

*“Working with passion
giving high performance and determination.”*



2014

One Company

One Focus



One Mission

One Vision

HSSE Performance Indicators

Introducing and Using Process Safety Performance Indicators

Ashley HASLETT & Ben WILLIAMS



Introducing and using PSPI's



Objectives:

1. To create an awareness in the difference between Occupational Health & Safety and Process Safety,
2. To identify the barriers or control measures that form the Process Safety Performance Indicators,
3. To explain the Leading and Lagging Indicators that EPC-UK are applying to provide PSPI's.



Occupational vs Process Safety



EPC
PE

Occupational Safety

Occupational Safety is about how we as individuals stay safe and prevent injury to ourselves

Incidents typically have **a high likelihood but low consequence** – unless you're the person involved!

Process Safety

Process Safety is based on production and processing activities that have the potential to cause wide spread damage and injury

Incidents typically have a **low likelihood but higher consequence.**

We need to maintain commitment to both elements within our industrial safety culture



Source: National Skills Academy

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Defining “Process Safety”



Process Is:

Any activity or combination of activities including the:

- Use
- Storage
- Manufacturing
- Handling and
- Movement

of hazardous substances



Safety Is:

Quality of mind!
Being and Feeling Safe

Freedom from danger or risk of
injury

Control systems and engineering
functions that are designed to
prevent, or reduce the risk of injury
and incidents

A blend of engineering, management, and operational skills focused on preventing catastrophic accidents; particularly explosions, fires, and toxic releases associated with the use of chemicals and petroleum products



