Defence Infrastructure Organisation

Gas Safety Management Plan (Section C)

Yoxter CTC

23/04/2025

Produced to align with the requirements of the Gas Safety (Management) Regulations 1996

(Gas Safety Management Plan (Section A) covers the requirements of the Gas Safety (Installation and Use) Regulations 1998

ESTABLISHMENT KEY PERSONALITIES (GAS) CONTACTS

Role	Name	Tel No.	Email
Head of Establishment (CO/ HOE)	Neville Holmes MBE	01823 217930 07850 655017	wx-ce@rfca.mod.uk
Establishment SHEF	James Kenworthy	01823 792670 07850 024699	wx-som-cqm@rfca.org.uk
Establishment 4 C's Co-ordinator	Scott Bunker	07775 870683	wx-som-csa@rfca.org.uk
Senior DIO Estates Representative or equivalent	Mark Cubitt	07955 280440	wx-est-hd@rfca.mod.uk
DIO Estates Representative	Rory Simpson	07957 436139	wx-est-mgr1@rfca.mod.uk
Site Manager	Paul Wakeford	07356 101565	paul.wakeford@vivodefenc.com
Gas Safety Manager (GSM)	Justin Westcott	07793 222820	justin.westcott@vivodefence.com
Gas Responsible Person (GRP)	Ian Bradley	07399 222771	ian.bradley1@vivodefence.com

The Content of this Gas Safety Management Plan (GSMP) have been Approved by the Gas Safety Manager:

Signature: JP Westcott	**Date: 23/04/2025**

Authorisation for Implementation
The content and format of this GSMP has been agreed and authorised for implementation by Defence Infrastructure Organisation Technical Services Principal Gas Engineer (DIO TS PGE) and a unique reference number has been generated to support this.

Approved – J Obbard PGE – 18th Feb 2022

The Content of this GSMP have been agreed by the Senior DIO Estate Representative or Equivalent and future works following the findings will be supported:

Signature: *M Cubitt*	**Date: 29/04/2025**

The content of this GSMP have been agreed by the Head of Establishment and future works following the findings will be supported

Signature: *N Holmes*	**Date: 12/05/2025**

Reviews and Amendments

GSMPs are 'living documents' that should be subject to continual review and updating as required. Although the level of attention required will vary considerably depending on the size and complexity of each site, GSMPs should be reviewed at least once per quarter by the GRP. Although it is likely that changes are not required at each review, the date of review and any changes made should be indicated on the tables below. The review of the GSMP will include a site visit to ensure that the site and the content of the GSMP remain valid. The reviews and amendments made will be deleted during the DIO TS three yearly review when the GSMP is re-authorised by the PGE.

Date	Page No.	Amendment
28/01/2022	All	Initial Development
06/05/2022	3	Updated Gas Emergency Helpdesk Details
05/08/2022	ii,1&2	Updated Key Personalities
14/11/2022	Annex C	Reviewed & Updated Risk Assessments
21/02/2023	5,6,8,10	Removed References to Buildings 4 & 6 After Trial Holes Confirmed No Gas to These Buildings
21/02/2023	13 & Annexe B	Added Temporary Site Layout Drawing & Details
21/02/2023	16	Updated Inspection Dates
21/02/2023	Annexe C	Reviewed & Updated Risk Assessments
24/05/2023	N/A	No Changes
18/08/2023	*15, 24-26*	Added Network Analysis & Validation Details
30/11/2023	ii, 1 & 2	Updated Key Personalities
30/11/2023	13 & Annexe B	Added Gas Line & Site Layout Drawings, Details & Icons
29/02/2024	ii & 1,	Updated Key Personalities.
29/02/2024	17-27	Added Comments to Sections 6,7,8,10,13,14,15,16,18,19,20,21.
29/02/2024	Annexe C	Reviewed & Updated Risk Assessments
15/05/2024	N/A	No Amendments Required
17/08/2024	ii, 1	Updated HoEstates & Estate Manager Details
18/10/2024		GSM re-authorisation (previously authorised 28/01/2022)
15/11/2024	N/A	No Amendments Required
18/02/2025	Various	Update key personalities after VIVO take over contract.
23/04/2025	Sec 2.1	GSM note extended to review the need for this GSMP section

Date	Reviewed by	Authorised by	Comments
28/01/2022	M Fenwick	N King	Initial Review
06/05/2022	M Fenwick	M Fenwick	Quarterly Review
05/08/2022	M Fenwick	M Fenwick	Quarterly Review
14/11/2022	M Fenwick	M Fenwick	Quarterly Review
21/02/2023	M Fenwick	N King	Annual Review
24/05/2023	M Fenwick	M Fenwick	Quarterly Review
18/08/2023	M Fenwick	M Fenwick	Quarterly Review
30/11/2023	M Fenwick	M Fenwick	Quarterly Review
29/02/2024	M Fenwick	N King	Annual Review
15/05/2024	M Fenwick	M Fenwick	Quarterly Review
17/08/2024	M Fenwick	M Fenwick	Quarterly Review
18/10/2024	Neville King	Neville King	GSM re-authorisation
15/11/2024	M Fenwick	M Fenwick	Quarterly Review
03/02/2025	M Fenwick	M Fenwick	DNV De-Mobilisation Review / Handover
18/02/2025	Ian Bradley	J Westcott	Initial Review
23/04/2025	J Westcott	J Westcott	Initial Review/Approval – Noting status of network to be reviewed and PPM regime

