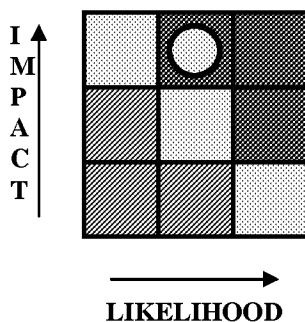


No Harm to People Risk Assessment

The human health risk assessment evaluation for benzene has been done using the DS Risk Matrix in collaboration of Shell Health Services, DS HSSE, and external affairs.

The overall risk evaluation is: High, Stable, Needs improvement

Metrics for assigning high, medium, or low to impact and likelihood:

		Low	Medium	High
Impact	HSE			
	People	Slight Injury / Minor Injury potential	Major / PTD (1-3 Fatalities) potential	Multiple Fatalities potential
Likelihood	Relevance			
	Occurrence of risk in relevant business has been observed...	Rarely	From time to time	A number of times to frequently
	Impact could be seen in the	Medium to Long term	Short term	Immediate
	Risk Environment	Relationship to the degree of difficulty in terms of manageability of risk environment.		
	Exposure to this type of risk is	Infrequent	Frequent	Daily or Constant
	Ability to avoid the risk occurring or manage its consequences is	High	Moderate	Low
	Response			
	Ability to mitigate the risk is	High	Moderate	Low or non-existent
	Current assessment of response framework	Decreasing robustness or vulnerability ~~~~~>		

Supporting Documentation

- Linked with the Group Shell Health's protocol for Health Risk Assessment (HRA) that is an integral part of Shell Minimum Health Management Standard (MHMS). Shell Health has assigned a 4/5-severity level for people. Likelihood is assigned as medium, based on the occurrence in industry of more than once per year.
- **Chemicals HSSE Issues Matrix** has a "Benzene" bubble and an "Environmental Health" bubble that includes health and environmental issues associated with Shell Chemicals products.
- **DS HSSE Issues Matrix** has a "Shanghai Health Study" bubble and an "Environmental Health" bubble that includes health and environmental issues associated with Downstream products.

Benzene HSE Strategy - Issue Description

Below is the detailed evaluation based on criteria using the Downstream Risk Matrix:

- | | | <u>Level</u> | <u>Justification</u> |
|--|------------------|--------------|----------------------------------|
| • Impact: | | Medium | PTD or up to 3 fatalities |
| | | High | More than 3 fatalities |
| • Likelihood: | Relevance | Medium | From time to time |
| | Risk environment | Medium | Moderate |
| | Response | Medium | Moderate ability to mediate risk |
| ♦ Impact + Likelihood = High Risk Level | | | |
| • Status of controls: Stable | | | |
| • Shell has processes in place to protect workers to level of country regulatory occupational exposure limits. | | | |
| • Current worker monitoring process has not identified exposure related health effects. | | | |
| • Shell DS is implementing the new global OEL. | | | |
| • Acceptability: Needs improvement | | | |
| Projects that are currently underway and for consideration include: | | | |
| • Worker exposure and health monitoring to be standardized | | | |
| • Consider developing community fenceline guidance value | | | |

