Cornwall Wildlife Trust

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MLA/2025/00157 Falmouth Docks Development

Further representation from Cornwall Wildlife Trust regarding sediment contamination 2/08/2026

Cornwall Wildlife Trust submitted a Holding Objection to this application on the 4th of September 2025. This letter supplements that objection. It does not withdraw it. Since submitting our original response, we have examined the applicant's own sediment chemistry in more detail, and our findings both reinforce and sharpen our concerns about contaminated material, to the point where we consider the current evidence base for the proposed disposal strategy wholly inadequate. We set our results out below, together with the difficulties we encountered simply accessing and assembling the underlying data.

Our original concerns stand

For the avoidance of doubt, the concerns in our aforementioned Holding Objection remain. In brief, these were: the end-use justification for the dredge depth; the effects of approximately 50 weeks of pile-driving on cetaceans and seals (and our contention that their presence is underestimated by a sightings-only baseline); best-case-only sediment plume modelling that omits adverse weather; risks to irreplaceable maerl, seagrass and kelp, both at the dredge site and the disposal site; and the need for independent monitoring.

Our original section 6 welcomed the recognition of contaminated sediment and asked for sampling during operations. Having now analysed some of the incredibly difficult-to-extract core data, we consider that request necessary but in no way sufficient: the problem begins earlier, with whether the contamination at the site has been adequately characterised.

What we did

We extracted the full sediment chemistry from the Factual Ground Investigation Report (ES Vol 2, TA 8.1). 81 depth-resolved samples across all 21 vibrocores, for the metals, organotins, PAHs and hydrocarbons reported. We compared each result against the Cefas Action Levels, examined how contamination varies with depth and between cores, and placed the site's tributyltin (TBT) values against the national distribution of UK dredged-sediment TBT (5,853 records held on the Cefas data portal). Our headline findings follow:

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1. Contamination is severe and widespread

21 of the 81 samples exceed the higher Cefas Action Level 2 (AL2) — the level above which material is unsafe for disposal at sea — for *at least* one contaminant, spread across *16 of the 21 cores*. Peak concentrations are extreme: TBT to 17.6 mg/kg (17.6× AL2), zinc to 8,784 mg/kg (11× AL2), lead to 1,428 mg/kg, copper to 1,349 mg/kg and mercury to 17.8 mg/kg (5.9× AL2). This is not a site with isolated contamination. It is pervasively contaminated across most of the proposed dredge footprint, with many more samples exceeding the lower AL1 threshold.

2. Contamination levels are extreme in the national context

To put the TBT results in context, we compared them against the Cefas national dataset of UK dredged-sediment TBT (n = 5,853, 1998–2019). The national median is 0.022 mg/kg; approximately three-quarters of UK samples fall below AL1. *The Falmouth maximum of 17.6 mg/kg lies at the 99.6th percentile of that national distribution* — the top 0.4%. Only 22 of 5,853 records nationally exceed it. In other words, these samples suggest that the docks sediments are among the most TBT-contaminated anywhere in UK waters. The focus on TBT here is illustrative, because there are multiple other contaminants that matter but, importantly, we know that TBT is acutely toxic to molluscs and crustaceans at extremely low levels in the water column (in the order of ng/L). By example, TBT causes sharply elevated mortality and imposex among larval European oysters *Ostrea edulis* at just 20 ng/L (0.00002 mg/kg) (Zapata-Restrepio et al., 2023 – PLoS One 18(2), e0280777), while it effectively stops growth and development of *Homarus* species lobster larvae at 1 µg/L (0.001 mg/kg), and induces acute mortality among larvae of the brown shrimp *Crangon crangon* at 1.5 µg/L (0.0015 mg/kg) (Parmentier et al., 2019 – Front Mar Sci 6, 633).

