clean up

MJCA Technical advisers on environmental issues

April 2014

Issue 10

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Grants, Guidelines and Governments

Contaminated Land Statutory Guidance published by Defra in April 2012 provides guidance to local authorities on implementing the contaminated land regulations and introduced a new category based system for dealing with risk assessment of contaminated land which is intended to provide greater clarity as to what is or is not contaminated land. Defra commissioned a series of science and research projects to provide technical information to support the assessment process including the recently published project 'Development of Category 4 Screening Levels for the assessment of land affected by contamination'.

Defra will no longer be supporting the costs of investigating and remediating contaminated land under Part 2A legislation through the Contaminated Land Capital Grants Scheme citing that the Statutory Guidance provides the clarity to local authorities on implementing Part 2A legislation and with the publication of the methodology to develop Category 4 Screening Levels (C4SL) this is seen as a further step in this direction. A recent study on the management of contaminated sites in Europe shows that in certain European countries there is significant expenditure on the management of contaminated sites from public budgets although with the scaling back of the Contaminated Land Capital Grants Scheme public expenditure in the UK will soon amount to nothing.

Contaminated Land Capital grants funding slashed!

In December 2013 Defra wrote to the local authorities informing them of the future of Defra funding for the Contaminated Land Capital Grants Scheme stating that *"...Since 2009/10, over £38m has been made available to local authorities through the Grants Scheme. However, as you will be aware the budget for the scheme has undergone significant incremental cuts in line with the economic downturn, decreasing from £17.5m in 2009/10 down to £2m for 2013/14...."*. The letter goes on to explain that from April 2014 Defra will no longer be supporting the costs of investigating and remediating contaminated land under Part 2A through the Contaminated Land Capital Grants Scheme although a small amount of funding of £0.5 million annually will be made available for emergency cases only and this is subject to the capital funding in Defra.

Whilst the cessation in funding is associated with the widespread government funding cuts it is cited in the letter that the reason for withdrawing funding is that the revised Part 2A Statutory Guidance published by Defra in April 2012, provides clarity to local authorities on implementing Part 2A of the 1990 Environmental Protection Act, to focus their attention on the highest risk sites and to dismiss the lower risk sites more quickly and easily. Part 2A of the Environmental Protection Act provides councils with a statutory duty to investigate and ensure the remediation of contaminated land sites so that they do not pose a potential risk to health. It is unclear how this responsibility will be achieved or even how sites will be assessed in the first instance to inform the decision making process without funding from central government. Not only are there many sites which will now not be investigated but there are sites where the assessment process has started and there are known problems but there is no financial assistance to drive the remediation of these sites.

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Contaminated Land Capital grants funding slashed!

"Without funding being provided by central government it is difficult to see how sites such as these will be dealt with in the future..."

Although most contaminated land sites are addressed through the planning system which deals with land development, this does not address land which has been developed previously and where there has not been a suitable assessment to identify and address the potential risk and it is necessary to carry out further assessment under the Part 2A contaminated land regime. The last contaminated land audit conducted by the Environment Agency was published in January 2009 entitled "Dealing with contaminated land in England and Wales. A review of progress from 2000-2007 with Part 2A of the Environmental Protection Act". In this report it was revealed that 781 sites had been determined as contaminated land across 74 local authorities in England and 8 in Wales and that over the previous 10 years since the audit central government had funded over 1,100 contaminated land assessment projects. Over 90% of the determined sites were housing estates at the time of the assessment and there had been a need to carry out detailed site assessments and at some of these housing estates, land remediation works was necessary. Without funding being provided by central government it is difficult to see how sites such as these will be dealt with in the future, as it is unrealistic to expect that residents will fund contaminated land assessments and remediation.

Not long after Defra announced the end of funding a BBC TV report interviewed residents from a housing estate built in the 1950's on a former print works in Blanefield, north west of Glasgow where contaminants such as lead and arsenic had been recorded at high concentrations in samples of soil from the resident's gardens. The residents of the housing estate had been informed by Sterling Council that they could face a clean up bill of £630,000 with individuals facing bills of up to £70,000 each. In an unusual move the UK Government decided to pay £225,000 towards the costs and soon after the Scottish Government announced it would fund a further £300,000 towards the remediation works. Sterling Council had already agreed to pay £125,000 and so these residents have been fortunate to benefit from governments south and north of the border who may have other agendas and can by-pass the normal funding channels. The residents of the next housing estate identified as contaminated land may not be as fortunate, but then again with a lack of funding they may never even find out their land is contaminated.

Category 4 Screening Levels published

"The development of C4SLs has been achieved by considering modifications to the toxicological and exposure parameters ..."