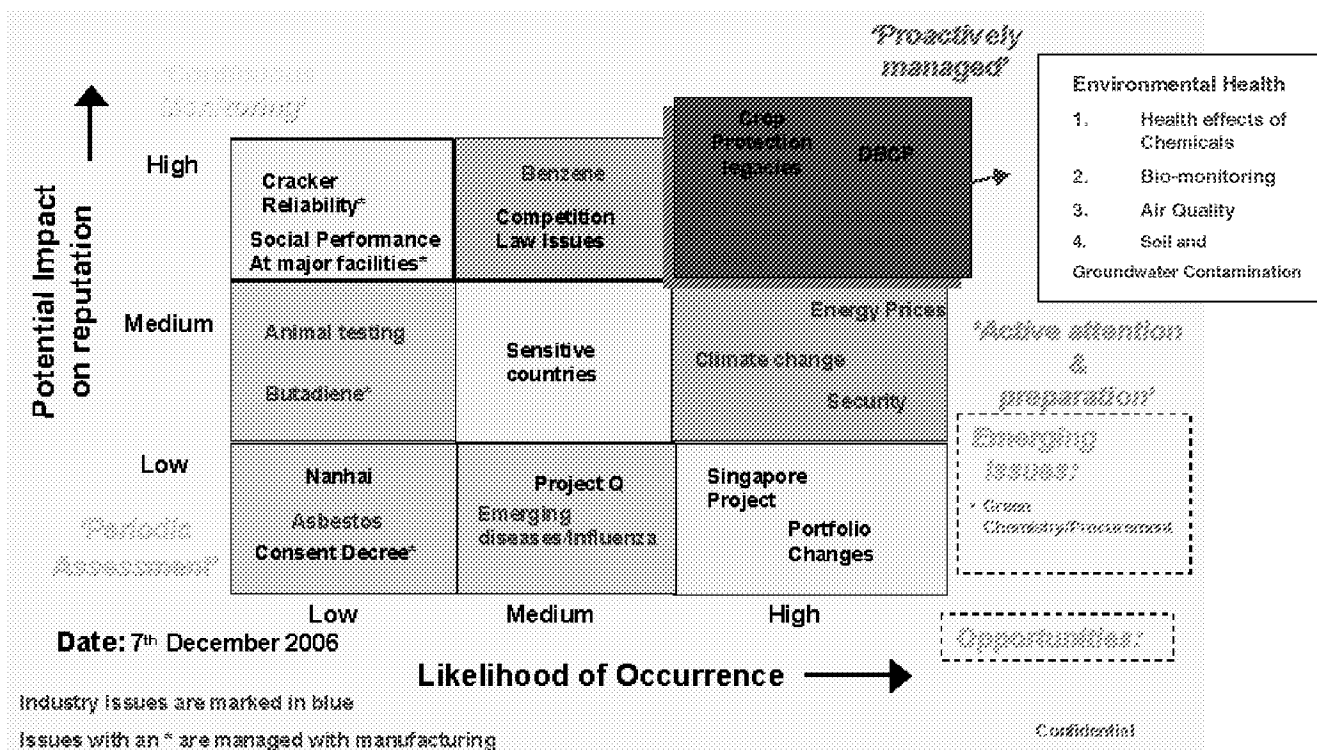
Support for the evaluation includes:

- Shell Health Services Benzene Health Risk Assessment (HRA Process) that supports the Minimum Health Management Standard (MHMS)
- Chemicals HSSE Issues Matrix
- DS HSSE Issues Matrix
- Chemicals Screening Level Risk Assessment in support of Responsible Care SD target
- **Shell Health Services** rates the benzene health risk as
 - Severity: 4/5: used for all known human carcinogens
 - 4, PTD or up to 3 fatalities: 0.1 – 5% benzene
 - 5, More than 3 fatalities: >5% benzene
 - Likelihood: C - Has happened in the organization or more than once per year in the industry

Risk Level: High, in the red

Benzene HSE Strategy - Issue Description

- **Chemicals HSSE Issues Matrix** has a “Benzene” bubble and an “Environmental Health” bubble that includes health and environmental issues associated with Shell Chemicals products.



- The “Benzene” Issue bubble highlights health, environmental, gasoline, regulatory, NGO activity, and Shell activities to minimize exposure.



"Benzene Issues
Brief April 2007.doc"

- The “Environmental Health” bubble focuses on 7 key areas:
 1. Concerns regarding the **health effects of chemicals**, including impacts to sensitive groups such as children.
 2. Concerns regarding the use and manufacture of specific chemicals, such as **Butadiene** and **Benzene**, and **exposures within close proximity of sites**.
 3. The increasing use of biological monitoring (also known as **biomonitoring**) to assess exposure to chemicals.
 4. Concerns regarding **air quality** resulting from site operations and consumer use of chemicals.