The TBT distribution in the docks data is clearly bimodal, with an initial lower contamination peak lower peak, followed by a second higher peak, indicating the presence of severely contaminated hotspots. This means that detailed hotspot

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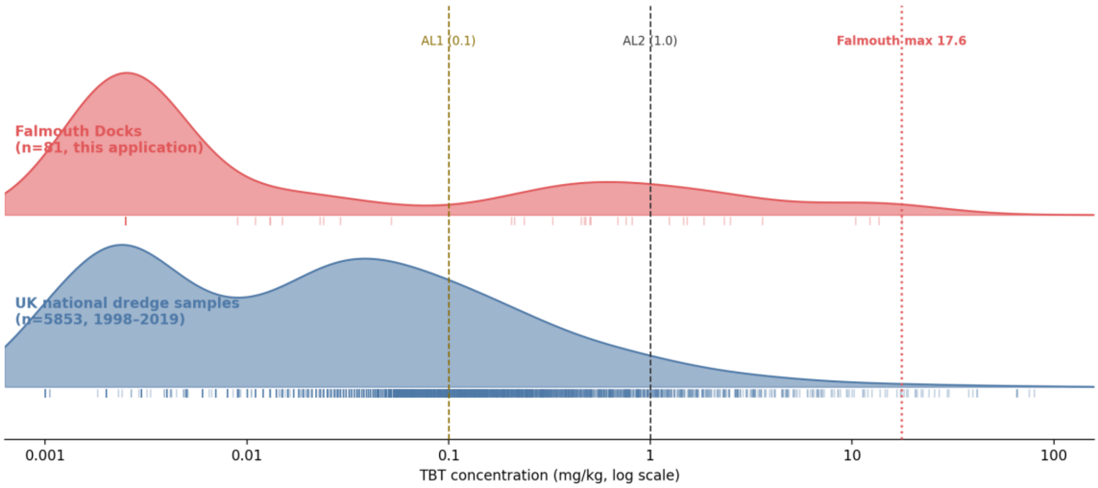
identification is an absolute must (see our 4th point below for more on this):

TBT in sediment: Falmouth Docks vs the UK national distribution



National median 0.022 mg/kg. Falmouth maximum (17.6) sits at the 99.6th percentile of 5,853 UK dredge-sediment records — the top 0.4%.

3. Contamination is not particularly predictable with depth

The disposal strategy depends on separating material suitable for sea disposal from material that must be disposed on land. This separation assumes contamination can be *predicted*, i.e. that it is confined to, or concentrated in, known layers. The applicant's own data does not support that assumption.

For one, contamination does not decrease reliably with depth across the samples taken to date. Mercury exceeds AL2 more often below 0.5 m than at the surface, and is worst of all at 2 m depth in core VC-03. Buried hotspots occur: core VC-01 is heavily contaminated at the surface, clean through the middle, then TBT rebounds above AL2 at 3.6 m. Different contaminants peak at different depths within the same core, which is to say *they are not always reliably correlated with each other*. Six of the AL2 exceedances lie below 0.5 m. With cores spaced roughly one per 11,000 m² (of the order of 100 m apart) and contamination this variable, there is no depth at which the sediment can be assumed clean, and no reliable basis for pre-sorting material for disposal without testing each layer.

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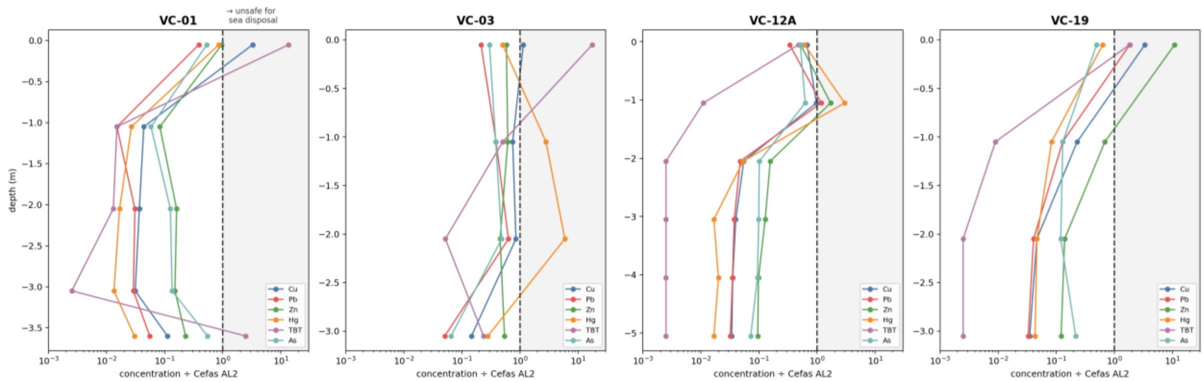

