AGENDA
SuRF- UK Phase 2 Workshop
HCA Office, Warrington
10.30am – 4.30pm

Time	Title Speaker
10.30 – 10.40	Welcome and Housekeeping Nicola Harries
10.40 – 10.45	Aim of the Day – Nicola Harries
10.45 – 11.00	Background to SuRF-UK - Richard Boyle
11.00 – 11.30	Presentation of Case Study No. 1 –Petroleum Retail Site, Jonathan Smith
11.30 – 11.45	Discussion
11.45 – 12.00	Coffee
12.00 - 12.45	Presentation of Case Study No.2 – Historic Copper Mine, Paul Bardos
12.45 – 1.00	Discussion
1.00 – 2.00	Lunch
2.00 – 4.00	Presentation and working through Case Study No. 3 – Brownfield Redevelopment, Jonathan Smith and Paul Bardos
4.00 – 4.30	Discussion and Wrap Up
4.30	CLOSE

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SUSTAINABLE REMEDIATION FORUM UK

SuRF-UK Phase 2 Case Study Workshop

October 20th 2010 at HCA Office Warrington,

Attendees::
Jonathan Smith – Shell Global Solutions
Nicola Harries – CL:AIRE
Richard Boyle – HCA
Paul Bardos – r3
Naomi Regan – National Grid
Alison Hukin – Environment Agency
Judith Scott – Bury Council
Maurice Bowden – Countryside Properties
Garry Preece – AkzoNobel
Anwen Hughes – Golders
Alan Thomas – ERM
Ann Barker – Bradford City Council
David Sibbitt – ASDA
Stephen Wielebski – Miller Homes
Sarah Mackay – WSP
Phil Morgan – SIRIUS Group

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2.	Aim of the Day	Nicola Harries
3.	Background to SuRF-UK	Richard Boyle
4.	Presentation of Case Study No. 1 – Petroleum Retail Site	Jonathan Smith
5.	Discussion	
6.	Presentation of Case Study No.2 – Historic Copper Mine	Paul Bardos
7.	Discussion	
8.	Presentation and working through Case Study No. 3 – Brownfield Redevelopment	Jonathan Smith and Paul Bardos
9.	Discussion and Wrap Up	

ITEM	
1.	**Welcome and Housekeeping** Richard Boyle welcomed everybody to Homes and Communities Agency (HCA) office, thanked them for attending and provided the house keeping details.
2.	**Aim of the Day** Nicola Harries (NH) welcomed everybody on behalf of the SuRF-UK Steering Group and explained the agenda for the day and that this was the second workshop to engage with the brownfield and contaminated land community since the publication of the framework. She reiterated the Steering Group would value any feedback that people have on the framework, particularly from those that have tried to use it. NH explained that the Steering Group were now working on Phase 2 and outlined the work programme for Phase 2. She explained that the Steering Group would particularly value feedback on the categories of indicators that were outlined in the framework document. Over

