that acid-related and dye-process contaminants are unlikely to pose a significant residual risk at the site.

4. Whilst some testing relevant to these land-uses for some contaminants has been undertaken, I am happy to be persuaded that further testing is not required, but at the moment I feel that the “further soil sampling and human health risk assessment” should be reflected across the whole site, not just the landscaped areas, and should be expanded to include those substance omitted. I also feel that this would aid in updating the waste classification.

Please see our response above with regards to the former land uses and so I hope that this provides confidence in our conclusion regarding focussing additional soil sampling and human health risk assessment to the proposed landscaped areas.

Additional shallow testing has been recently conducted targeting primarily TPH and asbestos. TPH because this was the primary driver for the hazardous waste classification at WS105 (although consideration of TPH within the human health risk assessment is sufficient

to demonstrate that the concentrations at WS105 and elsewhere across the site do not present a significant risk to human health).

5. It is noted that a geophysics report is stated to be included within Appendix A, but this does not seem to be the case in the copy I have. Can a copy please be forwarded to me.

Apologies for this omission, please find a copy attached.

6. I support the re-use of materials on site, as long as the relevant mechanism is in place and they are suitable for use both geochemically and geotechnically. As it is a waste issue, I would expect the EA to lead but if an MMP is produced, this would also need to be submitted to the LPA.

Thank you. Yes, our normal approach for MMPs would be to provide a supporting document to you and the EA.

7. RH101A, RH103 and RH103A: the possible metal/cast iron found within these locations. These were noted at varied depths, between 2.2 and 6.5mBGL, but there doesn't seem to be any mention of it beyond its discovery. Has any consideration been given as to what this could be? It seems too deep to be a redundant service; could they be related to the foundations of old buildings?

This is considered further within section 8.2 of our Coal Mining Risk Assessment report and we believe that it coincides with the suspected mineworkings beneath the site:

*'As detailed in Table 7.2 above, there have been multiple observations within RH101, RH102, RH103, RH103A and RH103C indicate it is likely/possible, that there are shallow mineworkings present underlying the site. Due to the high risk associated with shallow mineworkings from crown hole collapse and large differential settlements, a precautionary approach must be undertaken if the presence of shallow mineworkings cannot be categorically ruled out. Taking into account the similar depth that the features were observed in the boreholes, the varying thickness and depth that coal was encountered in each borehole, **the suspected metal obstruction within the bedrock**, the void/drop in drill rods, the loss of flush, the areas of no recovery and very poor recovery, the similarity with assumed coal depths and evidence of workings, the highly fractured nature of this rock horizon and the shallow recorded coal seams, it is considered more likely than not that there are shallow unrecorded mineworkings present underlying the site.'*

8. Within the report, it is stated that Geotechnics exploratory location (CP02) in the NE section of the site demonstrated a HC odour at 5.3m BGL. Is there any suggestion as to what this HC could be caused by within Geotechnics GI report (assuming it wasn't just factual?) Where is CP02 in relation to historical land uses? Which exploratory locations from the Tier Environmental GI were in close proximity to this location? How far away from Geotechnics CP02 were they? Did they all get down to a similar depth (in MAOD?). Reliance on other

reports can be purchased, usually at small cost (through experience, everything from £20 to £500).

The Geotechnics report describes “During drilling, hydrocarbon odours were detected in CP02 and not in CP04. However, VOC compounds typically associated with petrol were detected in soils samples from CP02. The TPH range detected in the water sample from CP04 suggests a heavier TPH source than petrol. Although the concentrations exceed the EQS, TPH impact is localised and not site wide. In addition, the hydrocarbon chain lengths are likely to mean that the compounds have low mobility and relate to localised impact in Made Ground and there is assessed to be no significant risks.”.

CP02 was located within the former infilled watercourse and so Tier Environmental exploratory hole locations CP103, CP104/RH102 and CP102 were advanced within the former infilled watercourse area to further investigate the potential for hydrocarbon impacts at depth. As stated in Section 6.3 of our report: “The previous Geotechnics ground investigation recorded black stained material with a strong hydrocarbon odour at 5.30 m bgl within CP02. Tier have undertaken several boreholes have been undertaken surrounding this area, with no further evidence of hydrocarbon contamination observed”.

9. With regards to the use of commercial GACs; has any consideration been given to running the commercial land-use in CLEA but changing the receptor age class to better model students, which would be the critical receptor here? Students are generally smaller than adults and would therefore be at greater risk from contamination, although their exposure time would be less (two years). I feel this would be more protective of students with the GAC commercial being appropriate for adults. However, I am open to being convinced that screening against adults is appropriate for students, too. I note the use of POSPARK for a sensitivity analysis for areas of landscaping.