Forward

MOD, as a natural gas conveyor within Great Britain, has submitted an Exemplar Gas Safety Case (MOD GSC) to demonstrate compliance with the Gas Safety (Management) Regulations 1996 (GSMR). Maintenance Management Organisations (MMO's) are engaged who have the overall contractual responsibility to operate and maintain the gas network assets under their Contract, including the management of the safe flow of gas within the system and the provision of an emergency service. The MOD delegate specific duties to the MMO but accountability for gas safety on each site rests with the Head of Establishment.

Whilst Liquified Petroleum Gas (LPG) networks fall outside of the scope of (GSMR) the MOD deems that the principles detailed within the MOD GSC will equally apply to LPG systems. Requirements for the adequate management of LPG distribution systems is described in,

a. Health and Safety at Work Act 1974
b. Management of Health and Safety at Work Regulations 1999
c. Pipelines Safety Regulations 1996
d. Gas Safe (Installation & Use) Regulation 1998
d. Liquid Gas UK Codes of Practice

The MOD GSC considers all parts of the MOD estates gas supply system that forms part of the gas supply network. This includes all parts of the MOD estates network from the LPG vessel to the emergency control valve (ECV) of individual consumers. The MOD GSC considers primarily those matters that relate to the management of the safe flow of gas within the system and the provision of an emergency service.

The conclusions of the assessments within the MOD GSC are:

- There is an adequate safety management system in place to manage the flow of gas safely in its gas supply system.
- Adequate arrangements are in place to comply with the requirements of a. to d. above and allow co-operation with other bodies that have duties under the regulations.
- Adequate arrangements are in place for ensuring that gas conveyed within the system meets the standards for composition and pressure.
- Adequate arrangements are in place for dealing with reports of gas escapes and investigation of incidents.
- Adequate arrangements have been made to ensure that the risk of a supply failure is minimised.
- Adequate arrangements have been made to ensure that supply emergencies are managed safely.

Following initial approval by the DIO PGE, the GSM is required to reapprove this GSMP annually. GSMP must be submitted to DIO TS every three years for PGE authorisation.

GSMP Section A documents detail MOD measures to ensure compliance with the Gas Safety (Installation and Use) Regulations 1998 (GS(IU)R) for installation pipework (downstream of Emergency Control Valves).

GSMP Section B documents contain site specific details and arrangements as a direct annex to the MOD GSC in line with the Gas Safety (Management) Regulations 1996 (GSMR).

The MOD apply the same requirements to the management of LPG distribution systems on its overseas estate in accordance with the currently published Secretary of State's Health and Safety policy statement.

Although the term ‘gas networks’ is normally taken to refer to natural gas distribution systems, as defined in GSMR, ‘network’ is used throughout this document to refer to LPG distribution systems pipework between the first stage regulator and the ECV.

Contents

1 THE DUTY HOLDER AND ESTABLISHMENT LEVEL KEY PERSONALITIES

1.1. Gas Safety Case Duty Holder.	
The duty holder for the MOD Gas Safety Case is the Permanent Under Secretary for Defence (PUS). However, day to day responsibility for the preparation and maintenance of the document is delegated to the DIO TS Head of Engineering and Construction, who also has the responsibility for managing the system in accordance with the Safety Case. PUS delegates maintenance responsibility to the Top-Level Budget Holders (TLB's), to manage safety of the gas network. The TLB's utilise MOD Contracts i.e. MMOs who have responsibility for maintaining the gas network on behalf of the MOD.	
Name: Address:	Permanent Under Secretary Main Building Horse Guards Parade Whitehall London SW1A 2HB

1.2. DIO Technical Services Principal Gas Engineer (PGE).	
The PGE assumes the role of Senior Authorising Authority which is a term used within the MOD to recognise the authority of the person responsible for overseeing the appointment of, and auditing Authorising Engineers (AEs). For Gas the AEs are replaced by Gas Safety Managers (GSMs).	
Name: Address: ☎: ✉:	Jeremy Obbard DIO HQ Whittington Barracks Lichfield WS14 9TJ 07748 903260 Jeremy.obbard100@mod.gov.uk

1.3. Establishment Personalities.		
Name of Establishment:	Yoxter CTC	
Establishment Address:	Yoxter CTC Priddy Somerset BA5 3BS	
Head of Establishment (HoE) (This is the most senior MOD person identified, by the chain of command, as responsible for the establishment. The HoE holds accountability for ensuring site compliance with the requirements of GSMR and the MOD GSC, including this GSMP.)	Name: Position: Organisation: Address: ☎: ✉:	Neville Holmes MBE Chief Executive Wessex Reserve Forces' and Cadets' Association Mount House Mount Street Taunton Somerset TA1 3QE 01823 217930 or 07850 655017 wx-ce@rfca.mod.uk