	the last few months the Steering Group has been refining these and will be uploading their work in progress onto the SuRF-UK web pages shortly. We would value feedback on whether the coverage is adequate, are there any gaps, are there too many too few, is it clear what the indicators are? The Steering Group would value any comments.
3.	**Background to SuRF-UK** Richard Boyle provided a presentation to the background to SuRF-UK and a brief overview to the framework document and how the Steering Group hope it will be used.
4.	**Presentation of Case Study No. 1 – Petroleum Retail Site** JS presented case study No. 1 where Shell had undertaken a tiered sustainability assessment on a petroleum retail site. He explained how he had engaged with colleagues who had not had any involvement in the site to undertake the assessment and that this assessment was undertaken retrospectively as the site had already been remediated. He presented the site and background information and explained the aim was to road-test the SuRF-UK sustainable remediation framework and to compare a single remediation project under different sustainability appraisal tools. He wanted to look at the ease of application, and assessor/auditor skill requirement, cost and time it took to undertake the assessment, data requirements, consistency of resulting environmental management decision and to collect evidence to inform selection of an appropriate tier of sustainability assessment. JS explained the sequential process that they used starting simply and then progressing in complexity. Initially they undertook a Qualitative Assessment where a roundtable conversation was had and different remedial options were given a high/medium/low rating. Then a Semi-quantitative assessment was undertaken using Multi-Criteria Analysis (MCA), this was spreadsheet-based with scoring and weightings applied. Finally a Quantitative assessment using – Cost-Benefit Analysis (CBA) using an Environmental Economic consultancy. CBA was considered and used to inform a decision by the assessors. The conclusions of the exercise were: • Ranking of remediation options is similar in all 3 tiers - Management decision was very similar at all tiers • Clear rules, definitions and participant understanding are critical • Tiers Qualitative assessment successfully distinguishes between groups of options Quantitative assessment necessary to distinguish subtly different options Start simple, and quantify only where needed to resolve complexity • For 'simple' remediation decisions (e.g. an operational site, no land-use change), a low-tier assessment was robust
5.	**Presentation of Case Study No.2 – Historic Copper Mine** Paul Bardos (PB) presented a case study where he had undertaken a sustainability assessment on a Historic Copper Mine in Wales using the SuRF-UK framework. He explained that this work was undertaken as part of a wider project known as C-CURE (biochar stabilisation) that had been funded by the Technology Strategy Board. PB explained the site and its history, the remedial options considered, Applying the SuRF-UK framework, objectives and stakeholders, scope, boundaries and technique, sustainability assessment findings, sensitivity analyses and conclusions. In conclusion PB demonstrated In this case study that biochar stabilisation offers the more sustainable remediation across all elements (social, economic and environmental). The sustainability assessment was a simple, cheap qualitative approach that yielded clear outcomes after only two meetings. The case study showed how sensitivity analysis improved the robustness of findings. This work is still subject to validation, with some additional quantitative assessment on carbon footprinting of the bio-char and further and wider stakeholder engagement but it is hoped that this will become a SuRF-UK Case Study when finalised.

6.	**Discussion throughout the day** • It was felt that a tiered approach was an appropriate approach to take which allowed flexibility depending on the size of project. • It was also felt that it was good to undertake a sensitivity analysis. • There was questions on how far does one need to go before you undertake a quantitative assessment? It was discussed that it was important not to jump straight into a quantitative assessment as it would be too costly and not always justified and could skew the answer. • It was felt that if you engaged with all stakeholders it may be difficult to look at all ideas put forward by them. There would need to be some judgement made earlier on. It was agreed that this is acceptable as long as you record all the assumptions that you make to provide transparency. • It was felt that the approach that SuRF-UK was making with the framework document would work well on large projects and if there is problems with stakeholders to help come to a conclusion, however it was felt that to get SuRF-UK framework rolled out across the whole redevelopment industry would be too costly. Many developments are small. It was felt that it would be too difficult to undertake a sustainability assessment in addition to everything else that is required. Cost margins are too small to add another tier of assessment. • Other attendees felt that clients or site owners may be receptive due to their companies CSR credentials and wanting to maintain them. • There was discussion to explain that a sustainability assessment should be seen as integral part of your redevelopment and following good practice such as using CLR11 and not seen as an additional burden. • There was discussion on Stakeholder Engagement. In people's experience it can be very varied. It was agreed that the framework would allow engagement in a more accessible way. Stakeholders are not predictable so following the framework would allow transparency. • It was stated that developers would be more inclined to undertake a sustainability assessment if there were obvious cost savings/incentives for them given by Planners. At present it is the planners that tell the small developer what they can and cannot do with little flexibility. • It was felt that Civil Engineers/Architects and Planners need educating in SuRF-UK framework. • If undertaking a sustainability assessment was identified as a requirement in the legislative process it was felt that there would be a much greater take up rather than it being voluntary. This would ensure that the best overall scheme for the site was selected. • It was stated how important that the SuRF-UK framework was integrated into the existing Contaminated Land Report 11 (CLR 11) options appraisal process. The SuRF-UK framework document must be seen as an integral part of the options appraisal process identified in CLR 11. They should not be seen as two different processes. CLR 11 is an overarching framework and SuRF-UK framework provides a finer level of detail to assist in the decision process of a sustainable remedial option. It was felt that this will happen with time and it was essential that the Steering Group promote the framework as widely as possible.
7.	**Case Study Exercise** JS and PB presented Case Study 3 where attendees were asked to work in small identified groups and undertake a sustainability assessment on a former gasworks site. The two groups were requested to provide remediation options assessment to a client to support a sustainability appraisal using the SuRF-UK Sustainable Remediation Indicators.
8.	**Discussion** It was agreed that it was a very interesting exercise and attendees felt that they had learnt a lot from considering others points of view. Consultants that attended felt they would often carry out an options appraisal but if you document your thought process it made you think more about the decisions that are being made and the stakeholders that you should involve in