Thank you for the comment. The current human health risk assessment applied GACs derived for a commercial land use scenario, which is a standard approach in line with Environment Agency guidance (Updated Technical Background to the CLEA Model, 2009). While this guidance defines three default scenarios (residential, allotment, and commercial), it does not explicitly identify educational settings such as colleges. However, the commercial scenario is often used in practice for colleges, universities, and similar sites, particularly where:

- The majority of time spent on-site is indoors (e.g. classrooms, workshops),
- Site access is controlled or limited,
- Daily time spent on site is reduced compared to full-time workers,
- Exposure duration is limited to a few years (e.g. 2-3 years of study).

In this context, we consider the use of commercial land use GACs to be a reasonable and appropriately conservative default scenario, especially when the actual exposure frequency

and duration for students is typically less than that assumed for the default commercial worker.

While students (particularly under 18s) may be smaller than a typical adult worker, their total exposure duration and frequency are significantly lower, especially as the likely worst-case scenario is attendance for approximately 2 No. academic years (as noted).

Modelling a student-specific receptor within CLEA is certainly feasible in theory (e.g. custom exposure settings for a 16–18-year-old receptor over 2 years); however, the standard commercial GACs are already derived using conservative exposure assumptions. The default commercial worker is assumed to spend 230 days/year on site for 49 years, with frequent exposure pathways (inhalation, ingestion, dermal).

This far exceeds the likely exposure frequency, duration, and routes for students, who would typically be on-site 190 days/year for less than 2 No. years, and for limited daily hours.

Therefore, although younger receptors have potentially higher intake rates per unit bodyweight, this is offset by the much shorter exposure duration and reduced contact hours, which makes use of commercial GACs sufficiently protective.

Despite the above, you are correct to point out that we have taken an additional step of conducting sensitivity analysis by comparing the reported concentrations against Public Open Space (POS) Park GACs. We recognise that areas of soft landscaping present a slightly higher potential for soil contact, particularly if students or staff spend time outdoors during breaks or activities. To account for this, a sensitivity analysis was carried out using POS Park GACs, which are based on young children playing daily in parks – a highly conservative scenario.

The comparison against these more stringent criteria identified only a single exceedance for benzo(a)pyrene in one Made Ground sample in the northeast. This has been flagged for further assessment in line with LCRM and may inform future remediation design for soft landscaping areas, if required.

10. I assume from the 2001 date provided in the main text in relation to RIVM Maximum Permissible Risk levels is for Re-evaluation of human-toxicological maximum permissible risk levels 711701025; no reference is provided. MPRLs were updated at least in 2009. A USEPA PPRTV is available for dibenzofuran which gives a subchronic oral p-RFD. The Canadian toxicity values (which is what I assume “CCME (2014). Soil Quality Guidelines” refers to) were updated in 2023. I would also check out the Californian and Texan EPAs as they also have good toxicity data. WHO EHCs and CICADs, as well as ORNL RAIS also provides robust tox data for many hundreds of chemicals.

Thank you for this commentary. Please see further consideration below.

11. I personally do not have an issue with the use of foreign GACs where they are appropriate to use. Preference would be to USEPA RSLs. Dutch intervention values, for instance, model pathways we do not which would require removing to align them to the UK. Values are also available for use from Germany, Sweden, Australia and Japan (though it is questionable how UK appropriate the Australian and Japanese values are in the UK).

Comparison of reported measured concentrations of chloromethane, dichloromethane (dcm), chlorobenzene, 4-methylphenol (p-cresol), 2-methylnaphthalene, bis(2-ethylhexyl) phthalate (dehp), 4-nitroaniline, dibenzofuran and nitrobenzene are all below residential and industrial RSL and/or appropriate Dutch Intervention values.

Preliminary research has indicated that for carbazole, Texas PCLs are the only up-to-date numerical soil criteria published for carbazole as a discrete analyte. No other national scheme now carries carbazole values.

Most agencies streamlined their tables to the 16-PAH set or rely on indicator compounds (BaP), and heterocyclic PAHs such as carbazole were removed.

The maximum reported carbazole concentration of 0.427mg/kg is below the Texas residential PCL value of 230 mg/kg.

On the basis of the above and the discussion included within our report, it is not considered that the measured concentrations of potential contaminants of concern reported (for which there are no UK-based publicly available GACs) represent a potential risk to the proposed end-users.

12. I am amenable to the use H2S and CO HSE Workplace Exposure Limits. The risk can be better clarified for the layman with a discussion on concentration dilution utilising flow rates, volumes, etc., in lieu of any other more formal UK risk assessment approach. I.e.; once production rate of ground gas is taken into account (very low), and flow accounted for (very low), it is unlikely that concentrations of these gases would accumulate in sufficient quantity to pose a risk.

Thank you for the comment. As you point out, in addition to the reported steady hydrogen sulphide and carbon monoxide concentrations being reported below the workplace long term and short term exposure limits (published by the Health and Safety Executive) once the production rate of ground gas is taken into account, and flow accounted for, it is unlikely that concentrations of these gases would accumulate in sufficient quantity to pose a risk.

