

Good Practice Guide

Managing developments and works in the proximity of
high-pressure pipelines

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The guidance in this document identifies what is considered by UKOPA to represent current UK pipeline industry good practice within the defined scope of the document. All requirements should be considered guidance and should not be considered obligatory against the judgement of the Pipeline Owner/Operator. Where new and better techniques are developed and proved, they should be adopted without waiting for modifications to the guidance in this document.

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CONTENTS

Executive Summary	4
1. Objectives	5
2. Introduction	6
2.1 Background	6
2.2 Scope	6
2.3 Application	6
3. Legislation and Requirements	7
3.1 The Pipelines Safety Regulations 1996	7
3.2 Pipeline Wayleaves and Easements	8
3.3 Beyond Pipeline Wayleaves and Easements	8
3.4 Land Use Planning and Consultation with HSE	9
4. Considerations	10
4.1 Planning Applications	10
4.2 Developments that have already been approved	12
4.3 Encroachments	12
5. Operators engagement with Local Authority Planners	14
6. References	15
Appendices	16
A1 Objection Letter	16
A2 No Objection Letter	18
A3 Witness statement for judicial review	20

EXECUTIVE SUMMARY

This UKOPA good practice guide has been developed by the UKOPA to provide guidance to its members regarding managing developments and works in the proximity of high pressure pipelines.

It is advisable that pipeline operators develop processes for liaising, corresponding, and working with Local Authority Planning Departments and developers who could work near any of their assets.

1. OBJECTIVES

The objective of this good practice guide (GPG) is to provide an overview of steps to consider when developments are proposed, approved or when contractors are working in the proximity of high pressure pipelines.

Whilst reactive measures are available and explored in this guide, UKOPA promotes that member engage early with all stakeholders along the length of their pipelines, and encourages open discussions of any pipeline operations, associated risks and that mitigations are in place to protect the public and the pipeline.

2. INTRODUCTION

2.1 Background

This document has been produced by the pipeline operating companies that are members of the UK Onshore Pipeline Operators Association (UKOPA). Its purpose is to provide members with an overview of things that should be considered when developments and works are proposed or are taking place in the proximity of existing high pressure pipelines. The intention of the document is to ensure that the most appropriate communications, decisions, and interactions are made throughout every stage of the process to mitigate the risk of a major accident occurring.

Decisions made about the development of land in, and around high pressure pipelines and in particular major accident hazard pipelines (MAHP) and installations can affect the consequences of major accidents, thus planning and consultations zones must be considered. Pipeline operators should engage with the planning processes at the earliest possible opportunity to ensure their requirements are considered and where appropriate, followed. Land use planner and developer liaison is key to this.

2.2 Scope

This GPG provides guidance on dealing with planning enquires or discovery of planned works on or near MAHP including offering advice on types of contact or avenues of challenge.

UKOPA has produced other supportive documents on land use planning which can be referenced in addition to this guidance:

- GPG 29 Local Authority Planners information regarding Onshore Pipelines and Associated Installations
- TBN 06 Gasline pipelines – A risk-based methodology for calculating land use planning zones
- TBN 07 The history of land use planning

2.3 Application

Within this document:

Shall: indicates a mandatory requirement.

Should: indicates good practice and is the preferred option. If an alternative method is used then a suitable and sufficient risk assessment must be completed to show that the alternative method delivers the same, or better, level of protection.

3. LEGISLATION AND REQUIREMENTS

3.1 The Pipelines Safety Regulations 1996

In Great Britain, the Pipelines Safety Regulations (PSR) 1996 set out the requirements for planning, designing, constructing, operating, maintaining, decommissioning, and preventing damage to pipelines.

The control of risks arising from third party damage to pipelines is addressed by Regulations 15 and 16 of PSR. PSR Regulation 15 states: *“No person shall cause such damage to a pipeline as may give rise to a danger to persons.”*

Within ‘A guide to the Pipelines Safety Regulations 1996’ from the HSE for Reg 15, Paragraph 70 provides greater guidance:

“It is important that the location of onshore pipelines, and in particular underground pipelines, is considered when carrying out building, excavation or dumping or other such work, as such activities may either cause damage to pipelines or deny access to them for maintenance purposes.”

