



A PRACTITIONERS
FRAMEWORK FOR
REMEDiation
Introduction & Guidance

Version 1.01
Issued: June 2019

RemSoc Framework

.... A practitioner's guide to
remediation

To Cover

1. RemSoc
2. An introduction to the framework
3. Next steps



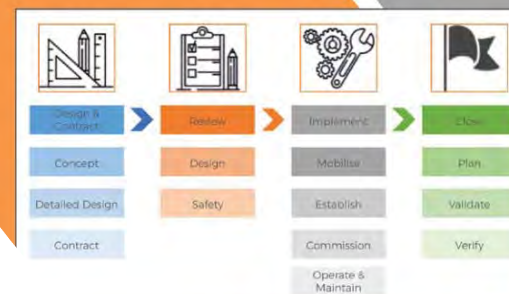
RemSoc 

RemSoc Practitioners Framework for Remediation is Live!

We are pleased to launch RemSoc's 'Practitioners Framework for Remediation' as a download guidance document and toolkit from the RemSoc website (remsoc.org.uk).

The development of a framework for the design, implementation, optimisation and completion of remediation works represents one of the original RemSoc objectives and a key time following the release of the updated **Land Contamination: Risk Management** guidance by the Environment Agency.

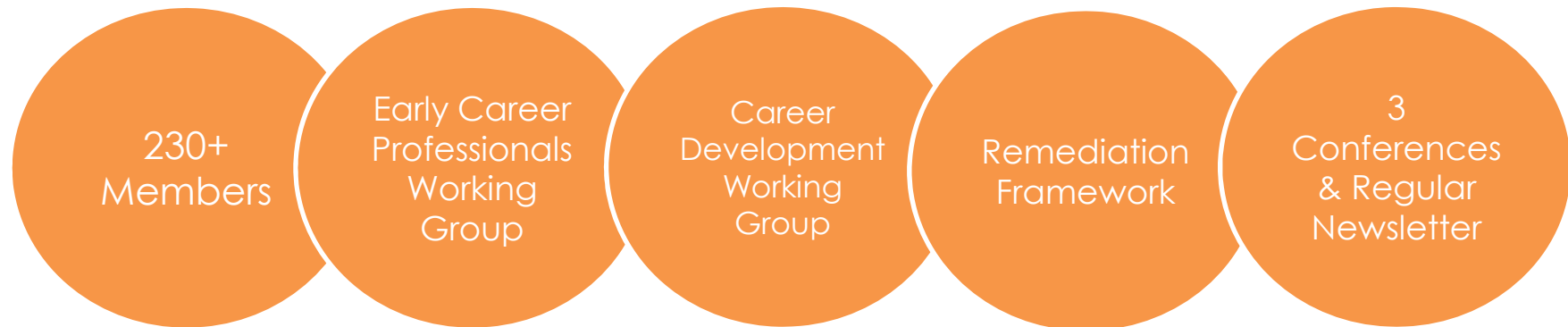
John, Chair of RemSoc, stated that "The creation of this Framework was one of the reasons for the establishment of our Society. The Framework has been developed to guide practitioners through the key stages of a remediation project and the decisions and actions that may be required at each stage of the project.



RemSoc Practitioners Framework for Remediation

About RemSoc

- A forum within which people can discuss and promote good practice in Remediation
- To encourage the participation of 'early career professionals'
- To facilitate the dissemination of knowledge
- To develop a framework for the design, implementation, optimisation and verification of works
- Promote remediation best practice – explore the good and the bad and share the learnings



Framework Guidance – Why?

- Early discussions amongst RemSoc members identified limited practical guidance around the design and implementation of remediation works.
- Limited hands on information to support the remediation practitioner
- Different practitioners focus on different areas.
- We challenged ourselves to explore and progress the development of a framework to support and guide the activities that should be considered in the implementation of a remediation programme.

