

**SAGTA/CL:AIRE JOINT WORKSHOP**  
**WEDNESDAY 13<sup>TH</sup> SEPTEMBER 2006**

**Building Confidence in Remediation**

A universal aspiration for all parties involved in land management is to achieve confidence in remediation processes, such that the technology and the application succeed in achieving requisite performance criteria.

Not least of these is the UK's landholder community. As the ultimate clients, they can often be committing very substantial finance to what they, quite reasonably, require to be effective land remediation.

SAGTA members represent a cross-section of the landholder community and in March 2006 held an internal workshop to review what existing strategies could be applied to the front-end of the process to gain confidence that remediation would ultimately succeed.

The discussions at SAGTA's March workshop identified the following issues:

- Current guidance - is there sufficient – is it being employed?
- Support information – current availability, current initiatives?
- Ensuring effectiveness of laboratory tests, treatability and pilot trials
- Exchanging information within the process– both in detail and in timing
- Technology vendors – ways in which confidence can be reinforced.

The SAGTA/CL:AIRE September 2006 Workshop attracted over 100 delegates whose task was to draw on the issues discussed previously. It brought together landholders, regulators, remediation designers, technology vendors and specialists in communication to identify what factors are necessary to gain overall confidence that effective land remediation is achieved. As such, this September Workshop built on these issues and exchanged UK and international perspectives of needs across all land remediation processes.

Availability of appropriate information is a key aspect together with the extent and the means of how it is communicated. Experiences drawn from activities in Europe were shared as part of the programme.

Mirroring SAGTA's typical workshop format, CLAIRE's programme set a framework for the day that provided regular periods throughout for discussion and debate on the perspectives that were developed by the programme presentations. It was also structured to afford opportunity to debate the need and scope of any further

approaches that can help build confidence and discuss where groups, such as SAGTA, CL:AIRE, and others, can help take matters forward.

A full workshop pack accompanied the day with slide presentations from the speakers. A programme for the day is included in Appendix 1.

The summaries from these inputs appear below.

## **Keynote speaker – Sue Ellis, DEFRA**

### **Contaminated land - general**

- Contaminated land is managed through either Part IIA or planning – the preferred route is planning
- the standard for management is no different between the two regimes – use of the word 'safe' in examples in PPS 23 was not intended to imply a higher standard of clean-up
- There is a large amount of expenditure on contaminated land although little of this is through Part IIA
- The EA have estimated 300,000Ha of land is affected by contamination in England and Wales although not all of this would fall under Part IIA.
- The next statement on this will be issued by the EA at the end of 2007

### **SGVs**

- Since the publication of CLAN 205 further work has been ongoing with respect to resolving the issue of SGVs with respect to unacceptable intake
- A discussion paper is in preparation which will be issued in early October 2006 which will set out an action including
  - the EA view on exposure assessment
  - changes to CLEA

### **Consultation Documents**

- The environmental permitting programme is aimed at streamlining and simplifying legislation
- the programme will start with WML and PPC but will not change existing standards
- a consultation document on planning and permitting interface is launched today
- a further consultation on site waste management plans will be launched in January 2007 with the intention of implementing the regulations by October 2007. These will require SWMPs for all projects exceeding £200K.

## **Do we have confidence in remediation technologies? – Mark Jones, SAGTA Chair and CL:AIRE Trustee**

### **In order to build confidence we need to**

- characterise the site
- identify objectives
- ensure that objectives are met
- understand the technology – why it works

### **In order to chose the right technology we need to**

- understand the problem which requires remediation
- develop greater partnerships and spend more time to derive the correct solution
- understand operating windows
- undertake appropriate pilot trials with scientific testing

### **Guidance would be appropriate with respect to**

- cost benefit analysis
- cost estimation and management
- project management (including constraints)<sup>1</sup>
- contractor choice, e.g. the appropriateness of accreditation schemes and the potential conflict between using only accredited suppliers versus those offering new unproven technologies

