



Managing Pipelines With Reduced Depth of Cover

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UKOPA/14/003

Background

- National Grid have had a number of recent issues associated with pipelines with below standard depth of cover:



Oct 2011 200mm 19 bar
pipeline damaged at Wattlesfield
Hall, Wymondham



Types of erosion

- ❑ There are 4 main types of soil erosion, these are:
 - ❑ Water erosion
 - ❑ Wind erosion
 - ❑ Gravity
 - ❑ Tillage



Contributing Factors

The key contributing factors are:

- Land use- e.g. larger fields, reduced hedgerows, laser levelling – to manage water level and hence crop growth
- Climate – wind, rain, drought
- Soil type – susceptibility of soil to erosion
- Hydrology – overland and subsurface water flows
- Landforms – slopes and gradients



What is National Grid Currently Doing?

- ❑ Identified potential higher risk locations through:
 - ❑ Recorded shallow depths at locations where digs have been previously undertaken
 - ❑ Pipelines in or near to peat
 - ❑ Known shallow pipelines – local knowledge

- ❑ The above factors have been used to prioritise linewalking
 - ❑ Linewalking – pipeline depth measurements being taken every 50 m using a pipe location device (RD 8000)
 - ❑ Data recorded on an iPhone using a bespoke App

Picture of output from iPhone App



Red < 0.6m
Amber = >0.6m =<0.9m
Green >0.9m

Having Identified Shallow Pipeline What Are the Options?

- Risk assessment to justify continued operations without further mitigation – taking account of the depth of cover and land useage
- Agree restrictions on land use with the landowner (will probably involve compensation payments)
- As above but also physically restrict access above the pipeline with fencing
- Move the pipeline
- Increase cover over the pipeline or relay pipeline deeper

UKOPA Best Practice Document

- ❑ HSE at the HSE/UKOPA liaison meeting has asked UKOPA to document industry best practice for managing shallow pipelines

Best Practice Documents

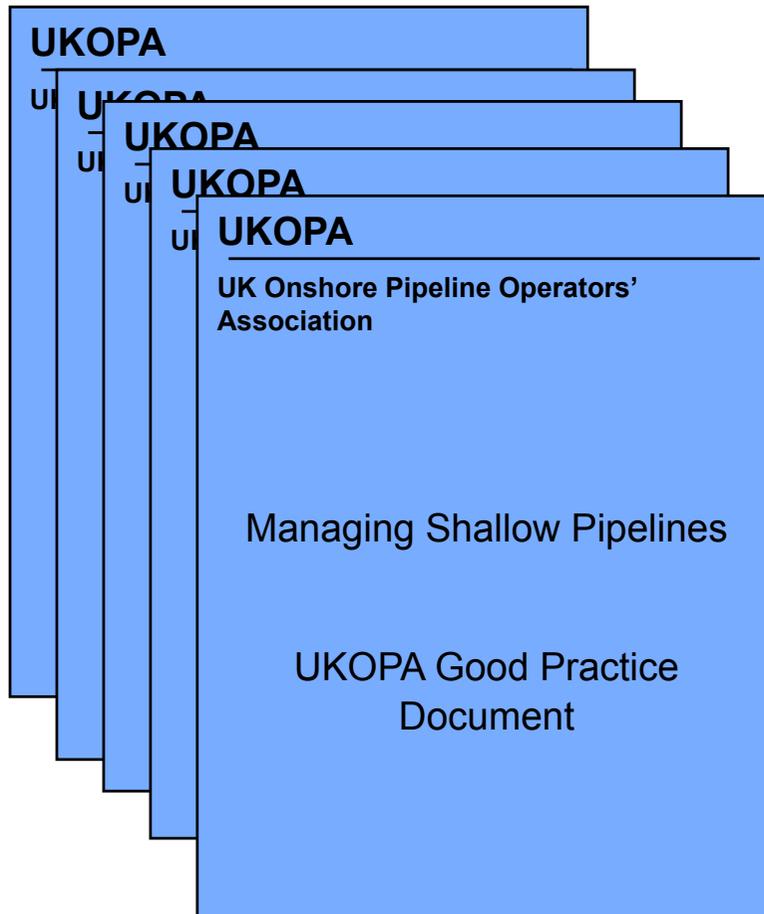
UKOPA

**UK Onshore Pipeline Operators'
Association**

Managing Shallow Pipelines

UKOPA Good Practice
Document

Best Practice Documents



Common format and structure

Potential Topics

- Shallow pipelines
- Managing Dents
- Managing Pipeline Sleeves
- Managing Seismic Risks
- Managing Stress Corrosion Cracking
- Collecting and Reporting Fault Data
- Managing Developments Around Pipelines

- Others ???????

Governance For Document Development and Sign Off

Suggested key steps:

- Developed and agreed by relevant workgroups
- Independent peer review (if believed necessary)
- Circulate to members for comment
- Signed off by Workgroup Chairman
- Signed off by Board