Framework Guidance – Objective

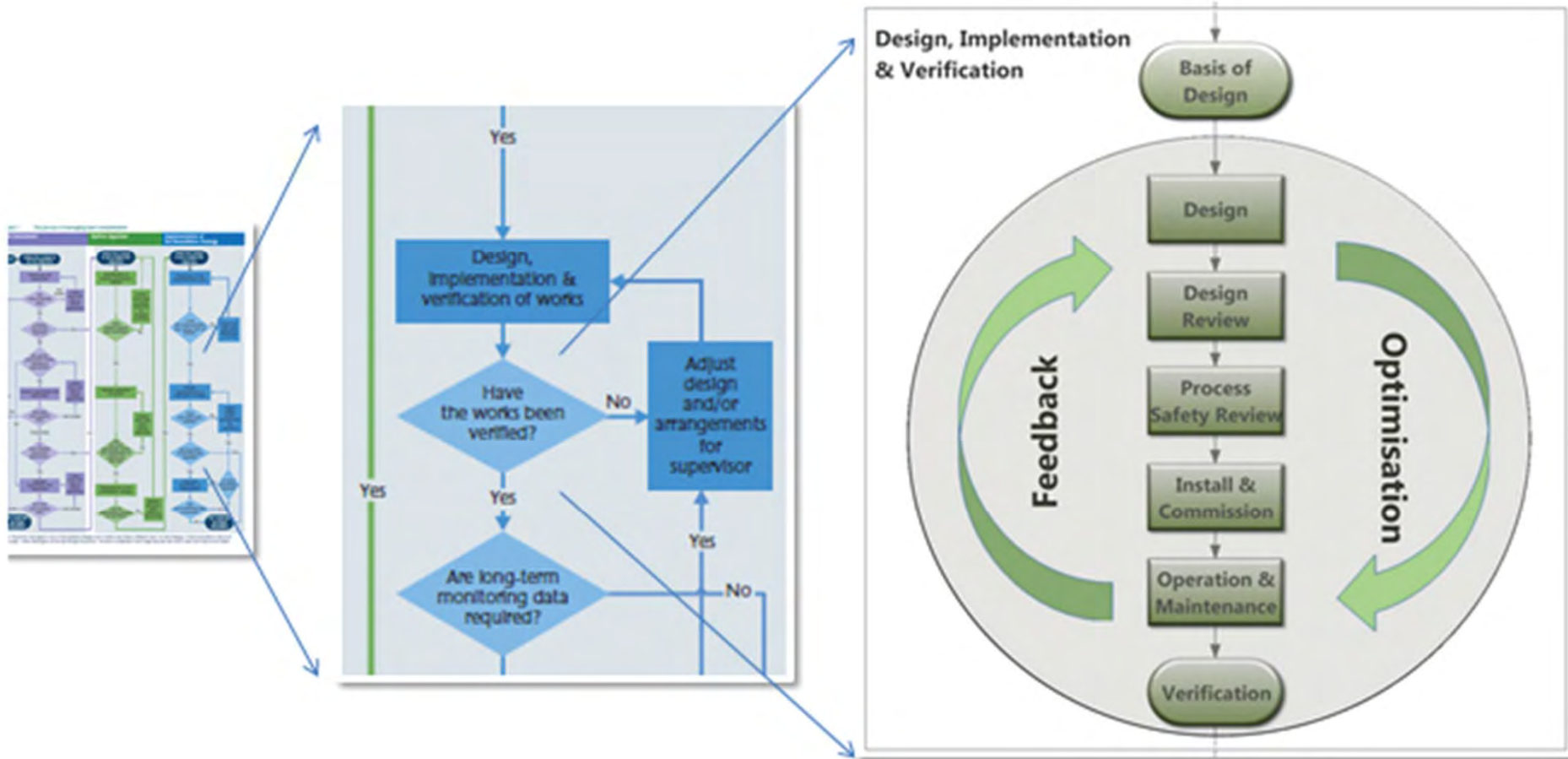
To develop a framework which

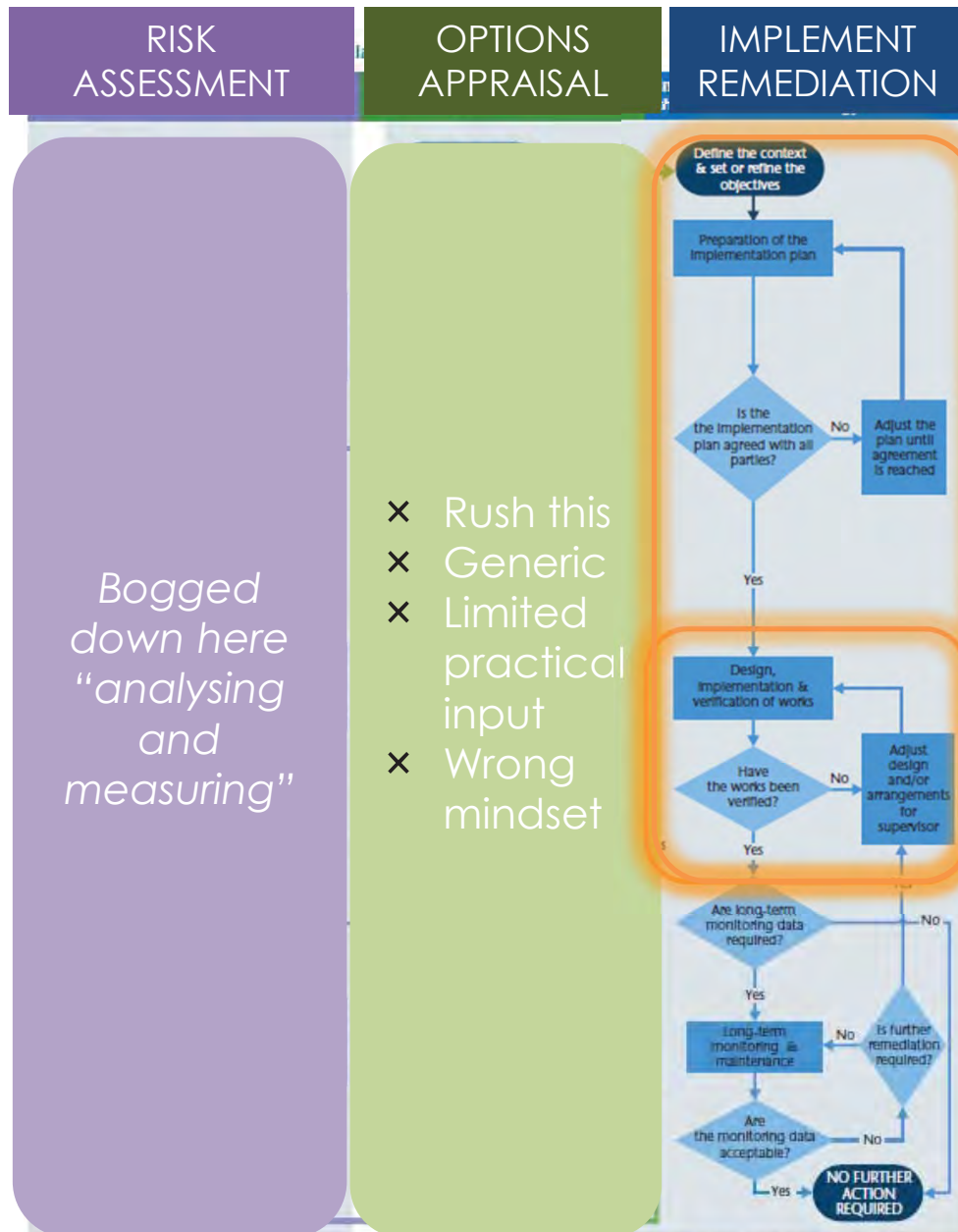
- Is applicable to a wide variety of remediation activities and scenarios
- Is flexible, and can be added to or adapted in response to the needs of practitioners and as our industry develops further
- Provides a useful point of reference and guidance for remediation practitioners at all levels
- Can be used as 'tool' in the implementation process

- 
- I. Protection of human health and the Environment
 - II. Safe Working Practices
 - III. Consistent, Clear & Reproducible Evidence Based Decision Making
 - IV. Record Keeping & Transparent Reporting
 - V. Good Governance and Stakeholder Involvement
 - VI. Sound Science

