Upstream Remediation in the Urban Environment

Technical and Public Consultation Challenges

Jay Drew, Komex International Ltd.
Andrew Hamilton, Nexen Inc.
Overview

- Setting the Scene
- Remediation Challenges
- Public Consultation
The Changing Landscape

From Farm Field to Urban Fringe
Operating Environment

Calgary, Alberta Canada
Setting the Scene...
The Initial Investigation ...
Material Volumes

**Flare Pit**
Over-Burden 900 t or 450 m³
Contaminated 2900 t or 1450 m³
Replacement Fill 2900 t or 1450 m³
Truck trips (round) ~200

**Sump**
Good Over-Burden 900 t or 450 m³
Bad Over-Burden 1240 t or 620 m³
Contaminated 5600 t or 2800 m³
Replacement Fill 6800 t or 3400 m³
Truck trips (round) ~460
Project Team

**Specialists vs Turn-key Operations**

- Draws on strengths of firms

Lesson Learned

- Use separate remediation and restoration contractors
### Remedial Options

<table>
<thead>
<tr>
<th>Risk Assessment</th>
<th>Excavation &amp; Disposal</th>
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<tbody>
<tr>
<td>4 Potential Long Term Liability</td>
<td>4 Removes Liability</td>
</tr>
<tr>
<td>4 Longer Project Life</td>
<td>4 Short Time-frame</td>
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<tr>
<td>4 Difficulty with Public Buy-In</td>
<td>4 Easier Public Buy-In</td>
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Remediation Timeframe

*Parallel Paths: Assessment and Remediation*

- Provided example to residents of the remediation efforts to be undertaken on their properties.
- Proved to the regulators and the residents the Project Team’s ability to undertake the project and deliver on their promises.
- Provided a trial run for the cul-de-sac remediation program.
- Shortened project timeframe.
Fill Material

*Important to...*

- Assess environmental quality of fill materials.
- Assess suitability of fill material for intended re-use.
Under the Garages...
Slot Cutting Under the Foundation...
Chasing the Contamination...
Utilities & Wellbore

Jefferson Lake 11-27 Remediation
5 Weeks Later...
Public Consultation

*The Pay Forward Principle*

- Actively involving the public and community in the decisions that may impact their lives or livelihood.

- Communities have a legitimate right-to-know about our planned and on-going activities and to participate in decision-making for issues that affect them.
Public Consultation

Goals:

- Maximize Opportunities
- Minimize Impacts & Obstacles
- Establish & Enhance Relationships
- Respect & Trust
What can happen...

- Corporate reputation
- Shareholder confidence
- Costly delays
- Regulatory reviews
- Project failure
First steps...

- Investigation
- Regulators
- Key Stakeholders
- Resident
- Internal communication
- Fenceline

Wellsite Assessment & Investigation

In late November 2000 during a routine check of petroleum wellsite abandonment certificates, Alberta Environment identified that a surface reclamation certificate for the Jefferson Lake 11 of 27 wellsite was not on file. Nexen, Wascana Energy Inc. (Nexen / Wascana), partner and operator of the former well, was contacted for verification. An internal review of well abandonment files resulted in Nexen / Wascana being unable to confirm receipt of a reclamation certificate or site surface conditions at the time the well abandonment licence was issued. An immediate and exhaustive search of historical information and photographs involving past and present employees, both provincial & municipal regulators, the regional health authority, area developers, and the community association has been unsuccessful in determining the reclamation status of the Jefferson Lake 11 of 27 wellsite.
Community Interaction
Information to Empowerment...

...Building the better mousetrap

- Early Community Involvement
- Work the Issues - Not the Lawyers
- Communication - Personalize
- Anticipate Downstream Issues
- Follow-up
Responsible Care®: A Total Commitment®

- Responsible Care: Performance improvement effort established in 1985 by the Canadian Chemical Producers Association
- 6 Codes of Practice
- Balzac Sour Gas Complex Round 1 verification in 2002.
## Responsible Care®: A Total Commitment®

<table>
<thead>
<tr>
<th>OLD Ethic</th>
<th>Responsible Care Ethic</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Meet the Law</td>
<td>4 Exceed the Law - “do the right thing”</td>
</tr>
<tr>
<td>4 Keep Low Profile</td>
<td>4 Be seen for doing the right thing</td>
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<tr>
<td>4 Advise the Public</td>
<td>4 Consult proactively with the Public</td>
</tr>
<tr>
<td>4 Defensive to Regulations</td>
<td>4 Contribute Positively to Public Policy</td>
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<tr>
<td>4 Downplay Public Concerns</td>
<td>4 Seek to Understand Public Concerns</td>
</tr>
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Bottom Line

Economic Success & Responsible Global Citizenship
Commitment = Performance

Source: Business and Society Review
energy to outperform