Actions that operators may adopt and require others to adhere to in the vicinity of their pipelines in order to comply with PSR Regulation 15 may include (but not limited to):

- Checks done during the planning of works to establish whether any pipelines are in the vicinity,
- If a pipeline is present, contacting the pipeline operator and obtaining plans,
- Carrying out site surveys,
- Utilising appropriate safe digging techniques,
- Reassessing the risks if the scope of the work changes,
- Stopping work if there are any unexpected findings on site.

Where pre-applications and/or planning applications are being considered, it is recommended that the planning authority make the developer aware of the above along with the other information in this guide and ask them to contact the pipeline operator at their earliest convenience.

Pipeline operators will provide Local Planning Authorities and/or developers with a tailored response to proposed developments and it is recommended that contact is made at the pre-application stage.

PSR Regulation 16 places complementary duties on pipeline operators and states the following:

“For the purpose of ensuring that no damage is caused to a pipeline, the operator shall take such steps to inform persons of its existence and whereabouts as are reasonable”.

Developers require pipeline operator agreement and/or consent prior to working in the vicinity of a pipeline.

Note, this is required regardless of whether planning permission is required or not.

The granting of planning permission does not remove the requirement for the developer to actively engage in dialogue with the pipeline operator. It is recommended that the Local Authority make the developer aware of this. Further information regarding working safely in the vicinity of high pressure pipelines can be found at [here](#)¹

Pipeline operators will, where required, provide pipeline location information, and hold discussions with the developer regarding pipeline safety in relation to the proposed works.

3.2 Pipeline Wayleaves and Easements

Pipeline wayleaves and easements are legal areas of protection along the length of the pipeline and its associated assets and are usually drawn up at the time the pipeline is constructed. Pipeline operators require developers to enter into a consent or agreement for works within the wayleave or easement.

Subject to individual consents / agreements and to be able to exercise these rights and discharge statutory responsibilities, the following will be prevented within the easement strip where there is a health and safety risk:

- All construction works.
- The erection of any building whether temporary or permanent.
- Fencing, ditching and the planting of trees.
- Anything that materially raises or lowers the depth of the cover of the pipeline.
- The storage of any items.

3.3 Beyond Pipeline Wayleaves and Easements

3.3.1 Zone/Area of Interest

Pipeline operators have obligations under the Pipe-Lines Act 1962 and PSR to keep the pipeline safe and operating it in a manner that the examination and maintenance of it can be carried out safely.

The zone of interest, varies by pipeline operator and is an area outside of the wayleave / easement where effects on pipeline safety, including pipeline access to enable safe maintenance and operation, should be discussed with the pipeline operator, and agreed.

3.3.2 Developments

Pipeline operators are required to consider societal risk, the boundaries for calculating this, is often outside the wayleaves and easements and extend a considerable distance. The impacts of these developments should be calculated using the original design of the pipeline (pre mitigation measures if applied). Both IGEM/TD/1 and PD 8010-1 use a similar approach of 16 x Y (centred on the pipeline), with Y being derived from the criteria in each document. Increased population density and infrastructure on these zones could alter the area classification of the pipeline.

- IGEM/TD/1 could move from R to S, or H, or T

¹ <https://www.ukopa.co.uk/working-safely-near-high-pressure-pipelines/>

- PD8010-1 could move from 1 to 2 or 3

Such changes could require significant alterations to pipeline operations, mitigation measures, diversions, or complex judgment studies.

3.3.3 Works

There are some works which fall outside of the pipeline wayleaves and easements where it is recommended that early engagement with the pipeline operator is suggested to the developer by the planner.

Such as, but not limited to:

- Significant building developments
- Change of use, e.g. barn conversion to dwelling
- Piling or 3D seismic survey work
- Use of explosives
- Demolition
- Mining/excavations
- Installation of Wind Turbines (see [UKOPA Good Practice Guide 013²](#))
- Installation of Solar Photovoltaic Installations (see [UKOPA Good Practice Guide 014³](#))
- Installation of High Voltage Cables and / or apparatus (11KV and greater)

3.4 Land Use Planning and Consultation with HSE

The HSE has identified a consultation distance around each MAHP, within which a planning authority must consult them about any development which is likely to lead to an increased population around the major hazard. The WebApp allows for planners and developers to determine what would be the likely response from the HSE if consultation is pre-planning. For more information see the HSE [website⁴](#).