Aligns well with the Surf UK Guiding Principles

Framework Guidance – Where we were in 2016





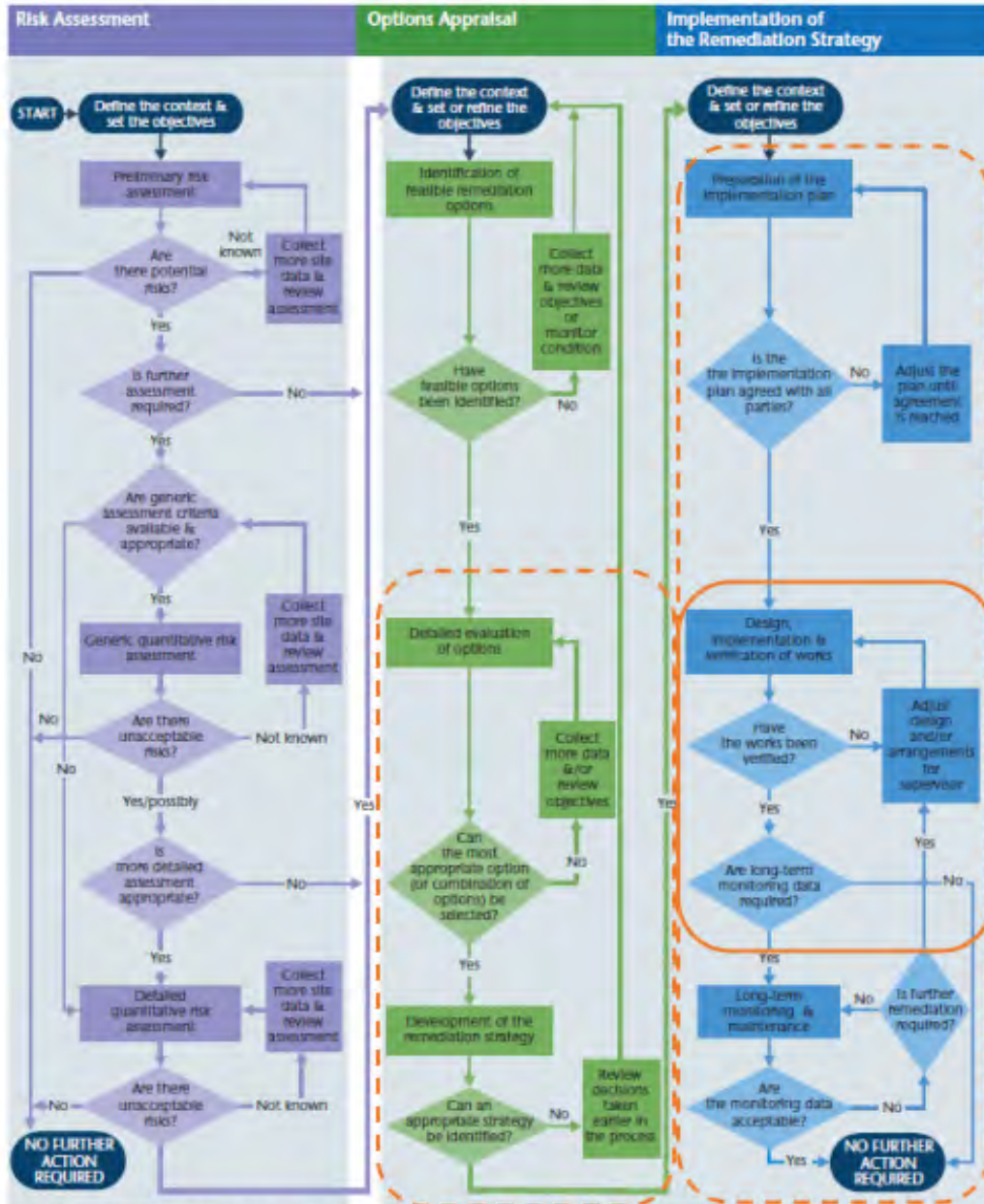
Looking at CLR11.....

