

▪ **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2 H351

▪ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3 H226, Asp. Tox. 1 H304, STOT RE 2 H373, Muta. 1B H340, Carc. 1B H350, Repr. 2 H361d, Aquatic Chronic 2 H411

▪ **confirm TPH has NOT arisen from diesel or petrol**

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

(enter justification for selecting this species)

beryllium {beryllium oxide}

(enter justification for selecting this species)

boron {diboron trioxide; boric oxide}

(enter justification for selecting this species)

cadmium {cadmium sulfide}

(enter justification for selecting this species)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

(enter justification for selecting this species)

copper {copper sulphate pentahydrate}

(enter justification for selecting this species)

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

chromate unlikely to be on site

mercury {mercury dichloride}

(enter justification for selecting this species)

nickel {nickel sulfate}

chromate unlikely to be present on site

selenium {selenium compounds with the exception of cadmium sulfoxyselenide and those specified elsewhere in this Annex}

(enter justification for selecting this species)

vanadium {divanadium pentaoxide; vanadium pentoxide}

(enter justification for selecting this species)

zinc {zinc sulphate}

chromate unlikely to be present on site

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**

HazWasteOnline Classification Engine Version: 2021.155.4797.9144 (05 Jun 2021)

HazWasteOnline Database: 2021.155.4797.9144 (05 Jun 2021)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2019 - UK: 2019 No. 720 of 27th March 2019

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

Appendix D Waste License and Environmental Permit



Material Description	EWC	Origin	Material carrier			Disposal site/Treatment works	
			Name	License Number	Expiry Date	Name	License No: Exemption Ref.
Scrap Metal							
Topsoil							
Non-hazardous waste							
Asbestos impacted hazardous waste							
Hazardous waste							
Construction / demolition rubble							
Free product contamination water							

Appendix E Waste Disposal Records



Waste Disposal Log

Waste Disposal Records

Date Removed	Waste Type	Identifying of the person removing the waste	Site the waste of being taken to and whether licensed or exempt	Waste carrier and registration number	Confirmation of delivery*

*Evidence of waste carrier registration and waste transfer or hazardous waste consignment notes for each removal of waste should be provided either as part of the plan, or filed and cross references

Appendix F YAHPAC Verification Requirement





VERIFICATION REQUIREMENTS FOR COVER SYSTEMS

Technical Guidance for
Developers,
Landowners and
Consultants



Yorkshire and Humberside
Pollution Advisory Council

The purpose of this guidance is to promote consistency and good practice for development on land affected by contamination. The local authorities in Yorkshire, Lincolnshire and the North East of England who have adopted this guidance are shown below:



Contents Page

<i>Introduction</i>	4
<i>Process of Verification</i>	4
<i>Overview Flowchart</i>	5
<i>Key Points</i>	6
<i>Appendix 1a – Sampling & Testing Matrix</i>	10
<i>Appendix 1b – Questions to Ask Your Soil Supplier Relating to Soil Quality</i>	10
<i>Appendix 2 – Checklist for Verification Reports</i>	11
<i>Appendix 3 – Examples of Good Quality Photographs</i>	12

Disclaimer

This guidance is intended to serve as an informative and helpful source of advice. It is intended to review this guidance annually, but readers must note that legislation, guidance and practical methods are inevitably subject to change and therefore should be aware of current UK policy and best practice. This note should be read in conjunction with prevailing legislation and guidance, as amended, whether mentioned here or not. Where legislation and documents are summarised this is for general advice and convenience, and must not be relied upon as a comprehensive or authoritative interpretation. Ultimately it is the responsibility of the person/company involved in the verification of land contamination to apply up-to-date working practices and requirements.

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Consultation

39 Local Authorities and 6 Environmental Consultants were consulted over a four week period in 2010 during the production of the initial guidance. At that time, consultation comments were considered by the review panel and a number of revisions were made to the guidance to reflect these comments. Given that no major changes have subsequently taken place, only Local Authorities were consulted during the production of this version [3.1] of the guidance.

Introduction

This guidance has been produced to help developers ensure that they can demonstrate that material brought onto a development site for gardens or areas of soft landscaping are suitable for use and do not present harm to people, the environment and/or property. It is intended to improve the quality of reports submitted to Local Authorities on this matter and to give contractors/consultants a point of reference to obtain approval for such work from their client. This guidance does not cover the geotechnical suitability of soils or material or chemical suitability that does not affect human health e.g. sulphates.

The verification of cover systems should be an integral part of the remediation project and agreed between developers and regulators at an early stage in the project.

There are some UK guidelines regarding verification, for example CLR 11¹ and the document on verification of remediation². This guidance note should be considered as supplementary advice in conjunction with these documents.

This guidance relates to the remediation of land contamination by using cover systems; however, the verification of the quality of imported material is equally important in other situations, such as raising levels for flood prevention or general landscaping works. This guidance could also be used in such instances.

The Process of Verification

Implementation plans for remedial works should always be site specific. Where a cover system and potentially, excavation, is the main remedial method or a component of an overall site remediation, specific goals will need to be set that are linked directly to the risk management strategy for the site in question.