UKOPA members provide Local Authorities with copies of the Geographic Information Systems (GIS) Data files of their pipeline routes (which are also what have been provided for use in the Web App). Planners are encouraged to engage with pipeline operators if they have queries about developments near pipelines when they are considering any application. Contact details for UKOPA members can be found at [www.ukopa.co.uk/emergency⁵](http://www.ukopa.co.uk/emergency)

² <http://www.ukopa.co.uk/wp-content/uploads/2017/12/UKOPA-GPG013-Requirements-for-the-Siting-and-Installation-of-Wind-Turbines-Installations-in-the-Vicinity-of-Buried-Pipelines-Edition-1.pdf>

³ <https://www.ukopa.co.uk/wp-content/uploads/2017/12/UKOPA-GPG014-Requirements-for-the-Siting-and-Installation-of-Solar-Photovoltaic-Installations-in-the-Vicinity-of-Buried-Pipelines-Edition-1.pdf>

⁴ <http://www.hse.gov.uk/landuseplanning/planning-advice-web-app.htm>

⁵ <http://www.ukopa.co.uk/emergency>

4. CONSIDERATIONS

This section provides guidance on when interaction with planners and developers may be required and the type of approach that could be taken.

4.1 Planning Applications

4.1.1 Before / during the planning process

- 1) Having been made aware of the planning application, an initial objection can be made to enable time for a full assessment of the proposal to be made (see example letter in Appendix 1).
- 2) Assessment
 - a. Compare site plans of application with operators GIS maps to clarify the impact of the development on the pipeline(s).
 - b. If the pipeline is not impacted, then the objection can be withdrawn (see example letter in Appendices).
 - c. If pipeline is impacted, then a process of engagement is required between the pipeline operator and the planning department and/or developers – the earlier this engagement can be started the better.
- 3) Inform the planning department – copying in the developer/developer’s agent of the reasons for the objection and the ‘conditions’ that need to be agreed for the objection to be withdrawn:
 - a. Ensure that the planning reference, development proposal and objection reference (where applicable) are included in all communications.
 - b. When identifying the issues, provide the pipeline reference/s, pipeline diameter and maximum operating pressure (MOP) and what are the main safety aspects for the objection (e.g., building proximity distances (BPD’s), overburden, blasting, cathodic protection (CP) etc).
 - c. Identify the relevant safety requirements relating to the pipeline(s) and request confirmation that the proposal will not contravene these.
 - d. At the start of the communication process, always attach the relevant pipeline operator safety documents, UKOPA and/or industry standards where relevant.
 - e. For MAHPs, indicate that under the Land Use Planning Regulations, the planning authority is notified of the consultation distances and has a statutory duty to consult HSE on certain proposed developments within it and if available provide the PSR pipeline reference and consultation distance.
 - f. State that the pipeline(s) are part of the UK energy transportation system (and where appropriate major accident hazard pipelines) and that any damage or potential damage is likely to lead to serious safety, environmental and/or security of supply issues.

- g. Where appropriate, indicate the BPD and provide advice on what constitutes an occupied building (caravans, places of work, etc).
 - h. Refer to the easement/wayleave, if applicable, and the width of the strip associated with it, include a list of works / activities that should not take place within the easement. Caution must be applied as easements/wayleaves may not match safe working distances from the pipeline, also it should be noted that restricting access by the developer to a pipeline for maintenance and operation requirements may breach the PSR.
 - i. If possible, identify the pipeline(s) depth and inform that no loss of depth of cover or overburden (identify a specific limit if allowable) is allowed. Depth of cover measurements should be carried out under the supervision of the operators' own procedures.
 - j. Place limits on vibration levels allowable near the pipeline(s) – particular attention should be made to distances for piling / blasting, etc. if required.
 - k. Provide information regarding restrictions on vehicles crossing the pipeline(s); where crossing points are required these may require ground loading assessment(s) and impact protection / crossing points and these would need to be constructed to the pipeline operator's requirements at the developers cost.
 - l. State that balancing ponds/lagoons must not be placed over the pipeline.
 - m. State that retaining walls and changes in depth of cover are not permissible without an expert assessment; landscaping should comply with the pipeline operator's procedures and/or tree planting guidance.
 - n. If available provide a GIS pipeline(s) plan alongside or overlaid on the proposed site layout, as this provides clarity on where the pipeline runs in relation to the proposal.
 - o. Stipulate that no work can be carried out until a pipeline operator's representative has attended a site meeting, located, and marked out the exact route of the pipeline and where appropriate confirmed depth of cover.
 - p. Indicate that groundworks near the pipeline(s) must not be carried out without an agreed method statement(s) complying with the pipeline operator's procedures and in some cases with a pipeline operator's representative on site.
 - q. Where applicable, indicate that electrical works may influence the CP for the pipeline(s) and in some case interference testing may be required prior to and after the project at the developers cost.
 - r. Clearly state that the 'objection' will only be withdrawn when satisfactory agreement has been reached covering all the safety and integrity aspects identified.
 - s. It is recommended that a record of all communication with the planners and/or developer is kept including any specific requirements and agreements made.
- 4) Once the developer has confirmed, in writing, how they intend to manage the pipeline operator's requirements, then the objection can be withdrawn, and ongoing communication should take place with the developer and their representatives on the run up to commencement of the project and whilst work is taking place.