13. LQM Ternary plot results; the text is missing from the red axis. I assume this should be CH₄, can you please confirm.

Apologies for this omission – yes, we can confirm it is methane:



14. Confined Spaces Regulations should be mentioned in relation to construction workers risks to ground gas; it is a legal requirement to assess the risks before entry to a confined space. Whilst I am not suggesting Tier Environmental should dictate what any contractor should do, it is a timely reminder of what is legally required (especially as I have been confined spaces trained and had to enter confined spaces several times, complete with rescue equipment).

Thank you for your comment regarding confined space entry and the associated risks from ground gases. We agree it is important that these risks are properly considered under the Confined Spaces Regulations, particularly during construction works.

We are mindful of our role to characterise ground conditions and assess potential environmental risks, including ground gases. Our report provides gas monitoring data, risk classification (CS1 - Very Low Risk), and relevant conceptual modelling to inform future site activities. However, we do not determine construction methodologies or access requirements during works.

Whether confined space entry will be relevant to this project depends on the contractor's final construction approach. It is the responsibility of the Principal Contractor and site health and safety team to assess confined space risks, should they arise, and to implement appropriate controls in line with legal duties under the Confined Spaces and CDM Regulations.

We consider that the information provided within the report is sufficient to support such assessments.

15. Are topsoils and subsoils on site uncontaminated and naturally occurring? If so, they would fall outside the Waste Framework Directive. However, I very much doubt they would be naturally occurring given the site has been constantly developed since the late 1800s, and therefore they would be subject to the Waste Framework Directive and therefore require assessment should they be reused on site or taken off-site as suggested.

On balance, we would regard the topsoil encountered as Made Ground for the purposes of consideration under the waste Framework Directive, given the presence of Made Ground beneath the topsoil and some evidence in areas of brick and wood within the topsoil in some locations.

16. What are potential impacts (if any) on the generation of mine gas from grouting (I have not checked the coal mining risk assessment yet; this discussion may be in there). I believe this should be briefly discussed to show it has been considered.

Mine gas considerations during grouting are included separately within a Specification For The Stabilisation Of Shallow Mineworkings (report reference: TE1880-TE-00-XX-RP-GE-005-V02, dated 11th April 2025). I have attached the document for your reference (see Section 4.5).

17. Re-use of asphalt acceptable as long as EA guidance RPS157 is followed in its re-use.

Thank you for confirming.

18. The nickel S4UL was updated in 2015 in response to EFSA withdrawing their opinion (https://cdn.shopify.com/s/files/1/0606/9809/9928/files/Nickel_S4UL_Update_Aug_2015_Final.pdf?v=1637256541)

Thank you. We will update our appendix reference from the 2014 reference. Nevertheless, the GAC values applied and referenced in our report are consistent with the updated Nickel S4ULs. As such, there are no amendments required to our risk assessment.

19. The phenol S4UL was subject to errata (https://cdn.shopify.com/s/files/1/0606/9809/9928/files/Errata_S4UL_version1.1.pdf?v=1637256541). Any assessment would need to include these updated values.

Thank you. We can confirm that the maximum reported phenol concentrations on the site do not exceed the updated Phenol GAC values.

20. BRE 211 was updated in 2023; this version needs to be used. The 2015 version is referenced within the report.

Apologies, we acknowledge the latest version and can confirm that it is indeed this which has been considered within the report and the assessment. This represents an error in our reference list.

21. BS 8485 was updated in 2019; this version needs to be used. The 2015 version is referenced within the report.

We acknowledge the latest version and can confirm that it is indeed this which has been considered within the report and the assessment. This represents an error in our reference list.

22. SOBRA groundwater vapour guidance suggests that where groundwater is particularly shallow (less than 0.65 m below ground level) the GAC_{gw} may not be suitably protective. Conversely, where groundwater is present at a depth greater than 0.65 m and the GAC is exceeded, practitioners may seek to undertake further data collection and/or site-specific assessment, to better represent the actual depth of groundwater/perched water at the site. Fluctuation of groundwater elevations should also be considered in any further assessment and the applicability of the GAC_{gw}. This is not discussed within the relevant section of the report and should be considered (even though the concentrations are significantly below the GAC_{gw}) to show it has been considered.

Thank you for the comment. We acknowledge the above. Please note; however, that whilst shallow groundwater has been observed at the site (as shallow at 0.10m bgl), the average groundwater depth associated with the shallow groundwater body lies at 2.02m bgl (calculated by looking conservatively at averaging the shallowest groundwater encountered at all wells where shallow groundwater was detected). In addition, the proposed finished floor level for the building lies at 120.80m bgl and current levels in the car park area are Circa 119.60m meaning that shallow groundwater level will lie beyond the 0.65m threshold below the FFL and indeed when compared with the current average groundwater depth will lie typically 3.22m below the FFL.