Information on experiences can be shared via a number of means including EUGRIS

## **Building regulation confidence in remediation – Bill Baker, CIEH**

- Contaminated Land Officers have responsibility for Part IIA, although control via planning is their number one priority
- They assess work at all stages (including verification)
- The framework in which they operate is clear although CLR 11 seems to largely ignore the role of the CLO
  - R&D 66
  - CLR 11
  - P20
  - CLEA
  - CLR 7 – 10
  - PPS 23
  - Building Regs Part C
- Guidance is still required for
  - asbestos
  - dealing with uncertainty

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<sup>1</sup> [Note: Paul Syms offered that DCLG and DEFRA had been working on holistic guidance on brownfield development for the past 9 months (due to published w/c 11<sup>th</sup> December 2006) and that it would be possible to reinforce the section on project management]

- managing bioaccessibility
- CLOs are resource constrained as their budgets are not ring-fenced.
- CLOs are now competent with usually a first degree and MSc
- An accreditation scheme for CLOs would be welcomed
- The involvement and awareness of planners is an issue
- The Standing Conference is working on developing a set of standard planning conditions
- A questionnaire will be sent to planners to investigate awareness
- A training package is being prepared for planners
- CLOs face problems with the competence of developers and their consultants – including the quality of reports presented in support of planning applications
- There is a perception that EA support is a diminishing resource

## **Building regulator confidence in remediation – Brian Bone, Environment Agency**

- The EA is involved in several areas of regulation related to land contamination
- management of landfilled waste
  - on-site treatment of contaminated land and groundwater
  - off-site treatment (CLUSTER)
  - achievement of remediation objectives (planning and Part IIA (Special Sites))
- The MPL was introduced in 1997 as a short-term solution – it has finally been updated by the MTL which does (via the deployment form) identify the need to notify others regarding legal requirements. Account managers have also been introduced
- CLR 11 is the main procedure to be followed for the management of contaminated land – BUT it is not being widely used. The aim should be for it to be as much standard practice as P20 is now
- The EA research programme has been reviewed with the following aims
  - reduce repetition
  - focus on operational areas including
    - data quality
    - confidence in new technologies
    - catchment management
- The EA also shares aims with CL:AIRE including the need for
  - decision support tools for the selection of technologies
  - technology knowledge transfer
- The EA is keen to maintain affiliation through SAGTA, CL:AIRE and IPM-NET

## **Building confidence through communication – Linda Isted, Staniforth, Communication Specialist**

- The most important quality for communication is **ENERGY**
- It is important to remember that you are dealing with real lives and that important qualities include
  - trust
  - respect
  - approval
- There are important do's and don'ts to remember
  - do get an expert, use multi format versions of your communications and update regularly
  - don't make unreasonable demands
- When communicating
  - give the best advice
  - provide the options
  - be honest – including if you don't know the answer
  - show confidence
  - reassure that you have best interests in mind
  - don't over promise
- remember that the project is for **everyone** and that it has everything to do with the **community**
- don't make the mistake of “out of sight – out of mind”
- remember that small does not equal insignificant
- local media love scare stories
- everyone is a gossip
- national media love to tell the public something that they were not aware of

## **Selection of appropriate technologies – Guy Pomphrey, DEC NV**

- There are a number of issues to consider which influence the choice of technology
  - time available for treatment
  - site size
  - proximity and type of neighbours
  - client preference
  - distance to treatment facilities
  - requirement for re-use of material on site
- There are pro's and con's to consider with each technology
- Lessons learned from projects include
  - odour is a big problem with some technologies because of the need to re-work materials
  - soil washing is difficult to optimise
  - be realistic

- mobile treatment plant is much more challenging to manage and optimise than fixed plant (largely because of the ability to blend feedstocks)
- good site investigation data is critical
- treatment trials are important
- field trials give the greatest confidence
- there is no 1 (one solution) for contamination
- early involvement of technology vendors is important
- allow sufficient time for establishing feasibility
- allow vendors to be involved in the SI
- ensure that the SI includes good material description
  - PSDs
  - description (e.g. presence of coal, gravels )