Source: Centre for Chemical Process Safety

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Process Safety incidents



Flixborough – 1st June 1974



Seveso (Italy) 10th July 1976



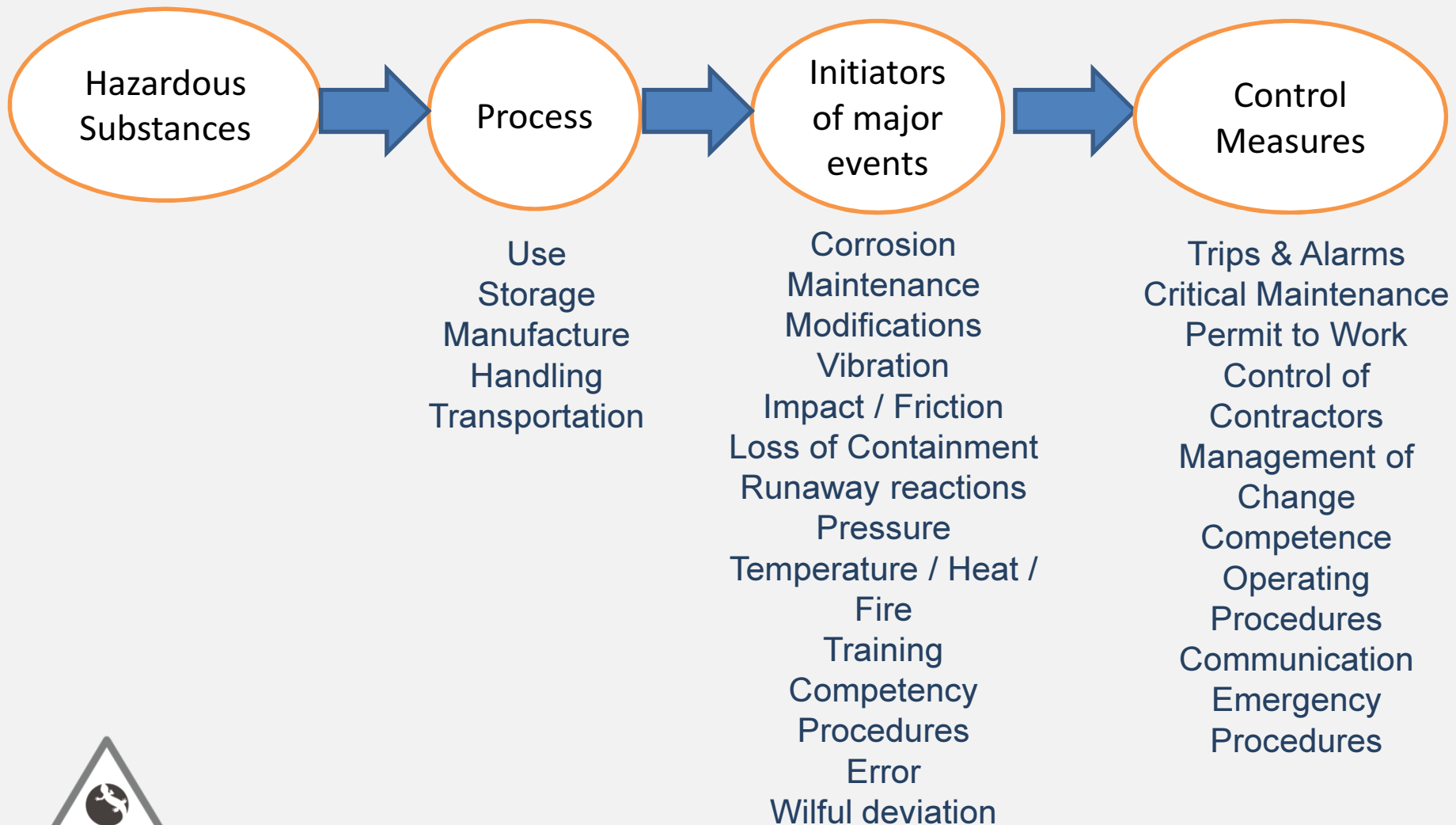
Texas City -23rd March 2005



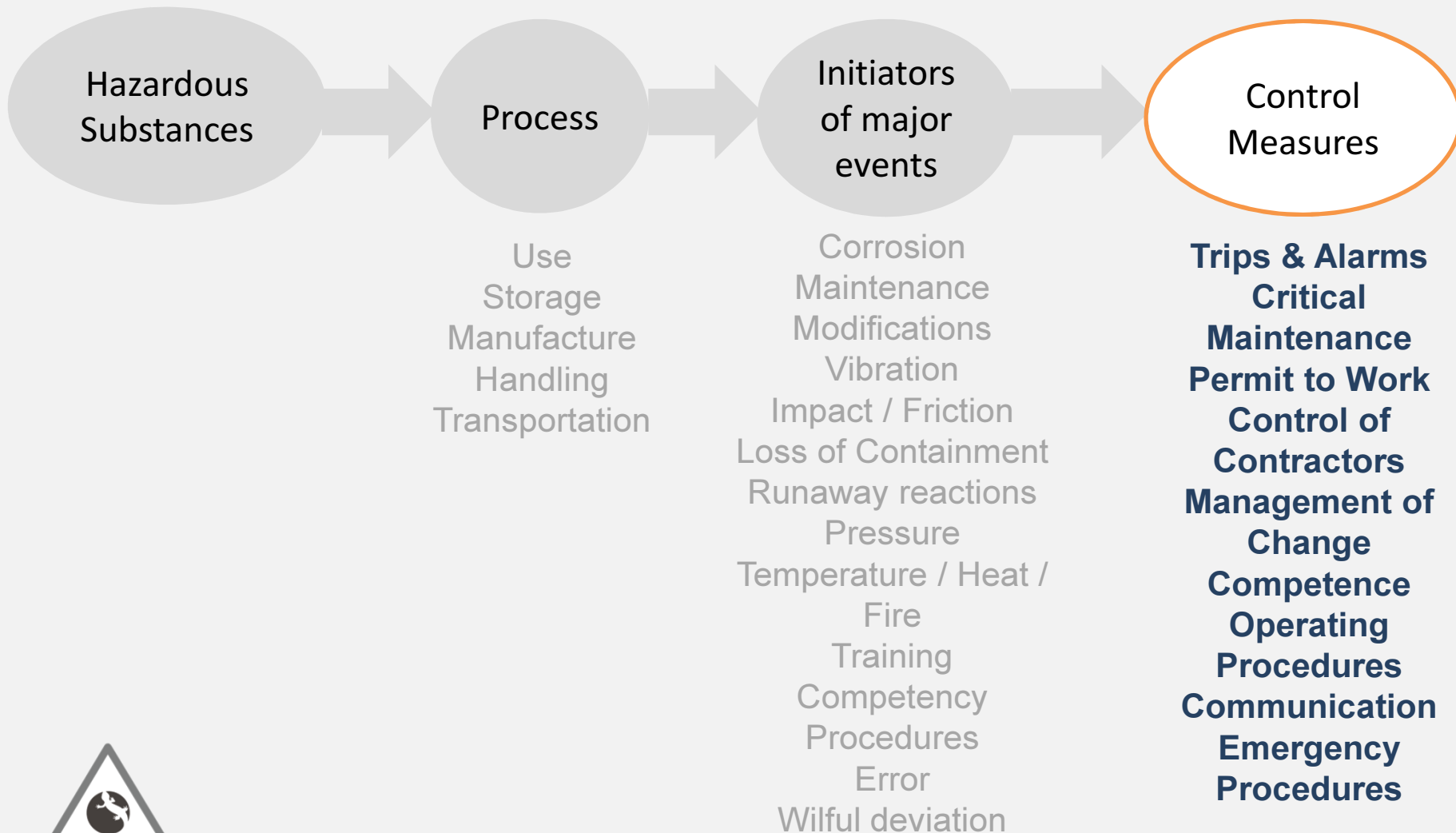
Buncefield – 11th December 2005



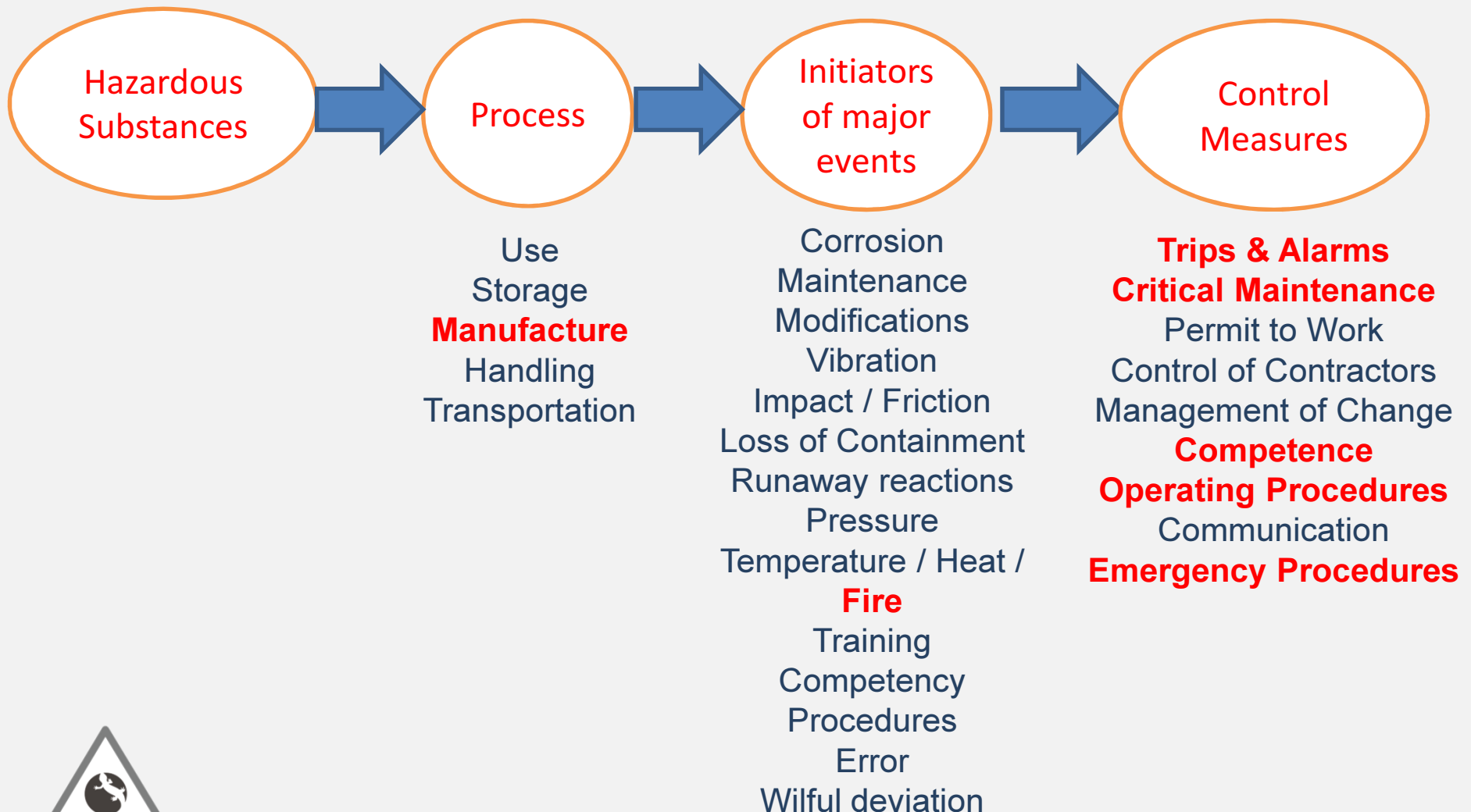
The Process Safety “system”