This is the area we are focused on

- Lots of detail leading up to and after remediation
- Remediation is a big and often complicated financial commitment
- But the design and delivery gets the smallest amount of attention in CLR11

Note: The process may apply to one or more pollutant linkages each of which may follow a different route. For some linkages, it may be possible to stop at an early stage – others will progress all the way through the process. The level of complexity of each stage may also vary and in some cases may be very simple.

Figure 1: RemSoc Framework Relationship with CLR11



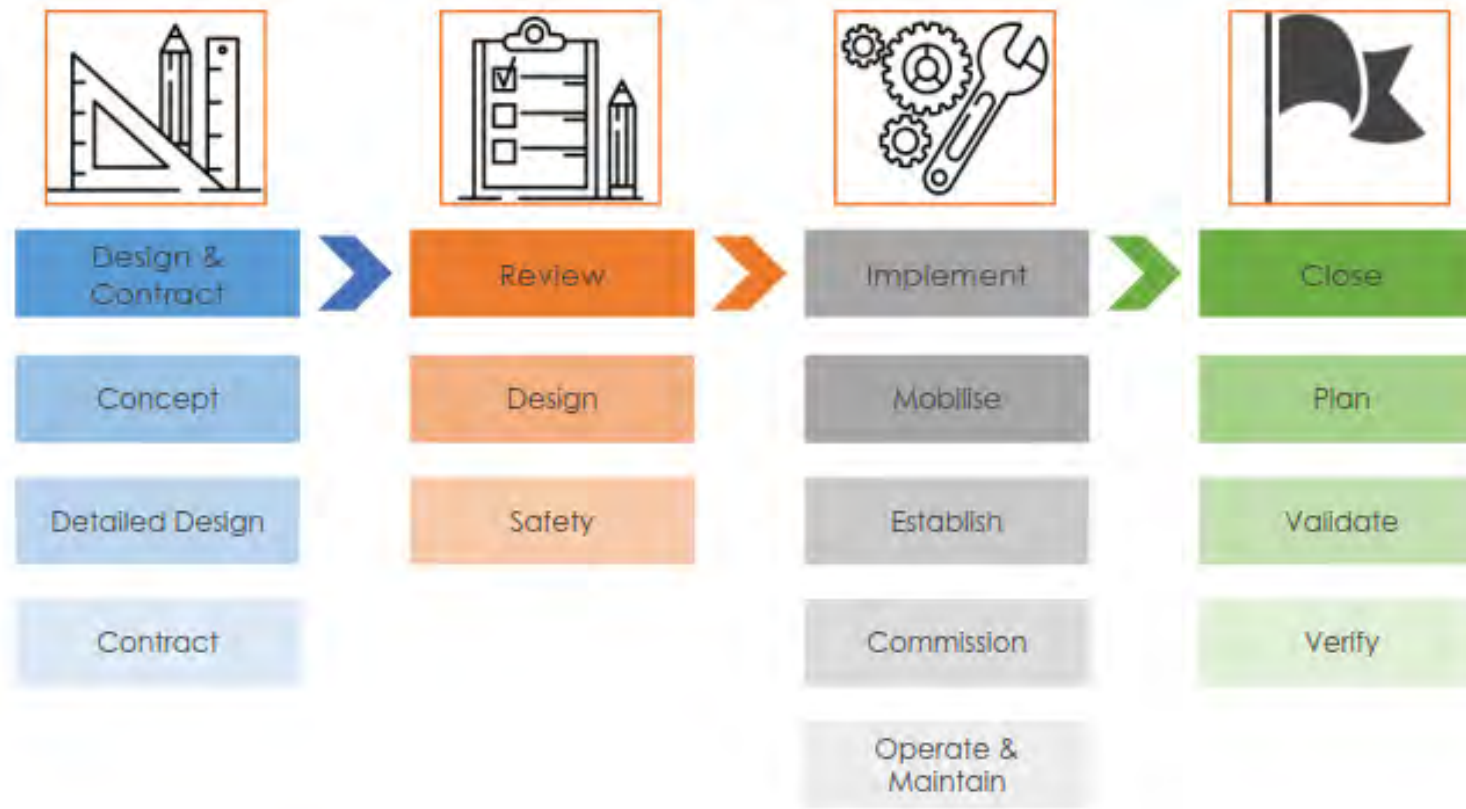
Note: The process may apply to one or more pollutant linkages each of which may follow a different route. For some linkages, it may be possible to stop at an early stage – others will progress all the way through the process. The level of complexity of each stage may also vary and in some cases may be very simple.

