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HFW/jrw/SSRC/Claire/01c

## A Provisional SSRC Template for Soil Contamination

These are proposed / provisional Site Specific Remediation Criteria (SSRC) Soil Contamination Limits to Adopt for CL:AIRE sites.

**Individual Variations might be agreed as necessary to address particular circumstances at specific production & reception sites.**

1.

### Heavy Metals

Metal	SSRC Concentration [mg/kg]	
Cadmium	<i>CLEA Residential Soil</i>	10
Mercury in topsoil	<i>UK Agricultural Soil</i>	1
Mercury in subsoil	<i>Reasonable Local Limit</i>	8
Arsenic in topsoil	<i>C4SL Residential Soil</i>	37
Arsenic in subsoil	<i>C4SL Public Open Space 2</i>	170
Lead	<i>C4SL Residential Soil</i>	200
Lead under hardstanding or below growth soil depths.	<i>C4SL Public Open Space 2</i>	1300
Nickel in Topsoil	<i>UK Agricultural Soil</i>	75
Nickel in Subsoil	<i>CLEA Residential Soil</i>	130
Copper in topsoil	<i>UK Agricultural Soil</i>	135
Copper in subsoil	<i>Reasonable Local Limit</i>	400
Chromium in Topsoil	<i>CLEA Allotment Soil</i>	200
Chromium in Growth Subsoil	<i>UK Agricultural Soil</i>	400
Chromium VI in growth soil	<i>C4SL Residential Soil</i>	21
Zinc in Topsoil	<i>UK Agricultural Soil</i>	300
<i>NB: Atkins At Risk Limit for Zinc is 16900mg/kg. Allowances can be made Topsoil concentrations above 300mg/kg</i>		
Zinc in Growth Subsoil	<i>Dutch Intervention Value</i>	720

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### Nominated Organic / Inorganic Components

Parameter	ATRISK Value [mg/kg]		Proposed Deviation from ATRISK 6% TOC and/or 1% TOC	Proposed SSRC Concentration [mg/kg]
	6% TOC	1% TOC		
Monohydric Phenols	1930	162	<i>Dutch Intervention VReasonable Local Limits ... lower than ATRISK and CLEA Residential Soil Values.</i>	<b>40</b>
Free Cyanide	34	34		<b>20</b>

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### Asbestos

Asbestos in Soils*	Description	Potential Disposal Route	None
Import Soils		<b>None Allowed for Acceptance if present at any concentration</b>	
<i>* A possible scenario if Asbestos is excavated on a site:</i>			
Asbestos	Discrete Visible Pieces of Cement, Board or Insulation	<b>Export as Hazardous Waste</b>	
Asbestos	Dispersed Fibres in Soil at <1000mg/kg	<b>Bury under hardstanding at least 1m from all exposed surfaces.</b>  <b>Export as Non-Hazardous Waste if no Hazardous Waste Components are co-present</b>	

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### BTEX Petroleum Hydrocarbons

BTEX Derivative	ATRISK Value [mg/kg]	
	6% TOC	1% TOC
Benzene	0.87 mg / kg <i>C4SL Residential Soil</i>	
Toluene	610	86.9
Ethylbenzene	350	38.2
o-xylene	250	18.9
m-xylene	240	17.9
p-xylene	230	17.2

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### Total Petroleum Hydrocarbons (TPH)

TPH Derivative	ATRISK Value [mg/kg]	
	6% TOC	1% TOC
TPH Aliphatic C5-C6	259	30.1
TPH Aliphatic C6-C8	14700	69.8
TPH Aliphatic C8-C10	144	9.79
TPH Aliphatic C10-C12	4140	1390
TPH Aliphatic C12-C16	5260	5100
TPH Aliphatic C16-C35	145000	145000
TPH aromatic C5-C7	0.87 mg / kg <i>C4SL Residential Soil</i>	
TPH aromatic C7-C8	-	86.9
TPH Aromatic C8-C10 <i>Excluding BTEX</i>	177	14.8
TPH Aromatic C10-C12	389	57.3
TPH Aromatic C12-C16	687	142
TPH Aromatic C16-C21	804	272
TPH Aromatic C21-C35	1220	888
<b>Total TPH in Growth Subsoil &amp; Topsoil</b>		<b>999 mg/kg</b>
<b>Total TPH in Imported Topsoil</b>		<b>800 mg/kg</b>

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## Polycyclic Aromatic Hydrocarbons (PAH)

PAH Derivative	ATRISK Value [mg/kg]	
	6% TOC	1% TOC
Naphthalene	8.71	0.58
Acenaphthene	2130	588
Anthracene	18,300	8270
Benzo(a)anthracene	8.54	4.52
Benzo(a)pyrene	5 <i>C4SL Residential Soil</i>	
Benzo(b)fluoranthene	9.86	7.72
Benzo(g,h,i)perylene	103	96.2
Benzo(k)fluoranthene	9.86*	7.72*
Chrysene	927	585
Dibenzo(ah)anthracene	1.0	0.838
Fluoranthene	2160	822
Fluorene	1930	615
Indeno(1,2,3-cd) pyrene	9.75	7.31
Pyrene	1550	563
Phenanthrene**	440	95
Acenaphthylene**	920	170
<i>*Provisional values unless exceeded when separate analyses of the Benzo(b)fluoranthene and Benzo(k)fluoranthene Compounds will be commissioned.</i>		
<i>**Not listed in Atkins Atrisk Taken from S4UL system</i>		
<b>Total PAH in (Growth) Subsoil</b>	<b>999 mg/kg</b>	
<b>Total PAH in Topsoil</b>	<b>100 mg/kg</b>	

**Hywel Wilcox**

**CL:AIRE Qualified Person**