### **Using statistics to build confidence in data – Mary Harris, Bureau Veritas**

- it is important to understand why we are collecting data
- this dictates to the amount, location and frequency of data collection
- it is also important to have a process of validating / invalidating data
- there is a need for relevant reliable data
- samples must be unbiased
- the assumption is that data is “normally” distributed
- the assumptions must be remembered in light of the applications and limitations of statistical tests
- it has been identified that CLR 7 requires updating to support the work of the SGV task force and align it to Part IIA
- the aim is to provide a draft by Autumn 2006

### **CL:AIRE project evaluation process – Gordon Lethbridge, Shell Global Solutions and Chair of CL:AIRE Technology and Research Group**

- all technologies which are not “dig and dump” are regarded as “new”
- the main objective is to share information
- it would be useful to have a workshop on “what went wrong” with a number of technologies
- it would be helpful for the TRG to publish a small review of what made successful projects – successful
  - submission of projects to the TRG is a fairly simple process
  - submit project
  - discuss with CL:AIRE team
  - project will be either –
    - rejected,
    - accepted or
    - accepted pending modifications

- project then goes for Board ratification
- a cost of £10K is payable
- verification is key
- the same technology needs to be tested under a number of circumstances
- suppliers were asked to think of CL:AIRE when commissioning projects

### **Conceptual site models: a necessity for information exchange – Wouter Gevaerts, Arcadis, Belgium.**

Conceptual site models are a must, and with imagination can help us to properly visualise the end result. Essential starting points are sources, pathways and receptors. They can help with:-

- Simplified system understanding
- Integration of data
- Give a quantitative Framework for understanding systems
- Planning Tool
- Communication Tool
- Negotiation Tool
- Assist in assessing potential risk

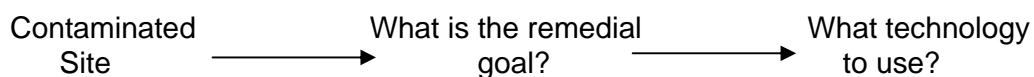
Additional considerations include:-

- Learn from your experiences and share the learning
- Review whether your model describes the important system processes
- Do you have a level of complexity which is consistent with the project objectives and budget?
- Do you have the right balance of data requirements and dimensionality
- Use your own judgment in applying mathematical models

Memorable quote “Since all models are wrong the scientist must be alert to what is importantly wrong.....It is inappropriate to be concerned about mice when there are tigers about”

### **Economic analysis for remediation decision-making – Paul Hardisty, WorleyParsons Komex**

- Outlined the need to develop a remedial goal/objective before deciding on remediation technology



- Discussed the inputs to this decision
- Highlighted that COST is an important input i.e. ‘how much money is a reasonable amount to spend?’
- Regulators have to take into account costs and benefits as part of Part IIA

### **The use of Cost-Benefit Analysis:**

- Allows external costs to be included
- Allows all stakeholders concerns to be considered on an equal basis – with the same unit of measure: MONEY
- Helps determine the appropriate level of expenditure for a given site
- Cost-benefit analysis is a double edged sword – can justify higher or lower expenditure depending on the benefits produced

## **Discussion on the Way Forward – Main Points**

Delegates were then encouraged to explore the ways forward in a discussion led by Steve Wallace of National Grid. Points made in the presentations were picked out and are numbered below, flipcharts captured the outputs and are summarized below each point with suggested actions appearing in italics.

