Debunking Myths about Sustainable Remediation

International Cleanup Conference
Contaminated Site Remediation
Adelaide Convention Centre - September 2019

Gavin Kerrison & Jonathan Smith
Shell Global Solutions- Soil & Groundwater
Cautionary Note

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this presentation “Shell”, “Shell group” and “Royal Dutch Shell” are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words “we”, “us” and “our” are also used to refer to Royal Dutch Shell plc and subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. “Subsidiaries”, “Shell subsidiaries” and “Shell companies” as used in this presentation refer to entities over which Royal Dutch Shell plc either directly or indirectly has control. Unincorporated arrangements over which Shell has joint control are generally referred to as “joint ventures” and “joint operations”, respectively. Entities over which Shell has significant influence but neither control nor joint control are referred to as “associates”. The term “Shell interest” is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated arrangement, after exclusion of all third party interest.

This presentation contains forward-looking statements (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) concerning the financial condition, results of operations and businesses of Royal Dutch Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management’s current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Royal Dutch Shell to market risks and statements expressing management’s expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as “aim”, “ambition”, “anticipate”, “believe”, “could”, “estimate”, “expect”, “goals”, “intend”, “may”, “objectives”, “outlook”, “plan”, “probably”, “project”, “risks”, “schedule”, “seek”, “should”, “target”, “will” and similar terms and phrases. There are a number of factors that could affect the future operations of Royal Dutch Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this presentation, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell’s products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) cost associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in reimbursement for shared costs; and (m) changes in trading conditions. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this presentation are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk factors that may affect future results are contained in Royal Dutch Shell’s 20-F for the year ended December 31, 2018 (available at www.shell.com/investor and www.sec.gov). These risk factors expressly qualify all forward looking statements contained in this presentation and should be considered by the reader. Each forward looking statement speaks only as of the date of this presentation May 21, 2019. Neither Royal Dutch Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward looking statements contained in this presentation.

We may have used certain terms, such as resources, in this presentation that United States Securities and Exchange Commission (SEC) strictly prohibits us from including in our filings with the SEC. U.S. Investors are urged to consider closely the disclosure in our Form 20-F File No 1-32575, available on the SEC website www.sec.gov.
Take-away messages

- Sustainable Remediation concepts have developed rapidly in the past decade
  - SuRF-UK, and related, organizations
  - guidance has been prepared in numerous countries
  - ISO Standard 18504:2017

- The alignment in thinking necessary to develop an ISO standard also allowed joint statements of intent from practitioner and policy maker groups regarding sustainable remediation (NICOLE & Common Forum, 2013).

- Despite the consistent standards and guidance/ frameworks, there continues to be occasional misunderstanding of the goals of sustainable remediation.

- This presentation collates some of the common misconceptions, inaccurate claims and statements about sustainable remediation, and presents a view from a SuRF-UK Framework/ ISO Standard author.
What is Sustainable Remediation?

- SuRF-UK
  - “The practice of demonstrating, in terms of environmental, economic and social indicators, that the benefit of undertaking remediation is greater than its impact, and that the optimum remediation solution is selected through the use of a balanced decision-making process.”

- ISO 18504:2017
  - “elimination and/or control of unacceptable risks in a safe and timely manner whilst optimising the environmental, social and economic value of the work”
The journey

<table>
<thead>
<tr>
<th>Knowledge:</th>
<th>Ignorance</th>
<th>Recognition</th>
<th>Increasing understanding (and expectation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response:</td>
<td>Apathy</td>
<td>Outrage</td>
<td>Increasingly objective response</td>
</tr>
<tr>
<td>Remediation:</td>
<td>None</td>
<td>Every molecule</td>
<td>Risk-based</td>
</tr>
</tbody>
</table>
Some myths about sustainable remediation

**Myth 1.** Sustainability means you can do less remediation and leave unacceptable risks in place

**Reality.**
Risk prevails over sustainability as the criteria to trigger remedial action.
Sustainability assessment informs us of the best way to manage unacceptable risks.

**Myth 2.** Just saying a project is ‘sustainable’ makes it so

**Reality.**
Unsupported claims bring the reputation of sustainable remediation into question.
Claims of ‘Sustainable remediation’ should be demonstrated by compliance with relevant best practice documents.
More myths about sustainable remediation

**Myth 3.** It is only about saving money

**Reality.**
Efficient use of capital is important, but an SR assessment also considers environmental and social considerations. Sustainability assessment can lead to significant value creation across all three pillars of sustainability—economic, social, and environmental.

**Myth 4.** Green Remediation and Sustainable Remediation are the same thing

**Reality.**
Sustainable Remediation and Green Remediation are not synonymous with one another. Assessors should be clear about which framework they are adopting and why.
Even more myths about sustainable remediation

Myth 5. It is a new paradigm that requires much expertise, time and expense.

Reality.
Sustainable (and risk-based) management does require some skills development. However, it is not a new paradigm and draws heavily on what the contaminated site community already know and are familiar with.

Myth 6. Sustainability assessment is the same as conducting a CO₂ footprint analysis.

Reality.
Sustainability assessment requires an assessor to think broadly to ensure a valid and balanced assessment. CO₂ / GHG emissions are an important consideration, but not the only one.
Yet more myths about sustainable remediation

Myth 7. The assessment of social performance requires complex input from social scientists

Reality.
The use of existing governance structures, and fair and proper consideration of the effects of different remediation options on the range of stakeholders present is possible within existing structures and systems.

Myth 8. Sustainability can be directly and precisely measured

Reality.
It is the relative performance of the remediation options, and the selection of one, after appropriate stakeholder input, as the best or most sustainable option.
Conclusions

- Sustainable remediation assessment shows us how to manage unacceptable risks to human health and the environment in the best, most sustainable, way.
- Sustainable Remediation provides a framework to incorporate sustainable development principles into remediation projects and deliver significant value for affected parties and society more broadly.
- In debunking some myths about Sustainable Remediation it is hoped that consistent application of ISO 18504:2017/SuRF-UK framework (or equivalently robust guidance) will facilitate even wider use of Sustainable Remediation around the world.
For the full paper