A revision to the Statutory Guidance of Part 2A of the Environmental Protection Act 1990 was published April 2012 and it introduced a new category based system for dealing with risk assessment including the assessment of the 'significant possibility of significant harm' (SPOSH) whereby Category 1 sites are clearly contaminated and represent a high risk and Category 4 sites are clearly identifiable as low risk and not contaminated land. Defra commissioned a project to develop Category 4 Screening Levels (C4SLs) which have now been published for six contaminants (arsenic, cadmium, chromium VI, lead, benzo(a) pyrene and benzene) using the same Contaminated Land Exposure Assessment (CLEA) methodology risk assessment model software used to develop the soil guideline values (SGV) published by Defra and the Environment Agency

The development of C4SLs has been achieved by considering modifications to the toxicological and exposure parameters used within the CLEA model. One of the most significant modifications in the development of C4SLs was to apply a toxic threshold for contaminants referred to as a 'Low Level Toxicology Concern' (LLTC) which is based on the principle of 'low risk' rather than applying the toxicological data which had been used to determine the Health Criteria Value (HCV) which had been applied in the CLEA model to developed the SGVs which provides a 'minimal risk'. The same approach is also taken with the assessment of the carcinogens contaminants when considering the Excess Lifetime Cancer Risk (ELCR) exposure whereby a risk estimate of 1 in 50,000 is specified as 'low risk', whereas a risk

Category 4 Screening Levels published

estimate of 1 in 100,000 or lower has been applied in previous soil risk assessment models as 'minimal risk'. At the time of publishing the C4SLs further advice from the Committee on Carcinogenicity (COC) is still being sought. The report presents details of sensitivity and probabilistic analyses that have been undertaken as part of the research in order to help illustrate some of the uncertainty present in the exposure modelling. There is also a suggested check on 'other considerations', for example, background levels, epidemiological data and sources of uncertainty.

The C4SLs are developed for four generic land uses. These include residential with and without home grown produce, allotments, commercial and public open space. The public open space is considered under two scenarios, one which is a grassed area of up to 0.05 ha, with 50% bare soil, used regularly by children and close to residential homes so that materials can be tracked back to these properties and the other is park type open space greater than 0.5 ha, predominantly grassed, has a children's play area and is used for activities such as dog walking. The C4SL based on the risk management decisions applied in the project are summarised in the table below.

Substance	Residential (with home-grown produce)	Residential (without home-grown produce)	Allotments	Commercial	Public Open Space 1	Public Open Space 2
Arsenic	37 mg/kg	40 mg/kg	49 mg/kg	640 mg/kg	79 mg/kg	168 mg/kg
Benzene	0.87 mg/kg	3.3 mg/kg	0.18 mg/kg	98 mg/kg	140 mg/kg	230 mg/kg
Benzo(a)pyrene	5 mg/kg	5.3 mg/kg	5.7 mg/kg	76 mg/kg	10 mg/kg	21 mg/kg
Cadmium	26 mg/kg	149 mg/kg	4.9 mg/kg	410 mg/kg	220 mg/kg	880 mg/kg
Chromium VI	21 mg/kg	21 mg/kg	170 mg/kg	49 mg/kg	23 mg/kg	250 mg/kg
Lead	200 mg/kg	310 mg/kg	80 mg/kg	2330 mg/kg	630 mg/kg	1300 mg/kg

This table should be read in conjunction with the Final C4SL R&D report.

The C4SLs in the table apply to the standard land-uses as set out in the C4SL report and the CLEA framework and therefore it may be necessary to adjust the C4SLs where site conditions or land use vary significantly from the assumed characteristics in the report.

The Part 2A regime and the planning regime are inter-linked such that the National Planning Policy Framework states that *"...after development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990..."* and that *"...Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner..."* The Part 2A Statutory Guidance and accompanying Impact Assessment were developed on the basis that C4SLs could be used under the planning regime.

This C4SL project was designed with the intention that one of the outputs would be an agreed and tested methodology that would then be available for the sector to develop further C4SLs for additional contaminants as necessary, bearing in mind the need for specialist toxicological input into the derivation of the LLTC and Defra recognises the potential value in there being some central oversight of additionally developed C4SLs.

"The C4SLs are developed for four generic land uses. These include residential with and without home grown produce, allotments, commercial and public open space...."

Initial Observations of Defra's Contaminated Land Expert Panel

Defra's Contaminated Land Expert Panel has prepared a short document on their initial observations from the case studies reviewed to date. This document is intended to assist local authorities in the determination process of sites under revised Statutory Guidance published in April 2012 for the Environmental Protection Act 1990: Part 2A specifically focussed on 'borderline' sites between being 'contaminated land' or not. This review should also be of interest to those preparing contaminated land assessments with regard to 'gaps and uncertainties' which need to be considered when preparing reports. The review is presented under the four key sections setting out what is expected to be included in a risk assessment as set out in section 3.35 of the Statutory Guidance.