4. Sampling density is too sparse to reliably identify contamination hotspots

Precedents exist for establishing the granularity of sampling required to reliably identify all hotspots, yet it is not clear to us how the data collected to date could ever deliver the requisite detections. Is not enough to, say, double the sample density and assume this will be sufficient. Test sampling should be planned explicitly to determine the spatial variability of contamination, and this should be used as a basis for whole site sampling. Twenty-one cores across 232,500 m² is approximately one sample per 11,000 m². Established guidance for contaminated-site characterisation scales sampling density to heterogeneity and to the size of hotspot that must be detected, and provides formal methods for determining the grid spacing required to detect a hotspot of a given size at a given confidence. A systematic grid reliably detects only hotspots larger than its spacing. Given contamination levels demonstrably varying by orders of magnitude between adjacent cores, a spacing of this order has a low and quantifiable probability of detecting the sub-100 m hotspots the data implies are present. No such detection-probability analysis appears to have been presented.

5. Direct biological testing should be required

The assessment rests almost entirely on bulk chemistry against Action Levels. Cefas's own guidance is explicit that the Action Levels are not pass/fail criteria but triggers for further assessment, to be used within a weight-of-evidence approach alongside

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bioassays; the authors of the recent Cefas Action Level review specifically recommend greater use of bioassays, noting current UK use is limited. A standard, comparatively inexpensive whole-sediment bioassay (for example the well understood *Corophium volutator* amphipod test, ideally with a sublethal endpoint) would measure the actual toxicity and bioavailability of the material, and would capture hazards the chemical suite did not test for — including PFAS, microplastics and contemporary antifouling biocides, none of which were analysed. Given the nationally extreme concentrations of known contaminants present in samples, we request that such testing be required as part of the assessment. It is the emergent totality of effects of all known and unknown pollutants on life that really matters here, not whether specific contaminants exceed thresholds in specific areas.

6. Difficulties accessing and synthesising the data

We wish to record, for the MMO's attention, that establishing these facts required disproportionate effort, and is the central reason why we are bringing these details to your attention at this time, well after the consultation window closed. The sediment chemistry is distributed across 288 pages of the Factual GI Report, split between four separate laboratory report series, in per-sample certificate tables whose determinand headings and units are not consistently machine-readable, and with units that vary within a single table (for example PAH congeners reported in µg/kg alongside hydrocarbons in mg/kg). The relevant national comparison data, while public, is held behind a portal interface that caps and paginates downloads. None of this is presented in a consolidated, analysis-ready form. Indeed, if some of the above analyses contain errors, it will be as a result of the poorly formatted, inaccessible data in the first instance. We therefore welcome clarifications and corrections if there are any to be made.

The consequence of this data opacity is that a consultee cannot readily verify the applicant's central claim — that contaminated material can be reliably identified and separated for disposal — without reconstructing the dataset from scratch. We do not suggest this was deliberate, but the practical effect is to place a significant barrier in the way of scrutiny of the most environmentally consequential part of the application. We ask that the applicant be required to provide the full sediment dataset in a consolidated, tabular, analysis-ready format with consistent units, and that adequate time be allowed for its review. It is 2026, and open data standards should be the bare minimum for all marine developments, let alone a nationally significant infrastructure project in an internationally important marine protected area.

ENDS.