The Process Safety “system”



The Process Safety “system”



What is missing from the Process Safety system?



We have;

- Control measures to prevent a major accident,
- Procedures to implement and maintain the control measures,
- Trained the relevant personnel,
- Audited the control measures on a “risk basis”,
- Reviewed the process management system annually.

Is sufficient reassurance being given to senior management the process safety is operating at all times as intended?

Probably not – hence the reason for Process Safety Performance Indicators



Process Safety Performance Indicators



Senior management need;

- 1 An assurance that the process safety management system is operating as intended,
- 2 Report compiled monthly and circulated,
- 3 High level visual indication providing confirmation, (or not as the case may be)
- 4 A maximum of 8 elements monitored being displayed,
- 5 An appropriate “Leading” and “Lagging” indicator for each of the elements,
- 6 Limits agreed upon which senior management shall be alerted,
- 7 Ability to witness trends,
- 8 An ability to “drill down” into the data if required.



Process Safety Performance Indicators



Trips and Alarms

Leading Indicator - % of trips and alarm checks completed in month

Lagging Indicator – Number of trips or alarms that failed to operate as designed

Critical Maintenance

Leading Indicator - % of safety critical maintenance completed in month

Lagging Indicator – Number of loss of containment incidents in last 12 months

Permit to Work

Leading Indicator - % of Permit to Work certificates adequately specified and implemented (sample basis only)

Lagging Indicator – Number of incidents occurred in last 12 months from PtW failures



Process Safety Performance Indicators



Control of Contractors

Leading Indicator - % of Control of Contractor certificates adequately specified and implemented (sample basis only)

Lagging Indicator – Number of incidents occurred in last 12 months from CoC failures

Management of Change

Leading Indicator – % of MoC's identified as being processed correctly (sample)

Lagging Indicator – Number of incidents in last 12 months implicating MoC

Competence

Leading Indicator – % of competence assessments completed as scheduled

Lagging Indicator – Number of incidents occurred in last 12 months from Competence