4.1.2 After planning approval has been granted

Once approval has been granted, then the pipeline operators process for engagement with the developer / representatives / contractors should be instigated and followed.

4.2 **Developments that have already been approved**

Where a planning application has been approved prior to the operator's knowledge, then engagement with the developers/contractors should start as soon as possible.

Where consent has already been given and the works are yet to start, contact should be made as soon as possible with the developer to understand the implications for the pipeline, its integrity, and any possible alterations to the societal risk due the development.

If works have already begun, then the operator should make all efforts to gain access to the location and inform the developer of the pipeline as well as their duties under the PSR. Where necessary using enforcement to protect the pipeline from damage.

Under PSR the developer must engage with the operator, such engagements should be used to understand if alterations can be made to the development so as to avoid encroachment to the pipeline or mitigate risks from the development, such as positioning of green spaces / car parks, etc.

4.2.1 Legal challenge

If planning consent has been granted that, and if constructed will infringe upon industry standards (e.g., IGEM/TD/1), consideration should be given to challenging the decision by issuing proceedings for a Judicial Review. In such cases, the applicant has six weeks from the grant of planning permission to do so.

4.3 **Encroachments**

Works that have resulted in physical encroachments should not occur due to pipeline surveillance operations undertaken by operators. However, where change of use to buildings or unknown buildings have been developed then the operator should act swiftly to understand the level of risk to the pipeline and the occupants.

Where works have developed above a MAHP it is unlikely that any assessment will justify the encroachment remaining. Any activities relating to such, will likely require legal support to alleviate the situation and is outside the scope of the guidance.

Where the encroachment is within the BPD then a Quantitative Risk Assessment (QRA) may justify no further action if the criteria of risk and As Low As Reasonably Practical (ALARP) principles are met. However, the assessment may result in mitigations being made to meet the ALARP principles.

It is the operator's decision on the use of risk assessments of encroachments, the guidance (IGEM/TD/1) gives the option for an engineering assessment to be undertaken, however operators may feel this is not suitable for the level of acceptable corporate risk. The operator may move forward treating this situation as a building on top of the MAHP and seek to remove the encroachment or may request a diversion (at a substantial cost) or insist on other remediations to the pipeline.

4.3.1 Large temporary or time limited structures/sites

Temporary structures, such as marques, for weddings, or show sites for public gatherings (e.g. agricultural shows, camp sites and festivals) are often dealt with outside of normal planning applications. However, these are still classed as encroachments to the pipeline and must be treated as such as soon as the operator becomes aware of them. Such developments/structures/areas are subject to Land Use Planning (LUP) considerations.

The HSE treats proposals for these the same way as any other planning permission consultations; no allowance is given for the time restriction. Existing temporary / time limited permissions are not taken into account.

5. OPERATORS ENGAGEMENT WITH LOCAL AUTHORITY PLANNERS

All UKOPA members should engage with Local Authority Planners regarding potential planning applications in the vicinity of any of their pipelines.

Pipeline operators will engage with Local Authority Planning Departments at regular intervals. They should provide copies of their relevant procedures, contact information, and answer any questions the planners may have.

The pipeline operator will remind planners that they should:

- Be aware of high pressure pipelines and installations within (and near) the red line area when considering planning applications – these are provided by pipeline operators and in the HSE WebApp.
- Handling development proposals around pipelines', planning authorities should be alert to encroachment of development in consultation zones, including where larger developments are divided between smaller applications to fall below consultation thresholds.
- Consult with pipeline operators regarding planning applications where appropriate, or where assistance would be helpful.
- Advise developers to contact pipeline operators at the earliest opportunity regarding potential developments in the vicinity of high pressure pipelines.