Expanded Area of Influence



Simplified Structure

Figure 2: RemSoc Practitioners Framework for Remediation



Framework Guidance Structure



Remediation Stage



Aspect to Consider



Relevant Questions









Comments & Prompts



Guidance or
References

For Example

Feature	Example
	Review
	Design Review
	Compliance with regulations
	What acts and regulations need to be complied with? What permits are needed to complete the works? Can they be obtained within the project timescales?
	These could include Environmental permit/Mobile Plant Licence; Abstraction licence; Discharge consent; Materials Management Plan; Asbestos Management Plan; Streetworks license; Machinery Directive (CE); DSEAR / ATEX; PUWER; CDM; Pressure systems regulations; Party Wall Act; Planning Regulations; Waste Licensing Regulations; Archaeological and Ecological aspects; Petroleum Regulations and Storage of Flammable Liquids
	http://www.hse.gov.uk/fireandexplosion/atex.htm (Link to ATEX Regulations as an example)



Framework
went live June
2019.....

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The development of a framework for the design, implementation, optimisation and verification of remediation works represents one of the original RemSoc objectives and comes at a key time following the release of the updated [Land Contamination: Risk Management guidance by the Environment Agency](#).

Mark Stevenson, Chair of RemSoc, stated that "The creation of this Framework was one of the key reasons for the establishment of our Society. The Framework has been developed to guide practitioners through the key stages of a remediation project and to signpost factors and decisions that may be required at each stage of the project."

As a group of practitioners from consulting and contracting backgrounds with a wide range of different experiences and perspectives we have challenged ourselves to create a framework that can be applied across a range of different remediation projects by all remediation practitioners for the benefit of a wide range of project stakeholders.

As always, all feedback will be very welcome to ensure that future updates further strengthen the tool, reinforce its applicability, and adapt to the changing needs of our industry."



RemSoc Practitioners Framework for Remediation



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encourage its use an
e that future updates
industry.

The framework
and tools can
be accessed via
the RemSoc.org
website



Choose the remediation stage that is relevant to your project

A	B	C	D	E
IL	Status	Aspects to Consider	Relevant Questions	Comments and Prompts
5	Not Applicable	Understanding the Remediation Objectives	Is sustainability or green remediation a consideration?	Consider: - the need to gather sustainability data - stakeholder involvement - the need for meeting sustainability targets such as waste minimisation
6	Open	Understanding the Remediation Objectives	Are remediation targets understood, achievable, realistic?	Consider: - Are the remedial targets rigid? Is there flexibility and contingency built in? - Can the proposed technology meet the remediation targets? Is this demonstrated by previous performance and evidenced? - Has a Remediation Options Assessment been completed? - What happens if the targets are not reached?
7	Due	Understanding the Remediation Objectives	What is the end point for the site?	Consider: - Future use of the site and the potential constraint to remediation - Does this require changes in site levels etc. and are these factored in?
8	Unclassified	Understanding the Remediation Objectives	How will remediation performance be measured?	Consider: - is there a requirement to measure remediation system performance as part of the works? - What information needs to be gathered during the works to support performance measurement and is this clearly defined? - How will remediation be verified and who will verify it? - What signals the completion of the works? The client, an environmental consultant, a regulator or a discharge of planning condition?
9	Not Applicable	Dealing with and Documenting Uncertainties	Is there anything we do not understand about ground conditions or physical conditions that could impact on delivering the remediation in line with the objectives and targets?	Consider: - Ground conditions - will they impact on the assumptions made? - Physical soil properties - is the physical soil structure understood - permeability / porosity / soil density / organic matter / oxidant demand / soil chemistry? - Obstructions - are they creating preferential flow paths? Could they be sensitive to aggressive treatment chemicals or remediation bi-products? - Utilities - will they constrain activities or provide pathways? - Site levels - do they impact the assumptions made? - Structural condition - is there anything that needs protecting?
10	Open	Dealing with and Documenting Uncertainties	Is there anything we do not understand about site contamination that could impact on delivering the remediation in line with the objectives and targets?	Consider: - NAPL characteristics - has NAPL recovery / transmissivity / properties or behaviour / characteristics been fully considered? - Degradation bi-products and intermediate contaminants, potential remediation chemicals - how will these behave? could they cause an impact? - Interactions between differing groups of contaminants (e.g. chlorinated solvents vs hydrocarbons)
11	Open	Dealing with and Documenting Uncertainties	Is there anything we do not understand about groundwater and hydrogeology and the site setting that could impact on delivering the remediation in line with the objectives and targets?	Consider: - Could in-situ treatment chemical have potential to increase risk of receptors being impacted via mobilisation of contaminants, or pose an environmental risk themselves - Do we know the background chemistry? And biogeochemical trends, intermediate degradation daughter products, effects of the presence of certain contaminants on the fate and mobility of others. - Do we know the suspended solids content and particle size? - Is there a risk of chemical attack to wells, pumps, pipework and plant? - NAPL or contaminant rebound - how likely will it be in the hydrogeological setting?

