

## **Feedback on Factual report**

We have reviewed the factual monitoring report Daneshill and Maw Green STF Permit Appeal – Provectus STF Factual Monitoring Data for FCC Recycling (UK) Ltd and 3C waste Ltd dated 02/02/2024.

Regarding the monitoring standards and techniques applied, we have not had sufficient time to fully review the data and applied methodology used so we are unable to agree or dispute this.

We have however reviewed the factual document and data in its context and have highlighted issues which could potentially affect the level of confidence that can be applied to the monitoring data. As a result we are not satisfied that the monitoring reflects a reliable assessment of the maximum processing capacity which reflects the risks posed to human health and the environment.

### **1) Amount of waste processed and percentage of tonnage actually containing asbestos**

#### **1.1. Edwin Richards**

Section 2.4, page 10 (16 of PDF) Table 2.7: 'Summary of post-processed soil sites of origin and processed amounts for ERQ' states the total material validated, during dates 24 September 2019 – 22 March 2023 (3 years 6 months) was 83,494.59 tonnes.

Section 2.3, page 7 (13 of PDF) Table 2.5 'Summary details of pre-processed acceptance soil test results for ERQ' details pre-processed soil results for ERQ. It states the total number of soil samples were 769 of these 589 samples had no asbestos detected.

This suggest that 76% pre-treatment samples ultimately processed potentially had no detectable asbestos and when compared to the 83494.59 tonnes of waste processed this is a substantial amount of waste processed with no asbestos.

#### **1.2. Maw Green**

Section 3.4 Page 21 (27 of PDF) Table 3.6 'Summary of post-processed soil sites of origin and processed amounts for Maw Green' - states the total material validated, sampled during dates 15 August 2022– 19 October 2023 (11-month period) was 38,130 tonnes.

Section 3.3 Page 19 (25 of PDF) Table 3.4 'Table 3.4: Summary details of pre-processed acceptance soil test results for Maw Green' - states the total number of soil samples taken was 118 of these 69 samples had no asbestos detected.

This suggests that 58% samples of the ultimately processed potentially had no detectable asbestos and when compared to the 38,130 tonnes of waste processed this is a substantial amount of waste processed with no asbestos.

#### **1.3. Concern raised**

**This data shows that a large percentage of the waste processed had no detectable asbestos which suggests the waste being processed and the monitoring undertaken does not reflect a worst-case scenario. Potentially the operator could take waste and samples at a different time/year and 100% of samples could have detectable asbestos, therefore more of the waste could contain asbestos increasing the risk. This has not been reflected in the monitoring.**

If the operator stated the material actually taken represented the worst-case processing capacity, then we would have the option to restrict the permit to percentage contamination as such within the conditions of the Environmental Permit.

## **2) Amount of waste processed during the trial is comparison to the permitted amount.**

### 2.1. Edwin Richards

Section 2.4, page 10 (16 of PDF) Table 2.7: 'Summary of post-processed soil sites of origin and processed amounts for ERQ', states Total Material Validated for Edwin Richards Quarry was 83,494 tonnes between 24 September 2019 – 22 March 2023 (3 years 6 months)

In addition, 76% samples of this waste processed over 3 years 6 months potentially had no detectable asbestos. (see section 1.1)

As an estimate this could mean that (based on 24% of samples detecting asbestos in 27,831 tonnes in a year (total tonnage validated averaged conservatively over 3 years) that potentially only 6,679 tonnes processed per year contained asbestos.

When compared to the fact the site is permitted to accept 89,999 of hazardous waste per year (which could technically be composed of up to 100% detectable asbestos) this does not represent a worst-case scenario.

### 2.2. Maw Green

Section 3.4 Page 21 (27 of PDF) Table 3.6 'Summary of post-processed soil sites of origin and processed amounts for Maw Green', states Total Material Validated for Maw Green was 38,130 tonnes between 15 August 2022 – 19 October 2023 (1 year 1 month)

In addition, 58% samples of this waste processed over 1 year and a month potentially had no detectable asbestos (see section 1.2)

As an estimate this could mean that (based on 42% of samples detecting asbestos in 38,130 tonnes) that potentially only 16,014 tonnes processed per year contained asbestos

When compared to the fact the site is permitted to accept up to 50,000 tonnes per year. (which could contain technically up to 100% detectable asbestos) this does not represent a worst-case scenario.

### 2.3. Concern raised

**The amount of waste validated annually does not reflect the amount of waste the operator's site is permitted to accept annually. Therefore potentially a worse case processing capacity of waste containing asbestos is not taken into account or at least clearly extrapolated in the monitoring. It is entirely reasonable the Environment Agency makes its regulatory decisions based on reliable data that represent a reasonable worst-case scenario. This data as it currently stands does not allow the Environment Agency to do this.**

**In addition, the amount of waste annually that contains asbestos was significantly lower than the worst case the site is permitted for. A worse case annual amount of waste containing asbestos is not taken into account or at least clearly extrapolated in the monitoring.**

### **3) Processing method/activity based sampling during monitoring –**

#### **3.1. Edwin Richard Quarry (ERQ)**

Section 2.2 page 2 of document (page 8 of PDF) paragraph 2 states 'The most recent air monitoring data for ERQ is predominantly limited to the emissions relating to the delivery of soil for subsequent hand picking inside the building on site. However, the asbestos emissions to air from a soil screener inside the building is reported from a period when a mobile treatment licence was deployed between 22 June 2022 and 21 September 2022.'