Benzene HSE Strategy - Issue Description

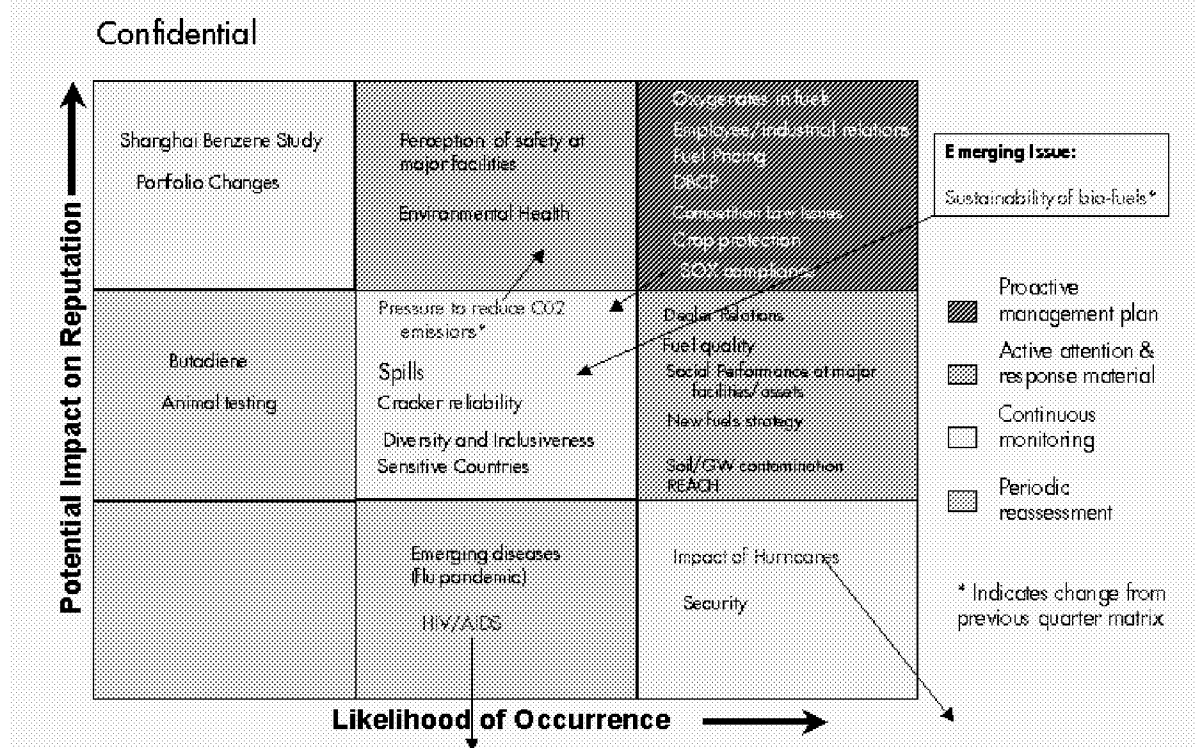
5. Concerns regarding **soil and/or groundwater contamination** resulting from site operations and consumer use of chemicals.
6. Government and NGO support for '**green chemistry**', in part driven by increasing demand from regulatory bodies and consumers for 'green' and 'natural' alternatives to man-made chemical products



Environmental_Health_of_Chemicals,__17

- **DS HSSE Issues Matrix** has a "Shanghai Health Study" bubble and an "Environmental Health" bubble that includes health and environmental issues associated with Downstream products.

Q1 2007 Reputation Issues Matrix

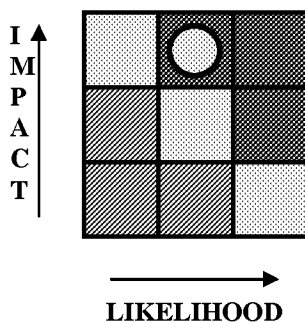


- The "Shanghai Health Study" Issue bubble is a subset of the Chemicals "Benzene" bubble. This is a multiyear study, costing \$35M that has as its objective to better understand the potential adverse health effects that may be associated with exposure to benzene.

Benzene HSE Strategy - Issue Description

- The “Environmental Health” bubble: See comments under the “Protect People” section.

Chemicals Screening Level Risk Assessment in support of Responsible Care SD target classifies benzene as a medium

No Harm to People Risk Assessment

The human health risk assessment for benzene has been completed using the DS Risk Matrix in collaboration of Shell Health Services, DS HSSE, and external affairs.

The overall risk evaluation is: High, Stable, Needs improvement

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- Likelihood evaluation defaults to most severe.
-

Supporting Documentation

- Linked with the Group's protocol for **Health Risk Assessment (HRA)** that is an integral part of Shell Minimum Health Management Standard (MHMS). Shell Health has assigned a 4/5-severity level for people, which is equivalent to high impact. Likelihood is assigned as medium, based on the occurrence in industry of more than once per year. A CONCAWE meta-analysis of 3 epidemiology studies has identified additional xx cases of AML, yy of which were former Shell employees.
- **Chemicals HSSE Issues Matrix** has a "Benzene" bubble and an "Environmental Health" bubble that includes health and environmental issues associated with Shell Chemicals products (see report for details).

Benzene HSE Strategy - Issue Description

- **DS HSSE Issues Matrix** has a “Shanghai Health Study” bubble and an “Environmental Health” bubble that includes health and environmental issues associated with Downstream products (see report for details)