Relevant Questions	Comments and Prompts
<p>Is there anything we do not understand about groundwater and hydrogeology and the site setting that could impact on delivering the remediation in line with the objectives and targets?</p>	<p>Consider:</p> <ul style="list-style-type: none"> - Could in-situ treatment chemical have potential to increase risk of receptors being impacted via mobilisation of contaminants, or pose an environmental risk themselves - Do we know the background chemistry? And biogeochemical trends, intermediate degradation daughter products, effects of the presence of certain contaminants on the fate and mobility of others. - Do we know the suspended solids content and particle size? - Is there a risk of chemical attack to wells, pumps, pipework and plant? - NAPL or contaminant rebound - how likely will it be in the hydrogeological setting?

	Project	Acme Remediation		
	Client	The difficult one		
I	Status	Aspects to Consider	Relevant Questions	Comments and Prompts
1	Complete	Review and understand the Conceptual Model	Does the information provided adequately characterise the site and define the contamination distribution?	Consider: - Vertical and horizontal extent of contamination - Ensuring all remediation driver compounds are identified - Impacted media (soils, groundwater, soil vapour) - Migration pathways - Target areas / zones?
2	Open	Review and understand the Conceptual Model	Do we know the site history?	Important in ensuring that all the possible sources of contamination have been identified and investigated correctly or to a sufficient level to enable remediation to be designed or risks to be understood?
3	Due	Understanding the Remediation Objectives	Why is remediation taking place?	What is the legal driver - voluntary remediation, a change of use supported by planning permission or another mechanism and does this affect how the works will be delivered?
4	Unclassified	Understanding the Remediation Objectives	What are the remediation objectives?	Consider: - Are they clearly defined? - Are there any ambiguities or uncertainties? - Are remediation actions defined? - Are there any post remediation design elements for proposed development (e.g. vapour membranes and venting systems, bespoke concrete specification for aggressive environments etc) outside of your control? - Has options appraisal been undertaken and remedial technique or treatment train been finalised? - Has interaction between remediation techniques been assessed?
5	Not Applicable	Understanding the Remediation Objectives	Is sustainability or green remediation a consideration?	Consider: - the need to gather sustainability data - stakeholder involvement - the need for specific sustainability data to be gathered

In the simple mode you can chose a "status" and add notes

You can insert rows to add a project title.....