In addition, when considering that the concentrations are significantly below the criteria it is considered there are sufficient lines of evidence to demonstrate that there is no potential risk to the end users from VOCs in the groundwater.

TE1880-TE-00-XX-RP-GE-004-V01 - DQRA Conclusions:

“On this basis, it is considered that the reported concentrations of chrysotile and amosite asbestos within the Made Ground materials will present a minimal risk for the proposed commercial land use, including soft landscaped areas.” There is no discussion as to what this means. Is a clean cover system required still? It is not explicitly stated within the document what the assessment concludes beyond providing results of calculations in regard to asbestos exposure. I believe I understand what is being said, but it needs to be said. These are ultimately documents which anyone can download and read, and so we should be clear in what we are saying, and what our conclusions are, and how we have reached them.

We can confirm that the results of the asbestos Detailed Quantitative Risk Assessment (DQRA) effectively indicate that there is no current requirement for a clean cover system based on asbestos risk. However, we have consciously not definitively concluded that a clean cover system is not required within this report, as we remain mindful of our recommendation to undertake further ground investigation and risk assessment within the proposed landscaped areas to the east, which are intended for future development. These additional investigations may, in theory, identify contamination—potentially including asbestos—that could necessitate the implementation of a clean cover system. As such, the final determination regarding the need for a clean cover system cannot be made until the recommended additional works have been completed.

Comments:

1. In 4.4, the text of the report says “Landscape maintenance workers are assumed, very conservatively, to conduct activities in landscaped areas under dry and dusty conditions for an average of 1 hour per day for 68 days per year (FiTi) consistent with the approach in example 13.3 in CIRIA C733.” There is no “example 13.3 within CIRIA C733. There is a box 13.3. Can it please be clarified what is being referred to here?

We were referring to Box 13.3 'Example calculation based on predictive modelling (after Addison et al, 1988)'. In this example, we see an assumption being made with regards to residents: 'Residents were assumed to conduct activities in gardens under dry and dust conditions for an average of 90 hours per year'. Box 13.2 describes in the example how exposure during direct interaction with the ground (such as gardening) would only need to be considered on dry and dusty days. Box 13.3 demonstrates an assumption for a residential scenario of 1 hour per day for 90 days a year. Whilst it is not directly applicable to a commercial setting, it is the **principle** of applying the reasonable assumption of a length of time that landscape / maintenance works involving digging into the soils would be carried out during **dry and dusty conditions**. We have assumed one hour a day based on discussions with Hopwood Hall staff (Project Officer) with respect to landscape maintenance workers average length of time within soft landscaped areas.

2. Were the colleges landscaping manager/contractor spoken to understand hours worked? To my mind, most digging work would be done during spring, with general maintenance (mowing, pruning, etc.) done during summer and preparation for winter done in autumn, which would therefore likely decrease the number of dry days where soil was worked/turned over.

Yes, we have assumed one hour a day based on discussions with Hopwood Hall staff (Project Officer) with respect to landscape maintenance workers average length of time within soft landscaped areas and have used local weather data publicly available on the Met Office website in order to ascertain the number of dry and dusty days per year.

3. What is the source of the "Rochdale weather station" ?

The link to the publicly available rainfall data is here:

<https://www.metoffice.gov.uk/research/climate/maps-and-data/location-specific-long-term-averages/gcw2ymd6s>

This refers to 'Station: Rochdale'

4. With regards to 68 days per year, have the effects of climate change been taken into account? Or is it taken into account with the following sentence "The rainfall data from 1991 - 2020 has been used as it accounts for more dry days per year and is taken from a large data set therefore is the more conservative value to use" . I am interpreting this as you have used this data as it demonstrates drying as opposed to more historical data re climate change, say 1960-2020, but it is not abundantly clear what is actually being said.

Yes, we have specifically used the latest available rainfall data which considers a long term average during a period of global warming, as opposed to using older data sets (such as 1961-1990).

5. BaP, although mentioned within the report, is not covered, and I assume will be subject to the further works set out within the recommended “additional, post-demolition, soil sampling and risk assessment” to be undertaken in the vicinity of the proposed contoured landscaped area in the east of the site.

That is correct. Further consideration of this will be made during the additional, post-demolition, soil sampling and risk assessment.

Sorry for all the points, I think it is important to get these things ironed out. Whilst I generally agree that the information provided demonstrates the site will pose little risk, I do believe that some further assessment/clarification is required. Thank you again for your comments, we sincerely hope that the above addresses your queries.

For and on behalf of

TIER ENVIRONMENTAL LTD

A handwritten signature in black ink, appearing to read "Adrian Read".

Adrian Read MEng (Hons)

Technical Director

Tier Environmental Ltd