	the decision process. It felt much more of an iterative process than you would undertake typically. If the geotechnical elements and contaminated land elements of the development were brought forward together and considered at the same time then it was felt that you would give a better more cost effective solution. Wider dialogue with stakeholders would also provide a better designed project.
9.	**Closing** JS concluded the meeting and thanked everyone for attending. JS reiterated that the SuRF-UK Steering Group would take away the attendees thoughts and they would be circulating notes from the meeting. One more meeting will be held where the exercise will be repeated amending in light of the feedback from the attendees. JS also asked for case studies that can be shared on the SuRF-UK website and any additional thoughts that people may have after the event to forward to Nicola Harries.

SuRF-UK Phase 2 Workshop objectives

Nicola Harries

20th October 2010

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SuRF-UK Phase 2 project objectives

1. To develop ***worked examples*** to illustrate how the SuRF-UK framework may be applied to a ***range of (re)development scenarios, contaminant types and remediation technologies/techniques***.
2. To develop a ***structured checklist of practical sustainability indicators*** for use in a SuRF-UK sustainable remediation assessment.
3. To ***test the practicability of the above indicators*** during real sustainability assessment negotiations.
4. To ***consult with a wide range of stakeholders*** across the contaminated land and brownfield sector ***to validate the indicator checklist***, provide opportunities for external evaluation and case studies, and provide a ***platform for an influential sustainable remediation assessment approach in the UK***.

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Objectives this workshop

- Explore how the Framework works with real sites
  - 2 short case-study presentations (morning)
  - 1 interactive case study (after lunch)
- Interactive study
  - Set boundaries, options, indicators
- Test the proposed categories of indicators
  - Is coverage adequate? Any gaps?
  - Too many, too few?
  - Is it clear what the indicators are?
- Give Steering Group direction to refine and develop the supporting elements to the Framework

Developing a Sustainability Assessment on a Brownfield site

Jonathan Smith and Paul Bardos

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Contents

- Context
  - Interests
  - Stage
  - Initial vision
  - Site description (fictitious drawing on evidence from a real site)
- Exercise
  - 1: linkage to SuRF-UK Framework
  - 2: consulting brief
  - 3: discussion

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Interests

- Site owner
  - Former gasworks site
  - Canal-side residential development opportunity
  - Maximise return on site
  - Minimise residual liability
  - Provide a quality solution
  - Minimise remediation cost share
  - Consider sustainable remediation solution

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Interests

- Planning, Policy and Regulatory
  - Effective risk management (through planning route) – human health, water resources
  - Satisfactory compliance with permitting requirements
  - Low lying site potentially subject to flooding
  - Biodiversity corridor (close to wetland habitats)
  - Waste minimisation from remediation and build
  - Energy efficiency in built development
  - Sustainable urban drainage scheme

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Interests

- Local authority
  - Want social housing in the mix
  - Want to avoid development that increases traffic
    - Minimise disturbance on neighbourhood
  - Want to include urban green space
  - Linkage to riverside wildlife corridor
  - Want section 143 money

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Interests

- Developer
  - Maximise high yield readily saleable units
  - Avoid acceptance of long term liabilities
  - Quality solution
  - Provision of car parking and access
  - Minimisation of remediation and redevelopment costs

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Surroundings

- Residential on former brownfield on one side
- Industrial usage on the other
- Canal frontage to heritage buildings on the opposite bank
- Newly developed urban green space / wildlife corridor

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Initial Vision

- Starting point from site owner and developer
  - High value units fronting directly on to the canal with basement parking
  - Access road across site
  - Between access road and high value buildings a small park / garden area
  - Between access road and site perimeter mix of social housing and medium value units (flats)

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Some Boundaries

- Preferred end-use for site is 'residential' and is acceptable option under local plan
- Groundwater risk assessment demonstrates contained source with no migration of contaminants to deep aquifer