The operator should also provide copies of or links to UKOPA guidance that might be applicable including:

- UKOPA/GPG/029 – Local Authority Planners information regarding on shore pipelines and associated installations
- UKOPA/GPG/029 – supporting presentation
- UKOPA/GPG/014 – Requirements for the siting and installation of solar photovoltaic (PV) installations in the vicinity of buried pipelines
- UKOPA/GPG/013 – Requirements for the siting and installation of wind turbines installations in the vicinity of buried pipelines

6. REFERENCES

1. HSE Planning Advice Web App - <http://www.hse.gov.uk/landuseplanning/planning-advice-web-app.htm>
2. Pipelines Safety Regulations 1996 - <http://www.legislation.gov.uk/uksi/1996/825/contents/made>
3. IGEM/TD/1 – Steel pipelines and associated installations for high pressure gas transmission
4. IGEM/TD/2 – Assessing the Risks from High Pressure Natural Gas Pipelines
5. PD 8010_3:2009 – Guide to the Application of Pipeline Risk Assessment to Proposed Developments in the Vicinity of Major Hazard Pipelines Containing Flammables.

APPENDICES

Example correspondence, where text is within **[Text]** or in **bold**, then case and company specific detail is required.:

A1 Objection Letter

Date:
Our Reference:
Your Reference:

Dear
Ref:

[Company Name] exercises its right to place a Holding Objection to the above proposal which will cross / come within the building proximity distance (BPD) of our high pressure pipeline **[name where appropriate]**

- We would draw your attention to the **[SELECT 1 OF THE FOLLOWING Planning (Hazardous Substances) Regulations 2015, the Town, and Country Planning (Hazardous Substances) (Scotland) Regulations 2015 and the Planning (Hazardous Substances) (Wales) Regulations 2015]**, the Land Use Planning rules and the guidance published by the HSE, which may affect this development.
- To view the Land Use Planning Methodology, please use the link <https://www.hse.gov.uk/landuseplanning/methodology.pdf>
- No buildings should encroach within the easement strip of the pipeline
- No demolition shall be allowed within 150 metres of a pipeline without an assessment of the vibration levels at the pipeline. Expert advice may need to be sought which can be arranged through **[Company Name]**
- **[Company Name]** has a Deed of Easement for each pipeline which prevents change to existing ground levels, storage of materials. It also prevents the erection of permanent / temporary buildings, or structures. If necessary **[Company Name]** will act to legally enforce the terms of the easement.
- You should be aware of the Health and Safety Executives guidance document HS(G) 47 "Avoiding Danger from Underground Services", and **[Company Name]** specification for safe working in the vicinity **[Company specific documents]**. **[Provide a link to the relevant documents or include them with the letter]**
- **[Company Name]** representative will be monitoring the works to comply with requirements
- To download a copy of the HSE Guidance HS(G)47, please use the following link: <https://www.hse.gov.uk/pubns/priced/hsg47.pdf>
- **[Company Name]** will also need to ensure that our pipelines access is maintained during and after construction.
- Our pipelines are normally buried to a depth cover of 1.1 metres; however, actual depth and position must be confirmed on site by trial hole investigation under the supervision of a **[Company Name]** representative. Ground cover above our pipelines should not be reduced or increased.
- If any excavations are planned within 3 metres of a High Pressure Pipeline or, within 10 metres of an AGI (Above Ground Installation), or if any embankment or dredging works are proposed then the actual position and depth of the pipeline must be established on site in the presence of a **[Company Name]** representative. A safe working method must be agreed prior to any work taking place to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.
- Excavation works may take place unsupervised no closer than 3 metres from the pipeline once the actual depth and position has been confirmed on site under the supervision of a **[Company Name]** representative. Similarly, excavation with handheld power tools is not permitted within 1.5 metres from our apparatus and the work is undertaken with **[Company Name]** supervision and guidance.