"The implications of remediation works need to be considered such that the works do not increase the potential level of risk to residents..."

Understanding the Risks (section 3.35a)

There needs to be a clear presentation in the assessment as to what has been considered to be Significant Possibility of Significant Harm (SPOSH) and it is not sufficient to consider a site as contaminated land based on Generic Assessment Criteria or Site Specific Assessment Criteria alone. Any justification of SPOSH needs to be presented adequately in the risk summary report. The assessment needs a robust understanding of the site history, site activities and processes which will assist in developing a greater understanding of the distribution of contaminants and this needs to be reflected in better spatial and depth sampling and sample characterisation. A conceptual site model is always needed in order to put the contaminant linkages into context.

Understanding Uncertainties (section 3.35b)

It is important to provide detailed information to identify and explain the uncertainties that exist in the site assessment. For example when considering the choice of sample selection there may be access or sampling restrictions. It may be more appropriate to consider the site as a whole rather than to zone the site based on current uses and site conditions and it will be necessary to consider sampling restrictions and statistical analysis in these zones and comparison of the findings with other zones to assess if the contamination results are part of the same statistical population. There are recommendations to consider the natural background concentrations of contaminants and the use of bioaccessibility testing where appropriate although this needs to be relevant to its intended use.

Risks in Context (section 3.35c)

Whilst risks can be described qualitatively and quantitatively depending on the source of the data, the context of the risk at a local level needs to be clarified such that typical concentrations of contaminants in non-contaminated soil and the potential exposure of contaminated soils to impact on human health through normal activities are understood. An important point which is also considered in the review is the effect that the decision made by a Local Authority may have on the lives of the individual people involved.

Possible Remediation (section 3.35d)

The implications of remediation works need to be considered such that the works do not increase the potential level of risk to residents for example if there was a need to go through the property to gain access to gardens. There is also a need to consider what information should be provided to the site owner and the access to such information by future site owners.

Whilst this review is welcomed and it is appreciated that the comments are based on initial observations, without access to the case studies reviewed it is somewhat difficult to place these comments in context. The comments raised in the review, particularly in understanding the risks, appear to summarise the approach to site assessment which would be expected if applying guidance set out in the 'Model Procedures for the Management of Land Contamination'. Contaminated Land Report 11 (CLR11) and the comments and suggestions reflect the type of information which may be expected in most site investigation assessments regardless as to whether they are focussed specifically on the Part 2A contaminated land regime.

With the scrapping of Contaminated Land Capital Grants there will be fewer and eventually no future case studies for the panel to comment on.

Progress on the management of contaminated sites in Europe

The European Commission Joint Research Centre has recently published a report entitled 'Progress on the management of contaminated sites in Europe' led by the Institute of Environment and Sustainability. The report presents the current state of knowledge on the management of contaminated sites in Europe and supports the EU Soil Thematic Strategy which identifies local soil contamination as an important issue.

The report is based on data collected from the National Reference Centres for Soil in 39 countries which belong to the European Environment Information and Observation Network. In the UK, Cranfield University has provided this data. The information presented in the report is based on a set of indicators which aimed to assess an estimated extent of soil contamination, including how much progress has been achieved in the management and control of local soil contamination, which sectors contribute most to soil contamination, what are the main contaminants affecting soil and groundwater and how much is spent on cleaning up soil contamination.

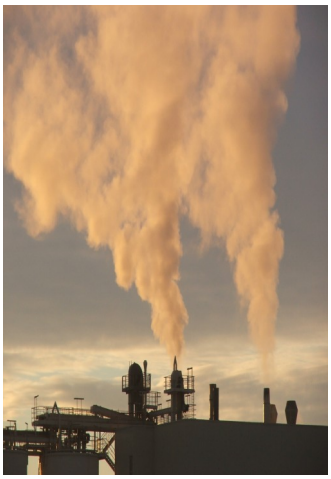
The report estimates that there are 2.5 million potentially contaminated sites in Europe and approximately 45% of these (170,000 sites) are identified to date as potentially contaminated sites, 342,000 are identified as contaminated sites and approximately 50,000 sites have been remediated. It is estimated that there could be as many as 340,000 which need to be remediated.

A third of the countries have made significant progress in the mapping of their polluting activities and potentially contaminated sites although only eight countries were able to measure progress regarding a preliminary assessment stage. Out of the 39 countries, 28 maintain inventories for contaminated sites and almost all of the inventories include information on polluting activities, potentially contaminated sites and contaminated sites. Approximately one third of all management practices for the remediation of contaminated soil continues to comprise excavation and off-site disposal. In the UK this is reported as over 90% of the remediation by 'other treatment' which includes excavation and disposal.