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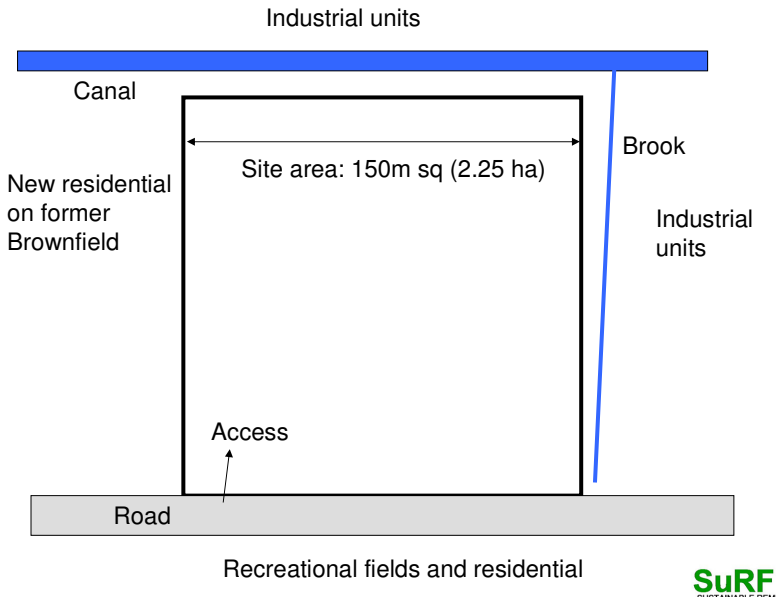
Site: Environmental setting



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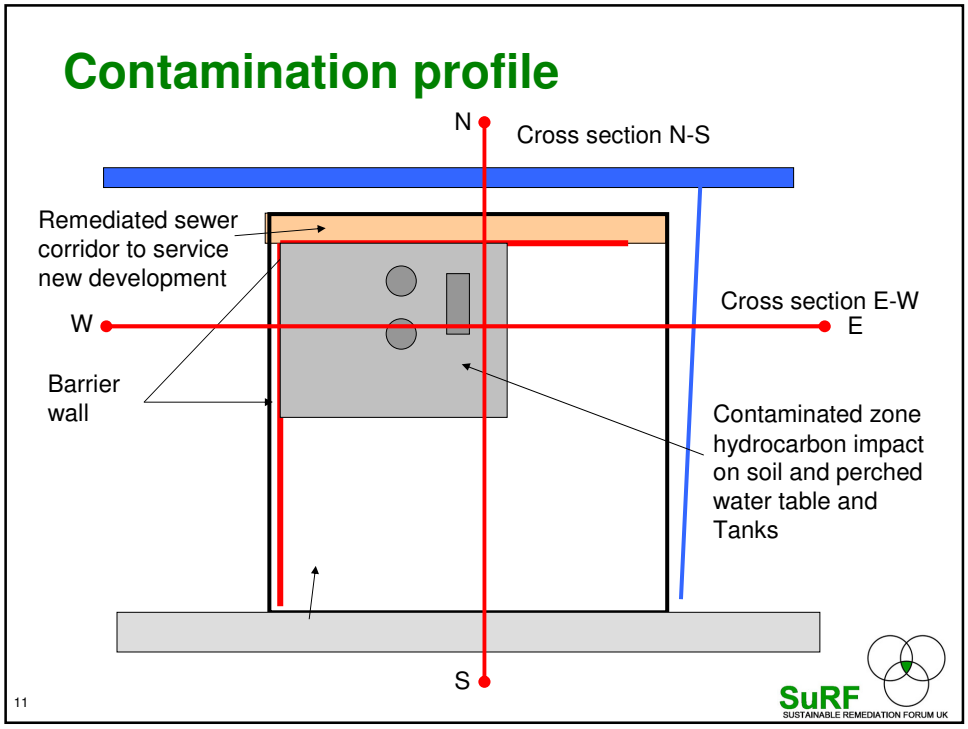