#### **3.2. Concern Raised**

**This suggests that for the Edwin Richards Quarry site, only approximately 3 months of the monitoring relates to the mechanical treatment of waste, the rest of the monitoring was taken when they were only handpicking the waste.**

**It has not been made clear how this 3-month period correlates with the rest of the air and soil monitoring to reflect the worst-case risk posed by the mechanical screener.**

**Hand picking of waste poses a significantly lower risk of material being broken by heavy machinery and so is not representative of the expected activities at the site so is likely to give lower levels of asbestos fibres in the monitoring.**

### **4) Linking the sets of data together**

4.1. Multiple sets of data are provided on air monitoring, soil content monitoring, moisture monitoring but there is limited if any interpretation linking the different results together – e.g. there's no we sampled load A on day B – had X asbestos and Y% moisture – then screened it and got Z fibres/ml.

4.2. For example, the operator outlines the soil moisture, but it is not clear how this data corresponds to the other monitoring data. It is also not clear whether the operator was actively controlling the water moisture and how the air monitoring results reflect their active management of moisture.

#### **4.3 Concern raised**

**The operator does not make it clear how the different data sets correspond and cross reference how the result correlate with one another to demonstrate their conclusions.**

## **5) Forms of asbestos pre-processing – Pie charts**

The pie charts provided are in grey scale, so they are very hard to interpret. However looking at the different shades it appears to show the following.

### **5.1 Edwin Richards**

Section 2.3, Page 8 of document (page 14 of PDF) Figure 2.7 'Percentage detection of asbestos forms in ERQ pre-processed soil sample results'

Assuming we are correct on the shades of grey provided, in the waste accepted for 76% of forms no asbestos was detected.

There are however 6 references to 1% content which could potentially be insulation, fibre bundles, lagging, board (the grey scale makes it unclear)

If this is based on the 179 pre-processing samples of detected asbestos stated in Table 2.5: 'Summary details of pre-processed acceptance soil test results for ERQ' (page 7 (13 of PDF)

1% of 179 is 1.79 samples (Table 2.4: Provectus sampling frequencies indicates could be around 100 – 500 tonnes of soil) that could contain other higher risk forms of asbestos.

### **5.2 Maw Green**

Section 3.3, Page 20 of document (page 26 of PDF) Figure 3.7 'Percentage detection of asbestos forms in Maw Green pre-processed soil sample results'

Assuming we are correct on the shades of grey provided that in the waste accepted 58% there was no asbestos detected

In addition, there is reference to 1%, 2% and 4% of different asbestos forms which could be insulation, fibre bundles, lagging, board (the grey scale makes it unclear)

If this is based on the 49 pre-processing samples of detected asbestos stated in Table 3.4: 'Summary details of pre-processed acceptance soil test results for Maw Green' (page 19 (25 of PDF)

4% of 49 is 1.96 samples (Table 3.3 Provectus sampling frequencies indicates this could be around 100 – 500 tonnes of soil) that could contain other higher risk forms of asbestos.

### **5.3 Concern raised**

**These pie charts indicate that there is the potential for the waste processed to potentially contain other forms of asbestos (other than cement bonded asbestos) which are more likely to release fibres when subject to high intensity mechanical treatment.**

## 6) Forms of asbestos post-processing – Pie charts

The pie charts provided are in grey scale so hard to interpret, however looking at the different shades it appears to show the following.

### 6.1 Edwin Richards

Section 2.4 page 11 of document (17 of PDF) Figure 2.10: 'Percentage detection of asbestos types in ERQ post-processed soil sample results' show that there are records of 1% of other forms of asbestos in the post processed soil samples.

### 6.2 Maw Green

Section 3.4 page 23 of document (29 of PDF) Figure 3.11: Percentage detection of asbestos forms in Maw Green post-processed soil sample results show that there are records of 1% of other forms of asbestos in the post processed soil samples and 48% or 49% of fibres and clumps (hard to tell due to grey scale).

### 6.3 Concern raised

**This suggests that post processing there are still other forms of asbestos in the waste after processing. The risk that this poses beyond the treatment process could be considerable and it is reasonable for the Environmental Permit to limit the potential end uses to control the risk to human health and the environment.**

## 7) Post processed soil validation data vs pre-processing validation data

### 7.1 Edwin Richards

Edwin Richards pre-treatment sampling Section 2.3, page 7 (13 of PDF) Table 2.5 'Summary details of pre-processed acceptance soil test results for ERQ' showed only 179 of 768 samples had detectable asbestos. This suggests that pre-processing only 23% of the input samples had detectable asbestos.