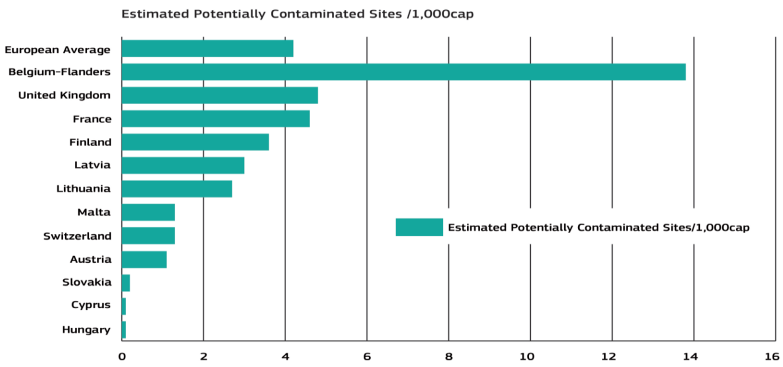
Given that this report updates existing data this may reflect the past 'dig and dump' approach to remediation although the figure appears high. Industrial sectors such as mining, metal industries and fuel filling facilities are those reported most frequently to be key sources of contamination which is reflected in the most frequent contaminants identified such as mineral oils and heavy metals. Costs for site investigations generally fall in the range of €5,000 to €50,000 and the costs for remediation projects usually fall in the range €50,000 to €500,000.

These findings suggest that there is still a significant amount of assessment necessary to deal with contaminated sites. The approach taken across the European Union Member States and the other 11 European countries in the study varies significantly particularly with regard to expenditure on dealing with contaminated land by public budgets. From data provided by nine countries only, on average, 42% of total expenditure on the management of contaminated sites comes from public budgets with around 81% of the annual national expenditures for the management of contaminated sites spent on remediation measures, and 15% spent on site investigations.

The UK was not one of the countries which provided data on expenditure, although it is clear that the UK public expenditure on the management of contaminated land is significantly less than other European countries and with the scrapping of the UK Contaminated Land Capital Grants Scheme will soon amount to almost nothing.



"...there are 2.5 million potentially contaminated sites in Europe where soil contamination is suspected ....."



The chart above shows the number of potentially contaminated sites per 1000 inhabitants.

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ABOUT MJCA

MJCA provides independent advice on environmental issues to the public and private sectors. Delivering our services to high technical standards and our commercial awareness enables us to provide practical, cost effective advice and sustainable solutions. Further information regarding our services can be found on our website www.mjca.co.uk

CONTACT US

Please contact Kevin Eaton for more information on any of the issues raised in this newsletter, or on any other Contaminated Land issues.

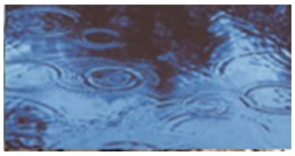
Site Waste Management Plans scrapped

As part of the Defra Red Tape Challenge, aiming to reduce bureaucracy for business, the Site Waste Management Plans Regulations 2008 (SWMP) were repealed in December 2013. There was a public consultation process earlier in 2013 which recorded an even split between those who wanted to see the SWMP scrapped and those wishing for them to remain although significantly the majority of respondents said they would still use some form of tool to record and manage waste on site.

From the consultation it is apparent that most respondents consider that waste reduction is important and necessary. These objectives are common place amongst many developers and together with resource efficiency these factors are often considered when designing development schemes not only to meet sustainability goals but because it is financially advantageous to do so.

Similarly, with careful planning, materials arising from demolition, earthworks or site remediation activities even when contaminated can be reused where there is not a risk to site users or the environment and there are a number of ways of determining that such material does not comprise a waste; depending on the nature of the materials, how they are going to be used and site specific circumstances.

MJCA has significant experience in working on a range of development schemes whereby materials which initially may not have been considered suitable for reuse, have through assessment and applying relevant protocols been able to be reused in a sustainable manner, thereby minimising resource use, reducing the potential for wider environmental impacts such as reducing vehicle journeys and saving costs.



EA to introduce pre-application charging

The Environment Agency (EA) is a statutory consultee to planning applications and they provide pre-application advice to developers on environmental issues about a proposed development or change of use for a specific plot of land, for example on flood risk issues, the protection of land and water quality, impacts on wetland biodiversity and fisheries, waste management and climate change adaptation. By seeking advice at the pre-application stage, environmental constraints can be identified so that solutions can be developed to resolve them and thereby reduce delays at the planning application stage.

However if more detailed technical advice is needed by a developer the EA will offer a charged service. This will include situations where development is, or will be, the subject of an application for planning permission or a development consent order. The charges applied by the EA are based on cost recovery and have been set at £84 per hour. The EA already charge for advice on environmental permitting matters and many Local Authorities have been charging for pre-application planning advice for land development for a while.