Process Safety Performance Indicators



Operating Procedures

Leading Indicator - % of Job Cycle Checks completed in period

Lagging Indicator – Number of procedures overdue for review

Emergency Preparedness

Leading Indicator – % of emergency provision checks completed in period

Lagging Indicator – Number of failures noted during emergency checks



PSPI's Dashboard



EPC
GROUPE

Trips and Alarms

Leading Indicator - % of trips and alarm checks completed in month

100%

Lagging Indicator – Number of trips or alarms that failed to operate as designed

0

Critical Maintenance

Leading Indicator - % of safety critical maintenance completed in month

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Lagging Indicator – Number of loss of containment incidents in last 12 months

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Management of Change

Leading Indicator – % of MoC's identified as being processed correctly (sample)

100%

Lagging Indicator – Number of incidents in last 12 months implicating MoC

1

Competence

Leading Indicator – % of competence assessment completed as scheduled

100%

Lagging Indicator – Number of incidents occurred in last 12 months from Competence

2

Operating Procedures

Leading Indicator - % of Job Cycle Checks completed in period

100%

Lagging Indicator – Number of procedures overdue for review

0

Emergency Preparedness

Leading Indicator – % of emergency provision checks completed in period

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Lagging Indicator – Number of failures noted during emergency checks

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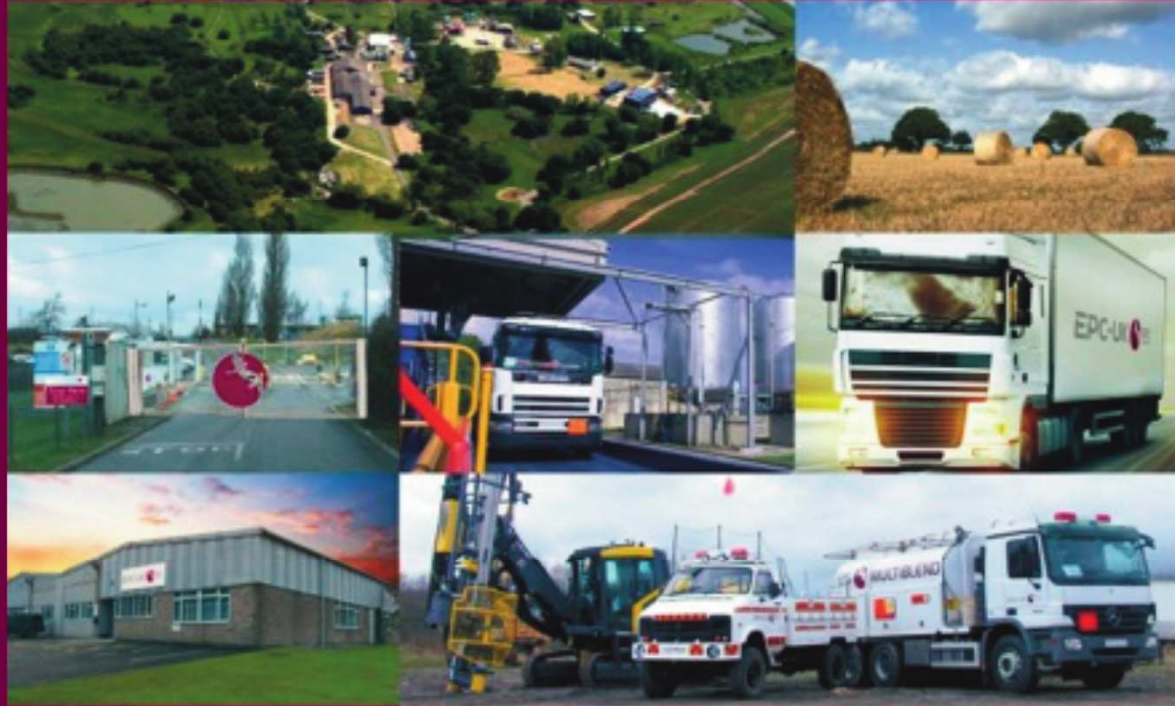
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