Stage 2a – Design Review

D	E
Relevant Questions	Comments and Prompts
<p>What drawings are required (by or for the client or for internal purposes)?</p>	<p>Consider:</p> <ul style="list-style-type: none"> - Process Flow Drawing and/or Process Instrumentation Drawing, - Piping and instrumentation diagram, - Layout drawing (process system or site layout), - Traffic management plan - Stockpiling areas - Utilities plan - Subsurface plans - Explosive atmosphere zoning - Existing features drawing - Electrical distribution
<p>What other documentation is required (design deliverable - refer to bid/contract)?</p>	<p>Consider:</p> <ul style="list-style-type: none"> - Pre-construction health and safety plan - Control statement or table and safe operating limits - Energy requirements
<p>Does approach selected align with available timescale?</p>	<p>Consider:</p> <ul style="list-style-type: none"> - Pre-start activities - Material and equipment lead in times - Permitting/licensing requirements & impacts - Client or Stakeholder inputs and potential impacts - Project milestones - Sub-contractor availability - Any interdependencies

Search

Design Contract Review Implement Close

A Practitioners Framework for Remediation

Edit Share Copy link Delete Flow

3	Document residual risks	Design Review	
4	Confirm compliance with regulation	Design Review	Wh cot cot Car tim
5	Confirm calculations are complete an...	Design Review	Wh Wh Ho obj Ha
6	Drawings and Design Documents	Design Review	Wh inte Wh del
7	Programme	Design Review	Do tim Are cou det
8	Type of Safety Review	Safety Review	Wh

Return to classic SharePoint

Aspects to Consider
[Confirm compliance with regulation](#)

Sub Stage
 Design Review

Relevant Questions
 What acts and regulations need to be complied with? What permits are needed to complete the works?
 Can they be obtained within the project timescales?

Comments and Prompts
 Environmental permit/Mobile Plant Licence,
 Astraction licence
 Discharge consent (to ground)
 Material Management Plan
 HSE for Asbestos
 Streetworks license
 Machinery Directive (CE)
 DSEAR / ATEX
 PUWER
 CDM
 Pressure systems regs.
 Party Wall
 Planning
 Waste
 Archaeological aspects
 Petroleum Regulations
 Storage of Flammable Liquids
[See less](#)

Guidance



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ATEX and explosive atmospheres

Explosive atmospheres in the workplace can be caused by flammable gases, mists or vapours or by combustible dusts. Explosions can cause loss of life and serious injuries as well as significant damage.

These pages will tell you more about explosive atmospheres and ATEX:

- [Background](#)
- [What is an explosive atmosphere?](#)
- [Where can explosive atmospheres be found?](#)
- [What is ATEX?](#)
- [Explosive atmospheres in the workplace](#)
- [Equipment and protective systems intended for use in explosive atmospheres](#)
- [Where can I find further information?](#)
- [BIS information on equipment and protective systems intended for use in explosive atmospheres](#)
- [Publications](#)
- [ATEX and DSEAR Frequently asked questions](#)

Background

Explosive atmospheres can be caused by flammable gases, mists or vapours or by combustible dusts. If there is enough of the substance, mixed with air, then

Resources

 Dangerous substances and explosive atmospheres L138 (Second edition)

 Controlling fire and explosion risk in the workplace

More resources

See also

- Dept for Business Innovation and Skills
- Energy Institute
- Association for Petroleum and Explosives Administration (APEA)
- Petroleum Enforcement

Related content

- [REACH](#)
- Exemption certificates
- [COMAH](#)
- Chemicals
- Risk

We have taken the decision to make the framework accessible to all to encourage its use and always, we would appreciate your ongoing feedback in order to ensure that future updates to the tool, reinforce its applicability, and adapt to the changing needs of our industry.

A Practitioners Framework for Remediation Issue 1.01

RemSoc Framework Basic Version 1.01

RemSoc Framework Risk Register Version 1.01

Stage 2a – Design Review

Relevant Questions	Risk Rating	Likelihood	Organisation	Owner	Update	Date of Last Update
What drawings are required (by or for the client or for internal purposes)?	Medium	Medium				
What other documentation is required (design deliverable - refer to bid/contract)?	Low	High				
Does approach selected align with available timescale?	High	Low				

The risk register version has an action section and a risk and likelihood rating section

Updates can be added making it a useful decision record tool

Framework Guidance – Next Steps

1. Promotion through conferences and engaging with regulators and clients
2. Develop case studies – gather feedback
3. Continue to populate, streamline and improve use-ability



www.remsoc.org

Thank you for listening....