Section 2.4, page 10 (16 of PDF) Table 2.8 'Summary details of post-processed validation' soil test results for ERQ outlines the asbestos content of the waste that that has been processed. It states that out of 278 samples taken that 71 samples had detectable asbestos. This suggest that post treatment 25% of the samples of the total material validated still had detectable asbestos. This indicates a percentage increase in samples detecting asbestos.

### 7.2 Maw Green

Section 3.3 Page 18 (25 of PDF) Table 3.4 'Table 3.4: Summary details of pre-processed acceptance soil test results for Maw Green' states of 118 sample 49 had detectable asbestos. Maw sampling therefore showed 41% of the input samples had detectable asbestos.

Section 3.4, page 21/22 (27 of PDF) Table 3.7 Summary details of post-processed validation soil test results for Maw Green outlined the asbestos content of the waste that has been processed. It states that out of 89 samples taken, 46 had detectable asbestos. This suggests that 51% of samples had detectable asbestos of the total material validated. This indicates a percentage increase in samples detecting asbestos.

### **7.3 Concern raised**

**This suggests in both cases that asbestos is still potentially present in a similar or higher percentage of samples from the post treated fraction (this is despite up to 50% less samples being taken at ER compared to the pre-treated fraction). This leads to potential concerns about the effectiveness of the treatment processes and mitigation and the potential for spread and dispersion of fibres during mechanical treatment into the output fractions, increasing the level of difficulty of onward processing. This not been explained by the operator.**

## **8) Period of Highest readings of asbestos post processing**

Section 2.4 Page 12 of document (18 of PDF) Figure 2.12: 'Post-processed soil asbestos concentrations for ERQ' shows that the highest sample reading for soil asbestos concentrations was around 27 August 22.

As stated in Section 2.2 page 2 of document (page 8 of PDF) paragraph 2 the mobile treatment licence at Edwin Richard Quarry was deployed between 22 June 2022 and 21 September 2022.

### **Concern Raised**

**The post processed soil asbestos readings suggest higher concentration results during the period in which the mechanical treatment was in operation. This could potentially indicate higher asbestos release as a result of mechanical processing and possible ineffective treatment/mitigation. This has not been explained by the operator.**

## **9) Asbestos detected in the dust on the concrete**

Section 3.10 page 42 of document (48 of PDF) paragraph 3 states 'Samples were taken of soil designed for treatment (pre-screened soil), post-screened fine material, and tracked/sedimented soil dust on the STF concrete hardstanding (slab).'

Section 3.10, page 44/45 (50 of PDF) Table 3.15 'Hydrock soil sample DETS results' states that sample locations include concrete slabs and the asbestos screen description states Chrysotile present as fibre bundles and Chrysotile present in microscopic cement debris with Respirable Fibre Concentration (f/mg) of for example 28400.

### **Concern raised**

**If fibres are detected on the STF hard standing during the trial periods, then will operation over a significant period of time, under an installation permit lead to significant entrainment of concrete surfaces and other nearby surfaces? This is not justified by the operator.**

**Also, we note the proposal at Daneshill was for a crushed concrete base rather than a concrete slab, which would result in increased accumulation/entrainment of fibres. There is no indication given, that the operator can minimise this or decrease entrainment on surfaces especially those which are not concrete pads such as the crushed concrete surfaces. Note we do not consider crushed concrete surfaces to represent BAT for this activity.**

## **10) Air monitoring at ERQ – Increased frequency of emissions during uncovered mechanical screening compared to other phases of operation**

Section 2.2 Page 4 of document (10 of PDF) Table 2.3 'Summary details of air monitoring results split between phases of operation', states (column 4 row 4), 20% of samples with countable fibres from 593 samples (row 1) when no screening operation is taking place (column 4).

This increased when mechanically screening and covered with HEPA to 26% (column 3 row 4) samples with countable fibres based on 128 samples (row 1).

This is then significantly increased when screener operated uncovered to 44% of samples with countable fibres (column 2 row 4) from 88 samples (row1).

### **Concern raised**

**This suggests that prior to operation there are samples detecting fibres and the operation of the mechanical screener increases the frequency of fibres being released and detected in the building, particularly when operated without enclosure and abatement.**

## **11) Air monitoring locations at ERQ**

Section 2.2 Page 2 (8 of PDF) Table 2.1 'Summary details of air monitoring at ERQ' shows the 4 monitoring locations chosen during the screener trial, 2 of which (IJ000773 and IJ000776) look to be in doorways where there is likely to be turbulent air and therefore may not represent true ambient/controlled conditions. We also note no monitoring took place in rear of the building where the air movement is more static and dust/fibres more potential to accumulate. Stockpiles that accumulate are likely to dry out and then become resuspended again posing a risk to staff, human health and the environment.

The lack of real time wind rose data again means that the assumptions for upwind and downwind which are made only occasionally throughout the day may also give rise to data which are not representative of the actual concentrations found in the ambient air.

### **Concern raised**

**This suggests that the levels of fibres detected at the locations may not be fully representative of the actual concentrations and therefore not fully quantify the amount of fibres present in ambient air.**