Pipeline Crossings

- Where existing roads cannot be used, construction traffic should ONLY cross the pipeline at locations agreed with a **[Company Name]** engineer.
- All crossing points will be fenced on both sides with a post and wire fence and with the fence returned along the easement for 6 metres.
- The pipeline shall be protected, at the crossing points, by temporary rafts constructed at ground level. No protective measures including the installation of concrete slab protection shall be installed over or near to the **[Company Name]** pipeline without the prior permission of **[Company Name]**.
- **[Company Name]** will need to agree the material, the dimensions and method of installation of the proposed protective measure.
- The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to **[Company Name]**.
- Please be aware that written permission from **[Company Name]** is required before any works commence within the **[Company Name]** easement strip.
- A **[Company Name]** representative shall monitor any works within proximity to the pipeline to comply with **[Company document name and ref]** specification.
- A Deed of Indemnity is required for any crossing of the easement including cables.

Cables Crossing

- Cables may cross the pipeline at perpendicular angle to the pipeline e.g., 90 degrees.
- A **[Company Name]** representative shall supervise any cable crossing of a pipeline.
- An impact protection slab should be laid between the cable and pipeline if the cable crossing is above the pipeline.
- Where a new service is to cross over the pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service should be maintained. If this cannot be achieved the service must cross below the pipeline with a clearance distance of 0.6 metres.

All work should be carried out in accordance with British Standards policy

- BS EN 13509:2003 - Cathodic protection measurement techniques
- BS EN 12954:2001 - Cathodic protection of buried or immersed metallic structures – General principles and application for pipelines
- BS 7361 Part 1 - Cathodic Protection Code of Practice for land and marine applications.

I have enclosed a location map to show the location of **[Company Name]** high-pressure pipeline(s) within the vicinity of your proposal.

Should you wish to discuss ways in which this object could be withdrawn, please contact **[Name]** on **[Telephone No]** or **[Email address]**

Yours sincerely

A2 No Objection Letter

Date:
Our Reference:
Your Reference:

Dear
Ref:

[Company Name] has No Objection to the above proposal which is in proximity of our high pressure pipeline [Pipeline name]

I have enclosed a location map to show the location of **[Company Name]** high pressure pipeline(s) within the vicinity of your proposal and associated information below.

If your plans change you must let us know so that we can assess them.

Please do contact us on **[Phone number]** prior to commencing any work or if you wish to discuss any of the content of this letter.

Yours sincerely

PLEASE READ CAREFULLY

- No buildings should encroach within the easement strip of the pipeline indicated on the enclosed location map
- No demolition shall be allowed within 150 metres of a pipeline without an assessment of the vibration levels at the pipeline. Expert advice may need to be sought which can be arranged through **[Company Name]**.
- **[Company Name]** has a Deed of Easement for each pipeline which prevents change to existing ground levels, storage of materials. It also prevents the erection of permanent / temporary buildings, or structures. If necessary **[Company Name]** will act to legally enforce the terms of the easement.
- We would draw your attention to the **[SELECT 1 OF THE FOLLOWING Planning (Hazardous Substances) Regulations 2015, the Town, and Country Planning (Hazardous Substances) (Scotland) Regulations 2015 and the Planning (Hazardous Substances) (Wales) Regulations 2015]**, the Land Use Planning rules guidance published by the HSE, which may affect this development.
- To view the Land Use Planning Methodology, please use the link <https://www.hse.gov.uk/landuseplanning/methodology.pdf>
- You should be aware of the Health and Safety Executives guidance document HS(G) 47 "Avoiding Danger from Underground Services", and **[Company Name]** specification for safe working in the vicinity [Company specific documents]
- Provide a link to the relevant documents or include them with the letter
- **[Company Name]** representative will be monitoring the works to comply with requirements
- To download a copy of the HSE Guidance HS(G)47, please use the following link: <https://www.hse.gov.uk/pubns/priced/hsg47.pdf>
- **[Company Name]** will also need to ensure that our pipelines access is maintained during and after construction.
- Our pipelines are normally buried to a depth cover of 1.1 metres; however, actual depth and position must be confirmed on site by trial hole investigation under the supervision of a **[Company Name]** representative. Ground cover above our pipelines should not be reduced or increased.

- If any excavations are planned within 3 metres of a **[Company Name]** High Pressure Pipeline or, within 10 metres of an AGI (Above Ground Installation), or if any embankment or dredging works are proposed then the actual position and depth of the pipeline must be established on site in the presence of a **[Company Name]** representative.
- A safe working method must be agreed with **[Company Name]** prior to any work taking place to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.
- Excavation works may take place unsupervised no closer than 3 metres from the pipeline once the actual depth and position has been confirmed on site under the supervision of a **[Company Name]** representative. Similarly, excavation with hand-held power tools is not permitted within 1.5 metres from our apparatus and the work is undertaken with **[Company Name]** supervision and guidance.