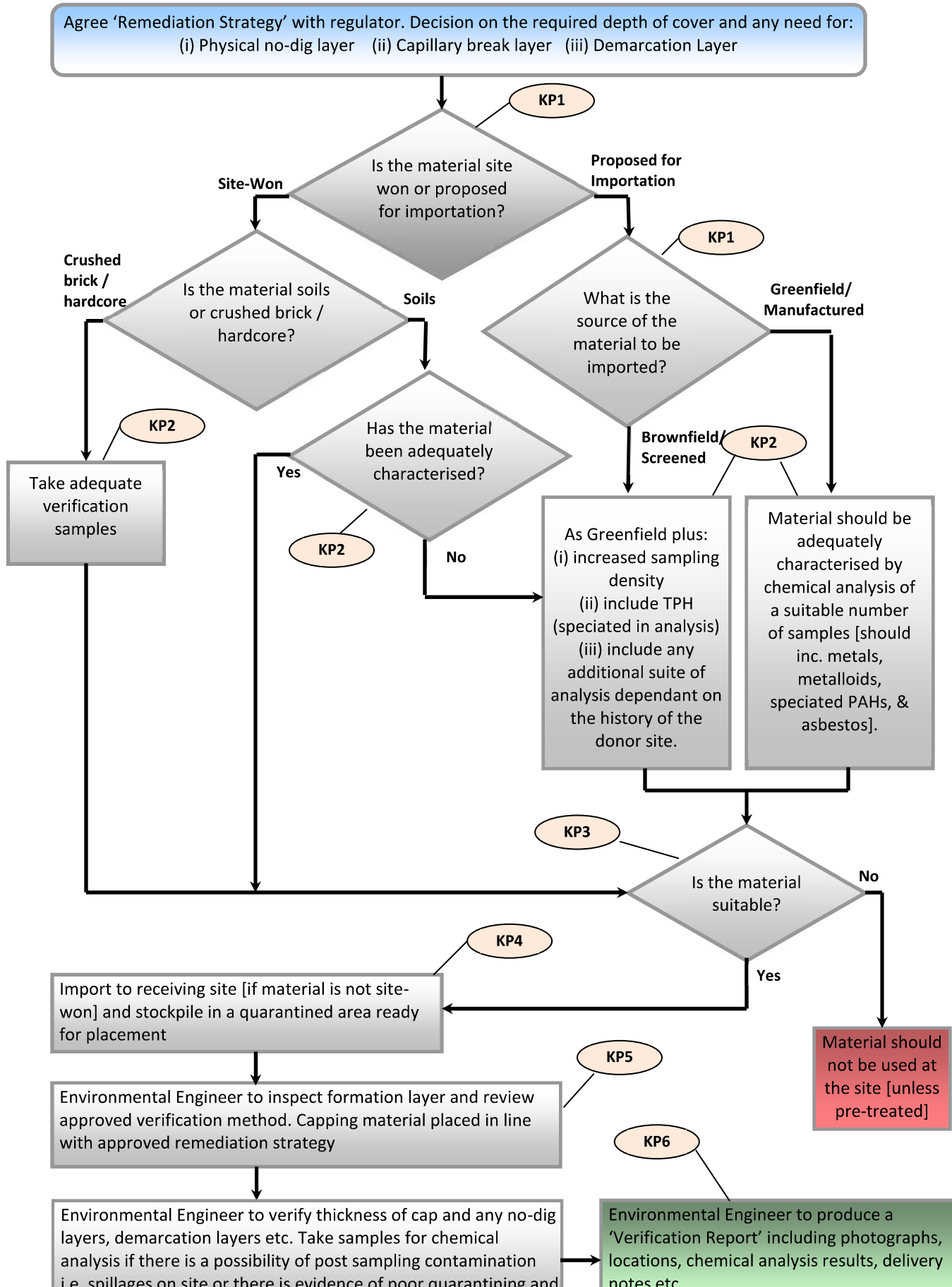
For cover and containment systems, verification will normally depend upon the provision of defensible measurements, observations and records. Critical factors to be considered are:

- What should be measured?
- When should they be measured?
- Where measurements need to be taken, what is the appropriate monitoring regime i.e. number and frequency of samples?
- Statistical constraints on sampling.

¹ "Contaminated Land Report 11 - Model Procedures for the Management of Contaminated Land". Environment Agency, September 2004.

² "Verification of Remediation of Contaminated Land. Environment Agency, 2010 [draft report].