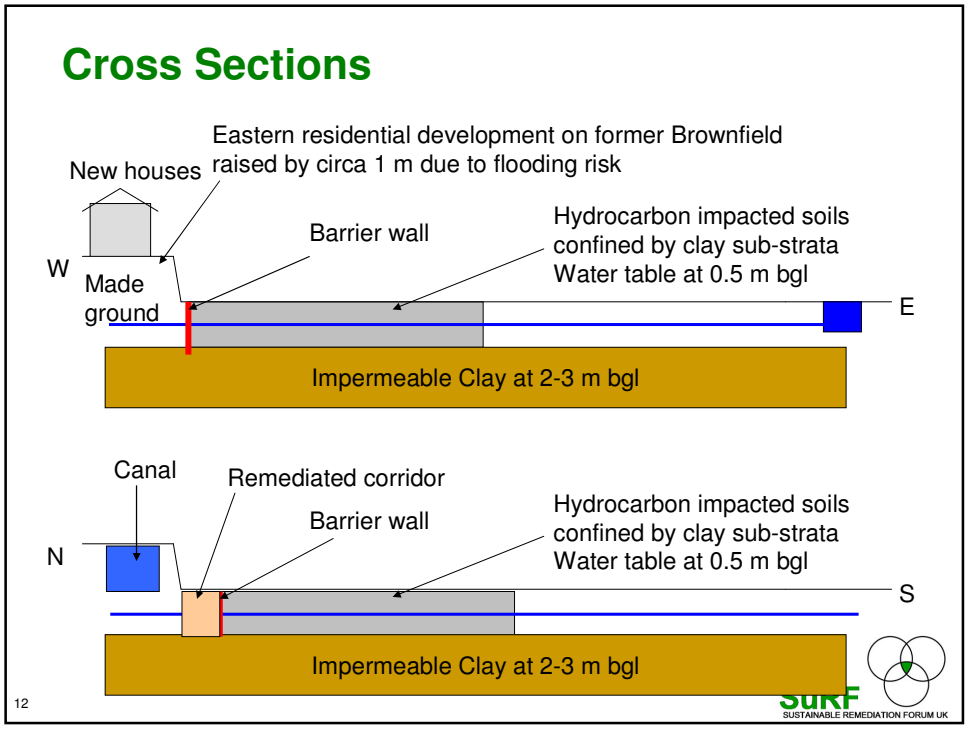

Remediation Design

- Opportunity to develop a sustainable remediation strategy – link to wider development opportunity
- Influence location of mixed-use zones
- Requirement for green space
- Consider requirement to raise levels
- Contamination source is c.5000 m^3 of hydrocarbon-impacted soils, free product and tank structures

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Exercise Part 1 (plenary discussion): Linkage to SuRF – UK Framework

- What is the added value of considering sustainable remediation, e.g.
  - Stage A or B?
  - Obvious points of synergy between site use, risk management goals and hence remediation design?
  - Obvious points of linkage between remediation and redevelopment in terms of resource efficiency (including land use)?
- Who needs to take part in discussions?
- How might sustainability criteria be set?
- What might key sustainability criteria be?

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Exercise Part 2: Develop an integrated sustainable remediation approach for the site

- The "brief"
  - Provide remediation options assessment to client supported by sustainability appraisal

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Syndicate Exercise

1. Whole Group Discussion to set boundary criteria for exercise (15 mins)
2. Work in syndicate groups (A & B) to undertake sustainability assessment to the problem (1 hr)
   - 20 mins: Setting key sustainability criteria using SuRF-UK indicator sheets
   - 20 mins: Identifying remedial options
   - 20 mins: Comparing different options and concluding groups findings
3. Feedback with whole group from syndicate groups findings (15mins)

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Discussion

- Looking again at the SuRF-UK framework – how was it used?
- How do your outcomes compare?

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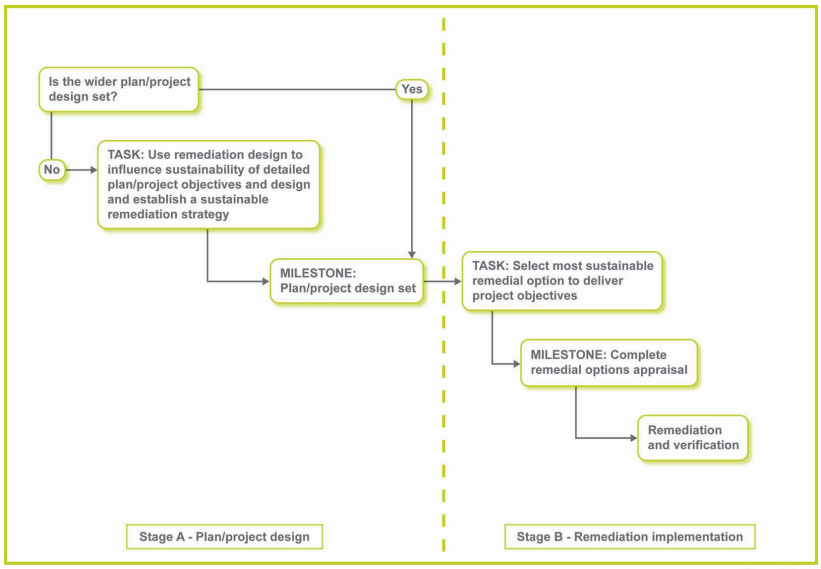
Applying the SuRF-UK Framework (A)