Pipeline Crossings

- Where existing roads cannot be used, construction traffic should ONLY cross the pipeline at locations agreed with a **[Company Name]** engineer.
- All crossing points will be fenced on both sides with a post and wire fence and with the fence returned along the easement for 6 metres.
- The pipeline shall be protected, at the crossing points, by temporary rafts constructed at ground level. No protective measures including the installation of concrete slab protection shall be installed over or near to the **[Company Name]** pipeline(s) without the prior permission of **[Company Name]**.
- **[Company Name]** must agree the material, the dimensions and method of installation of the proposed protective measure.
- The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to **[Company Name]**.
- Please be aware that written permission from **[Company Name]** is required before any works commence within the **[Company Name]** easement strip.
- A **[Company Name]** representative shall monitor any works within proximity to the pipeline to comply with **[Company document ref]** specification
- A Deed of Indemnity is required for any crossing of the easement including cables

Cables Crossing

- Cables may cross the pipeline at perpendicular angle to the pipeline e.g., 90 degrees.
- A **[Company Name]** representative shall supervise any cable crossing of a pipeline.
- An impact protection slab should be laid between the cable and pipeline if the cable crossing is above the pipeline.
- Where a new service is to cross over the pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service should be maintained. If this cannot be achieved the service must cross below the pipeline with a clearance distance of 0.6 metres.

All work should be carried out in accordance with British Standards policy

- BS EN 13509:2003 - Cathodic protection measurement techniques
- BS EN 12954:2001 - Cathodic protection of buried or immersed metallic structures – General principles and application for pipelines
- BS 7361 Part 1 - Cathodic Protection Code of Practice for land and marine applications

A3 Witness statement for judicial review

1. My name is **[Witness]**. I am an engineer employed by **[Company Name]** and am based at **[Location]**.
2. I make this First Witness Statement in support of **[Company Name]** application for permission to seek judicial review of the decision by **[Local Authority]** to grant planning permission to itself for development at **[Location]** described as.
 - a. **[Description of development]**
3. The proposed development is a substantial urban development project on a prominent site extending to **[Location]**.
4. **[Company Name]** is the company responsible for distributing **[Product]**.
5. As part of its network, **[Company Name]** is responsible for the **[Pipeline Reference]** High Pressure Gas Pipeline (“the high-pressure pipeline”). The high-pressure pipeline is a major underground asset and supplies **[Product]** to many users in **[Location]** and surrounding areas.
6. I am now shown, and exhibit herewith marked **Exhibit [Reference]** the following four plans and drawings:
 - a. Extract from the pipeline (as laid) drawing.
 - b. Plan with the high-pressure pipeline indicated in dashed **[yellow]**.
 - c. Satellite image showing building proximity measurements on Google Earth.
 - d. Map showing proposed development and high-pressure pipeline route.
7. As can be seen from the map showing the proposed development and the high-pressure pipeline route, there are several elements within the proposed development. Proximity to occupied buildings is the main cause of concern for **[Company Name]** which fall within the Building Proximity Distance which I discuss further below.
8. The governing technical document for this category of pipeline is called IGEM/TD/1 **[Edition 6]** - Steel pipelines and associated installations for high pressure gas transmission. This is the current version at the time of review. The IGEM is the Institution of Gas Engineers and Managers which is the professional engineering institution for the gas industry. This Standard covers the design, construction, inspection, testing, operation and maintenance of steel pipelines and certain associated installations (see Figure 1), for the transmission of dry Natural Gas (predominantly methane), with or without odourisation, at MOP exceeding 7 bar and not exceeding 100 bar.
9. The high-pressure pipeline is also classified as a Major Accident Hazard Pipeline for the purposes of Part III of the Pipelines Safety Regulations 1996.
10. The IGEM/TD/1 standard requires a Building Proximity Distance or, in simple terms, a separation distance of **[Distance]** m from the high-pressure pipeline. In this case, it is clear that a number of elements are too close.
11. Section **[IGEM/TD/1 Edition 6]** states that the minimum proximity of pipelines to normally occupied buildings shall be related to maximum operating pressure. As the pipeline design factor does not exceed **0.72 then [Figure 5] or 0.3 then [Figure 6]** (of IGEM/TD/1) shall be used to determine the suitable area Building Proximity Distance.
12. Minimum Building Proximity Distance = $(C1 \times MOP) + C2$
 = $(0.00 \times 00) + 00$
 = **[Distance] m**
13. The consequences of failure of a high-pressure pipeline such as this are primarily due to the thermal radiation produced if the release of gas ignites, thereby presenting a clear and obvious threat to people and property. If a pipeline fails as a leak (least severe) then typically there would be very little effect on system pressure. Indeed, the leak would often be identified by the public, due to the distinctive smell.