### **1. Why is CLR11 and other guidance not widely used?**

- Specifiers should add the requirement to include CLR11 in tender documentation
- Case studies demonstrating how helpful the guidance is could be produced (possibly CL:AIRE/EA)
- Particular training sessions for consultants and developers
- More Local Authorities should follow the line of Kent County Council which is to reject submissions not complying with the standards
- LACORS (Local Authorities Co-coordinators of Regulatory Services)

*Suggested Action: CIEH and/or CL:AIRE to take awareness raising forward with potential support of EA.*

### **2. What guidance is missing?**

- A suggestion was for improved guidance on contract/project management of remediation projects (see earlier note – offer from Paul Syms)
- Topics which the group felt deserved guidance included definition of waste to allow for reuse of soils, asbestos, dealing with uncertainty, bioaccessibility and advice on selecting suppliers of technologies and selection of appropriate technologies.

*Suggested Action: Appropriate projects could be scoped for consideration within the National Brownfield Strategy delivery plan*

### **3. How do we increase exposure to good remediation project experience?**

- Have a workshop/conference on lessons learnt
- TRG to produce a note on “What makes a good project?” to include the aspects of verification

- Encourage more projects to be submitted to CL:AIRE – the question being how do we achieve this ? eg set up an innovation fund
- Arrange greater access to demonstration projects to encourage wider understanding and acceptance of technologies.

*Suggested Action: CL:AIRE to examine ways of taking these suggestions forward.*

#### **4. Improving Effectiveness**

Three main ways this can be examined:-

- Improving the competence of individuals especially planners, CLOs and consultants, with continuing professional development and schemes such as SiLC. This would include improving the quality of report writing
- Accreditation of contractors
- Verification of technologies

Other thoughts included the adoption of standard planning conditions and the question then is who should be involved in drafting them and how could we get them adopted?

#### **5. Consultations**

A number of consultations were coming up on Verification, Environmental Permitting, Site Waste Management Plans, Planning and Permitting.

The question is “how best to contribute?”

*Suggested Action: CL:AIRE to organize a number of facilitated workshops with a range of industry stakeholders for each consultation.*

#### **6. How can contractors increase confidence?**

- Improving the quality of site investigation and ensuring the SI is aligned with the technology that has been selected.
- Ensure early contractor engagement
- Dedicate budget to site trails
- Take time to understand the pros and cons of new technologies and not just stick with the ones you are comfortable with.
- Improve internal communications within the team.

*Report compiled by Jane Forshaw and Dr Rob Sweeney of CL:AIRE with significant contributions from Dr Paul Walker of National Grid.*

SAGTA/CL:AIRE Workshop

# Building Confidence in Remediation

13 September, 2006

Glaziers Hall, London

## Programme

0845 – 0930 Registration and coffee  
0930 – 0935 Welcome – Jane Forshaw, Chief Executive, CL:AIRE  
0935 – 0950 Keynote speaker – Sue Ellis, Head of Local Environment Quality Division, Defra

### Session 1: Chair: Judith Lowe

0950 – 1005 Do we have confidence in remediation technologies? – Mark Jones, RWE npower  
1005 – 1035 Building regulator confidence in remediation – Brian Bone, Environment Agency, and Bill Baker, on behalf of the local authorities and the Standing Conference on Land Contamination  
1035 – 1100 Building confidence through communication – Linda Isted, Staniforth  
1100 – 1115 Discussion  
1115 – 1140 Coffee break

### Session 2: Chair: Mark Jones

1140 – 1205 Selection of appropriate technologies – Guy Pomphrey, DEC  
1205 – 1230 Using statistics to build confidence in data – Mary Harris, Bureau Veritas  
1230 – 1245 CL:AIRE project evaluation process – Gordon Lethbridge, Shell Global Solutions  
1245 – 1300 Discussion  
1300 – 1400 Lunch

### Session 3: Chair: Steve Wallace

1400 – 1425 Conceptual site models: a necessity for information exchange – Wouter Gevaerts, ARCADIS Belgium  
1425 – 1450 Economic analysis for remediation decision-making – Paul Hardisty, WorleyParsons Komex and Steve Wallace, National Grid  
1450 – 1505 Discussion  
1505 – 1540 The way forward  
1540 – 1550 Review and close

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