Overview Flowchart



Key Points

KP1 Source of Material	Material can be sourced from site won material i.e. crushed brick /hardcore or site-won soils from existing open or landscaped areas. In the interest of sustainability, Local Authorities promote the use of such site-won material providing that they are suitable for the intended end use of the site. Alternatively, material can be sourced from other developments and commercial companies. Dependent on the source of the material it can be classified as either from a '<u>Greenfield/Manufactured</u>' or '<u>Brownfield/Screened</u>' source. Broadly speaking material can be classified as follows: <u>Greenfield</u> - if it can be demonstrated that it has not been developed and that no past contaminative uses have occurred at the site. <u>Manufactured</u> – from a commercial company who manufacture material by mixing or blending mineral soils (subsoil or sand) with an organic amendment (compost). <u>Brownfield</u> – material from a donor site that has previously been developed <u>Screened</u> – material from a company who deal with skip/demolition waste which is screened for unsuitable material i.e. bricks, wood, plastic etc.
KP2 Characterisation of Material	It is essential that material is inert and suitable for its intended use. Evidence of the source of the material should be provided to the Local Authority. What is required is a defensible method to ensure the verification proposals are site specific and that the level of sampling reflects the need to ensure that imported material are suitable for their intended use. When Should this be Done? Sampling of material should be undertaken as early as possible i.e. <u>prior to placement</u> [for site won material] and <u>prior to importation</u> [for imported material]. This is to avoid the costly exercise of re-excavating <u>unsuitable</u> material and the possibility of cross contamination. Where the assessor has confidence that the material is of sufficient quality (i.e. tested by supplier, used previously) it is acceptable to test the material on site but prior to placement. Although, if it is deemed <u>unsuitable</u> it would have to be either removed off site or pre-treated at the cost and time of the developer. What about Certificates from Commercial Suppliers? Where the material is provided by a commercial company, certificates or other industry Quality Protocol compliance i.e. WRAP, will normally be

accepted. This is on the proviso that it (i) relates to the actual material being imported to the site and the type and amount of analysis is in line with what is prescribed in Appendix 1a and (ii) the certificates are less than two months old.

Extreme caution should be given to importing material that has been recycled from demolition or skip waste as they could be easily be contaminated e.g. asbestos containing materials. [Please refer to questions you should be asking your supplier in Appendix 1b and include the responses in your report]

British Standard

Imported topsoils should be as specified in BS 3882:2007 as 'suitable for their intended purpose'. BS3882:2007 relates to nutrient content of topsoil and phytotoxic contamination and does not consider contaminants that pose a risk specifically to human health. Soils should be tested for contaminants that are considered to pose a risk to human health in addition to BS3882:2007 to ensure that they are suitable for their intended use.

Initial Screening

A visual / olfactory inspection of the material should be carried out by an Environmental Engineer to ensure that:

- it is a suitable growing medium
- it is free from obvious contamination i.e. staining / free product etc
- it has not come from areas where Japanese Knotweed or other invasive or injurious plants, as specified by the Environment Agency, are suspected to have been growing.
- it is not odorous (could be considered a statutory nuisance)
- it is free from unsuitable material i.e. bricks, brick ties, timber and glass etc)
- there are no visible signs of asbestos containing material (ACM's)

Testing Schedule & Number of Samples

Chemical testing will normally be required on any materials that are to be used as cover material, even where this includes first generation quarried material. This should be carried out by a suitably qualified Environmental Engineer.

Please refer to the Characterisation of Material Matrix in Appendix 1a which details the number of samples to be taken; the testing schedule to be utilised dependant on the nature and source of the material and the acceptance criteria to be used.

KP3 Suitability of Material	Based on the characterisation of material above, the material should be either deemed suitable or unsuitable. Obviously unsuitable material should not be used [unless it is treated to reduce levels of contaminants below agreed target levels i.e. bioremediation – this would have to be agreed and included within the Remediation Strategy] and an alternative source of material should be sought by the developer. If the material is considered suitable it can be imported [if not site won] and stockpiled in a suitably quarantined area [refer to KP4].
KP4 Stockpiling & Quarantining of Material	It is essential that the ‘suitable’ material is either placed in its intended area straight away i.e. soft / landscaped areas or stockpiled in a suitable quarantine area to prevent on-site contamination. In the event that an assessor finds material has been stored in an unsuitable area, samples should be taken to confirm that no cross contamination has occurred [including a visual/olfactory check of the material]. The material should then be suitably quarantined or placed at its intended location immediately.
KP5 Verification of Required Depth	In line with the agreed ‘Remediation Strategy’, it is important to establish that the required depth has been achieved and is consistent across the site. There are two main ways to achieve this: <u>Depth testing in situ</u> – small trial pit excavated to allow measurement of its depth by tape measure or measuring staff. <u>Topographical surveys</u> – accurate survey of the base and final formation layer height to establish the depth of cover. Specific Local Authority Policy Please check with the local Contaminated Land Officer to establish: • which type of method for testing depth is accepted; and • the number of verification areas per property, plot, landscaped area or garden area [some Local Authorities recommend at least 2 per plot] Important Note: Where demarcation, physical no-dig and capillary break layers exist they should be verified for their thickness and presence during the time of their installation. Details of the demarcation layer should be agreed with the Contaminated Land Officer prior to placement. This will include the design, type and strength of the geotextile separator or visual warning membrane. The verification of depth and confirmation of such layers should be carried out by a suitably qualified environmental engineer.
KP6 Reporting	The purpose of verification documentation is to provide transparent reasoning why the remediation was required, a methodology about how it was to be undertaken and proof that the specified works have been