14. If a buried pipeline fails as a rupture, a crater will be formed as soil is thrown clear of the rupture location by the force of the escaping gas. The released gas will initially form a rising mushroom cloud which soon decays to leave a transient jet fed by the outflow of gas from the two pipeline ends. Initially, the pressure in the pipeline will rapidly fall until either a steady state is reached, as outflow from the pipeline matches the inflow, or the pressure will then gradually decline to zero if the pipeline is shut in. The length of time taken for a steady state to be reached depends on the time taken for valves to be closed and the length of pipeline but is typically of the order of 15 – 20 minutes.
15. The risks from a natural gas pipeline release depend critically on whether ignition occurs and if it is immediate or delayed. Published evidence from actual events and research work shows that immediate ignition events involving flammable gases are likely to cause a fireball followed by a jet fire, delayed ignition events result in a jet fire.
16. Self-evidently, a pipeline rupture and subsequent ignition may well result in catastrophic loss of life. Other factors to consider include damage to property (buildings also have the potential to ignite when subjected to certain levels of heat flux), major loss of supply (which can also have dire consequences for vulnerable people), evacuation of properties and road closures.
17. Notwithstanding the proximity of the high-pressure pipeline to the proposed development, **[Company Name]** was not consulted and did not become aware that planning permission had been granted until **[Date]**.
18. The Health and Safety Executive is the statutory consultee, and I am aware that in its formal consultation response it expressly identified the location of the high-pressure pipeline and it recommended formal consultation with **[Company Name]**. This advice from the statutory consultee was not followed and there is no indication, so far as I know, of why **[Local Authority]** failed to do what it was advised to do.
19. If the proposed development were to be built out as approved then the high-pressure pipeline could not remain in place without a risk assessment, the outcome of which would determine the actions required to ensure safety standards are complied with.
20. There are broadly two options: divert or protect. Any engineering solution would be extremely complex and prohibitively expensive given the surrounding infrastructure and criticality of the surrounding highway network.
21. In my professional view, neither of these options is feasible given the location of the high-pressure pipeline.
22. Had **[Company Name]** been formally consulted by **[Local Authority]** and given a meaningful opportunity to engage with the planning application process, I am in no doubt that **[Company Name]** would have objected to the grant of planning permission for the proposed development as it is currently proposed. As set out above, the principal basis for such objection would be that the development falls within the Building Proximity Distance, which immediately triggers major safety concerns and could potentially leave **[Company Name]** in breach of its obligations under UK safety legislation.
23. Following an initial review of the proposed development in line with industry standards, **[Company Name]** would have sought to work collaboratively with the developer to examine all possible alternatives to both the design and layout of the scheme and possible measures to ensure the safety of the pipeline. A Grampian style condition or legal agreement could have secured the latter but no mention of the high-pressure pipeline of any sort was made in the decision notice. If no solution was found, then **[Company Name]** would have maintained a firm objection to the grant of planning permission.
24. In my view, **[Local Authority]** has completely failed to take into account the planning impacts of the location of the high-pressure pipeline and consequential risks to public health and safety. It has also failed to follow clearly expressed guidance from the Health and Safety Executive as statutory consultee regarding the need to consult with **[Company Name]** regarding the known presence of the high-pressure pipeline.
25. In the circumstances, planning permission has been granted for the proposed development without any consideration being given to an important material consideration. As a result of the significant

risk associated with development of this major scheme in such proximity to the high-pressure pipeline, **[Company Name]** sees no option but to submit a claim for judicial review to ensure that the planning permission is quashed.

Statement of Truth

I believe that the facts stated in this witness statement are true. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

Signed _____