Optimization of Gas Detection
Introducing ERM

ERM is a leading global provider of environmental, health and safety, risk, social consulting and sustainability related services

- 150 offices in 40 countries
- 5,000 employees
- Projects in more than 170 countries
- Over 40 years of experience
- Worked closely with over 50% of the Global Fortune 500 companies in the past 3 years
- Significant expertise on major capital projects
## Global Risk Practice

<table>
<thead>
<tr>
<th>Location</th>
<th>Risk Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>28</td>
</tr>
<tr>
<td>Europe, Middle East, Africa</td>
<td>43</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>79</td>
</tr>
<tr>
<td>Human Factors (UK)</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>165</strong></td>
</tr>
</tbody>
</table>
Steps in Risk Management

- Identification of the threats/hazards to Human Life, Environment and Business
- Identification of Controls and Mechanisms to prevent these threats/hazards
- Identification of the Risk associated
- Managing these Risks with appropriate mitigation
Background

Past - Issues with gas leaks and fires at well pad sites;
Present - Addressed with an aggressive gas detection program
Future - Desire to determine if the gas detection program is appropriate, aggressive enough, not too aggressive.
Objective

Review the existing gas detection locations at the well pads,
Collect existing gas detection data by phase (production, drilling, etc.)
Summarize and interpret existing gas detection data
Conduct an analysis of gas detector locations relative to industry best practices.
Develop criteria for short term and long term modifications to deployments including resources
Steps

1. High level verification of existing gas detection data in conjunction with the findings
2. Compare data with incident reports
3. Field visit
4. Data interpretation
5. Focused gap assessment on how detection is deployed in the field
Preliminary Observations

• Locations of the portable gas detectors
• Use of personal gas monitors
• Emergency Response
Questions