Leading practices in
ENVIRONMENTAL SITE REMEDIATION

R³
REMEDiate
RESTORE
REUSE

STRUCTURE

SUPPLY

VALUE

RISK
Best Practices from Industry Leaders

We spoke with top environmental remediation leaders from 25 MULTINATIONAL COMPANIES from a variety of industries to find out the most pressing issues impacting their business and gather best practices.

Learn what the most successful leaders are doing in remediation...

24% Rail
20% Chemical
16% Conglomerate
16% Oil & Gas
8% Pharmaceuticals/Bioscience
8% Auto
4% Utilities
4% Aerospace/Defense
Participating industry leaders represented a significant share of the corporate remediation market.

- $2 trillion Revenue
- $142 billion Net Income
- $2 trillion Market Capitalization
- 2.1 million Employees
The global scale and sophistication of corporate remediation programs is TREMENDOUS, with participants representing:

- Reserves ranging from < $60 million to > $1.6 billion
- Spend totals greater than $1.5 billion
For many, reserves have increased while spend has decreased year over year.

71% report a year-over-year increase in their reserves.

47% of companies say their corporate spend has resulted in lower reserves.
Participants are divided on predictions for annual spend over the next three years.

- 37% believe spend will remain constant over the next three years.
- 37% believe spend will increase by 10% or more.
- 26% say spend will decrease by 10% or more.
Industry Best Practice:
More than half plan for up to 10 years of reserves. More than 20% reserve for 20 years or more.
Industry Best Practice: Most companies use current costs to calculate reserve estimates and do not use escalators/deflators (e.g., energy costs, inflation, discounting) when setting up reserves.
Remediation leaders addressed their most pressing issues.

**Top Corporate Remediation Priorities**

1. Remediate, restore, reuse
2. Value-added organizational structure and management
3. Supplier strategy management and partnering
4. Demonstrate value: goals, metrics, KPIs
5. Appetite for risk and long-term solutions
Priority #1
Remediate, Restore, Reuse

Companies are taking on new and different types of risks. These include balancing remediation priorities and supporting the real-estate strategy.
There’s always been ‘constructive’ tension between remediation and real estate (a sell vs. cleanup mentality).
The good news...
The relationship between real estate and remediation is evolving to better align and create business value.
Industry Best Practice: Communication between integrated teams who share the same values is the best approach to managing real estate assets. Together, remediation and real estate teams can mitigate risk and create opportunity when aligned toward a common goal.
Industry Best Practice:
Remediation groups are testing a variety of approaches to manage site risk. Conservation easements are a successful way to manage risk while letting the legal staff define the terms of the sale.
Priority #2
Organization Structure & Management

Remediation organizations are evolving and must align with internal and external stakeholders to better assess and manage risk.
A centralized organizational structure continues to prevail as leaders set operating standards for their company.
Where the corporate function sits in the organization sets the tone and culture for the group.

A diversity of internal reporting structures exists, although **Environmental Health and Safety, Legal and Operations/Production** are most common.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Health &amp; Safety</td>
<td>26%</td>
</tr>
<tr>
<td>Legal</td>
<td>21%</td>
</tr>
<tr>
<td>Operations / Production</td>
<td>16%</td>
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</tbody>
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78% of remediation groups are the internal thought-leaders and sources of policy, standards and parameters for operations and facilities groups.
Remediation teams are doing more with less.

47% have 2-10 FTE project managers in 2015

58% had 2-10 FTE project managers in 2014
The good news is... technical staff numbers are increasing.

FTE TECHNICAL STAFF

48% have 1-10 FTEs on their technical staff in 2015

29% had 1-10 FTEs on their technical staff in 2014
Industry Best Practice:
Leaders are working more closely with internal corporate functions and adopting integrated decision-making frameworks that allow for more ownership and success in achieving their site objectives.
Industry Best Practice:
This requires greater involvement and reliance on the competencies of supplemental experts, consultants and contractors.
Priority #3
Supplier Strategy & Management

Companies are working to better align and balance internal and external resources through a supplier strategy.
Many companies want to minimize surprises from suppliers and take a more proactive approach to managing costs.
Industry Best Practice:
Communication is essential to managing expectations. A range of approaches is exercised by companies to manage costs and expectations, including the use of:

- capital project management discipline
- life-cycle costing
- cost engineering modeling tools
- operation and maintenance
- audit processes
**Industry Best Practice:**
Corporations are partnering with architecture and engineering suppliers to:

- leverage the power of products and services for mutual strategic growth
- achieve business objectives beyond the single dimension of site remediation
Industry Best Practice: Beginning projects with the end in mind allows for clear goal setting and more purposeful understanding of the desired outcome.
Industry Best Practice: The two most dominant drivers for outsourcing are reducing fixed costs (>50%) and the cost of liability (47%).
Priority #4
Demonstrate Value: Goals, Metrics, KPIs

Remediation leaders want to demonstrate, measure and report success.
Remediation organizations have not standardized their processes for measuring or capturing indicators of performance or success within the organization or with external suppliers.
Companies set, establish and manage expectations with suppliers through a variety of financial tools.

- 32% use Lump Sum
- 26% use Time & Materials
- 16% use Unit Costs
- 26% use Other Tools
Industry Best Practice:
Leaders use spend and budget to measure project and contractor performance, but stakeholder engagement can be a powerful KPI as well.
Safety record and technical capabilities dominate as the top criteria over pricing when selecting new consultants.

- **Technical Capabilities**: 89%
- **Safety Record**: 89% (vs. 67% in 2014)
- **Pricing & Costs**: 79%
Industry Best Practice:
The majority of companies use a scorecard to manage their relationships with contractors and evaluate safety, quality, adherence to pricing, schedule, project management, technical competency and certainty of outcome.
Industry Best Practice:
All respondents use one-on-one meetings to provide feedback for consultant reviews, and most disclose the scoring against internal metrics when measuring performance.
Industry Best Practice:
All remediation leaders rely on new concepts and remediation technologies from their consultants and other sources, such as peers, industry conferences and research, to help reduce the cost of liability.
Priority #5
Appetite for Risk

The role of remediation is evolving. The need to anticipate and reduce risk is becoming an important factor in day-to-day management.
Companies are taking a more holistic approach to managing risk and demanding more innovation, efficiency, simplification of processes and shareholder value.
Many are looking at key areas to prevent future liabilities.

1. Waste management and waste auditing
2. Materials handling
3. Procurement
4. Transportation logistics
5. Real estate leases
6. Land management and minimizing greenfield footprints
7. Risk tolerance
8. Existing facilities management, including indoor air quality and vapor intrusion
The CEO’s decision to take a preventative or reactive approach to risk significantly impacts the organizational structure and risk management approaches.
Industry Best Practice:
Corporate remediation functions are becoming tied to risk management and require a proactive approach to managing future liabilities. Remediation leaders are developing specific performance criteria into corporate policies and including ownership requirements into Master Agreements, leases, contracts and policies related to real estate, supply chain, facilities management and business partnership agreements.
The key to success is playing a larger role in:

1. utilizing your expertise inside your business to lead policy, standards and parameters for operations and facilities groups

2. developing progressive and programmatic approaches to manage corporate risk and liabilities
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