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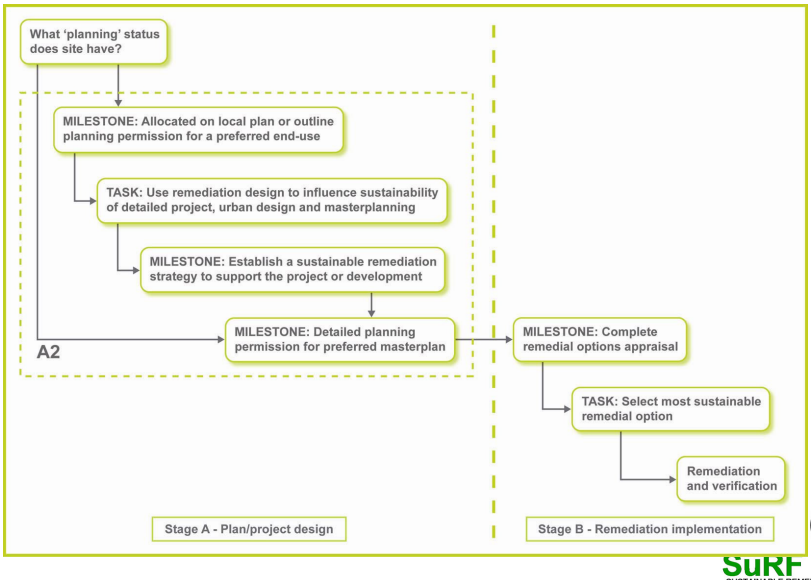
Applying the SuRF-UK Framework (A2)



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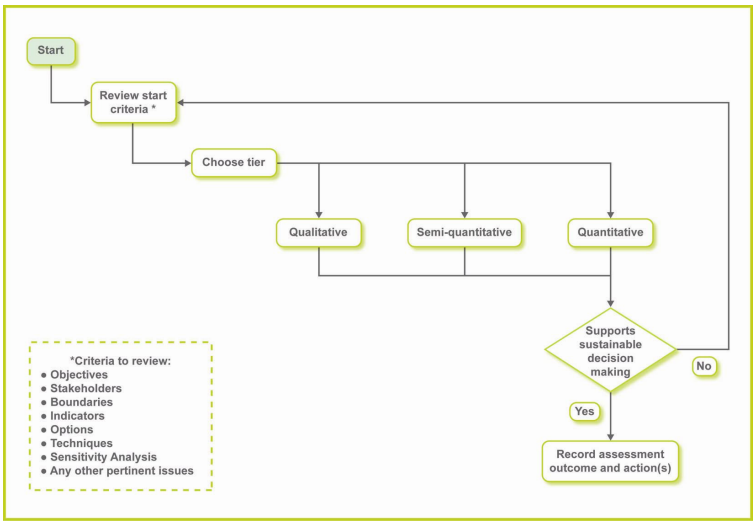
SuRF-UK Framework for assessment



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Example remedial options comparison

	Dig and dispose	Thermal desorption	Land farming	Cap and contain
Effective?	Yes	Partially (only HCs)	Yes (assuming mixing dilutes metals)	Yes
Manage risks?	Yes	Yes	Yes	Yes
Evaluate further	Yes	No	Yes	Yes

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Example remedial options comparison

	Dig and dispose	Thermal desorption	Land farming	Cap and contain
Effective?	Yes	Partially (only HCs)	Yes (assuming mixing dilutes metals)	Yes
Manage risks?	Yes	Yes	Yes	Yes
Evaluate further	Yes	No	Yes	Yes
Env	Use of landfill void Clean aggregate imported	*[CO_2 footprint Energy use]*	Low environmental burden	Avoided traffic and CO_2 from process technology
Soc	Traffic movement Dust High certainty of effectiveness		Potential for odour Perceived 'green solution'	Investor perception
Econ	Liability removal Landfill tax Rapid		Longer remedial time frame Medium cost	Potential liability remains Institutional control requirements Lowest direct cost
Possible rank	3	N/A	1	2

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