Establishment 4C's	Name: Position: Organisation: Address: ☎: ✉:	Scott Bunker CSA Wessex Reserve Forces' & Cadets' Association Jellalabad House, 14 Mount Street, Taunton, Somerset, TA1 3QE 07775870683 wx-som-csa@rfca.org.uk
Establishment SHEF	Name: Position: Organisation: Address: ☎: ✉:	James Kenworthy Quarter Master Wessex Reserve Forces' & Cadets' Association Jellalabad House, 14 Mount Street, Taunton, Somerset, TA1 3QE 01823 792670 or 07850 024699 wx-som-cqm@rfca.org.uk
Senior DIO representative or equivalent (This may be the SEFM, but will vary depending on the contract this establishment falls under)	Name: Position: Organisation: Address: ☎: ✉:	Mark Cubitt Head of Estates Wessex Reserve Forces' & Cadets' Association Mount House Mount Street Taunton Somerset TA1 3QE 07955 280440 wx-est-hd@rfca.mod.uk
Site Guardroom (24 Hours)	☎:	No Guardroom on site – Working Hours Contact: Steve Shelley 07506 196700 There is no out of hours contact. When in use the site will call the MMO helpdesk.
Site emergency services (Are they 24 Hours?)	Fire ☎: Police ☎: Medical ☎:	999 999 999

1.4. Maintenance Management Organisation (MMO).		
The MMO for this establishment is:		**VIVO Defence Services**
MMO Customer Services	Organisation: Address: ☎: ✉:	VIVO Helpdesk 25 Goodlass Road Hunts Cross Liverpool L24 9HJ 0800 030 9320 helpdesk@vivodefence.com
Gas Emergency Helpdesk (Typically, MMO Helpdesk) (24 Hours)	Organisation: Address: ☎:	VIVO Helpdesk 25 Goodlass Road Hunts Cross Liverpool L24 9HJ 0800 030 9320 helpdesk@vivodefence.com
MMO Site Manager	Name: Organisation: Address: ☎: ✉:	Scott Bunker Wessex Reserve Forces' & Cadets' Association Jellalabad House, 14 Mount Street, Taunton, Somerset, TA1 3QE 07775 870683 wx-som-csa@rfca.org.uk
Gas Safety Manager (GSM)	Name: Organisation: Address: ☎: ✉:	Justin Westcott VIVO Building 002, CTCRM Lympstone Nr Exmouth Devon, EX8 5AR 07793 222820 justin.westcott@vivodefence.com
Gas Responsible Person (GRP)	Name: Organisation: Address: ☎: ✉:	Ian Bradley VIVO Trenchard Lines, Upavon, Pewsey, Wiltshire. SN9 6BE 07793 222771 Ian.bradley1@vivodefence.com

1.5. Additional Gas Contacts.		
LPG Supplier	Organisation: Address: ☎: ☎:	Calor Gas Ltd Athena House Athena Drive Tachbrook Pk Warwick CV34 6RL 03457 444 999 (emergencies) 0800 626 626 (general enquiries)
DIO SD EUS (Service, Delivery, Energy, Utility and Sustainability)	✉:	DIORDUtil-DelFuels@mod.gov.uk
National Emergency Services (24 Hours)	Fire ☎: Police ☎: Medical ☎:	999 999 999
Calor Gas Emergency Centre (24 Hours)	☎:	03457 444 999

2 OPERATION UNDERTAKEN

2.1 Site Overview.
A brief description of the establishment and its current use. This should include how many separate sites are present, number of buildings being supplied by LPG, what the LPG is used for and number of personnel who will be affected by an LPG outage. Any critical loads should be initially highlighted here (quick reaction forces, large medical facilities, temp controlled ammunition stores etc)
Yoxter CTC is a single site establishment with 12 buildings on site, one of which is supplied by LPG. This building is supplied with LPG from the Low Pressure (LP) MoD Network. There is no Natural Gas on site and there are three 4600 litre bulk LPG vessels located within a compound on site. The Cadet Training Centre can be occupied by different Cadet detachments for training periods and is always available as a hired alternative venue for private functions, Building 3 which is supplied from the MoD network is used for heating, a drying room and hot water. There is also a live gas supply to the kitchen in which all the appliances are now electric. The MoD PE network was re-laid around 2016. Day to Day the site is generally unmanned but when used can accommodate up to 138 people. **GSM note 18/10/2024:** **In accordance with DIO Technical Standard TS GAS-01 '*Inspection, Maintenance and Testing of MOD Gas Network Plant, Equipment and LPG Compounds*', Yoxter CTC may be considered exempt from the production of a GSMP C.** **However, this was not known when the site infrastructure was initially classified due to uncertainty around a redundant buried distribution network.** **For this reason, a GSMP C was produced, to facilitate further investigation and give clearer line of sight to the standards that should be applied to the maintenance of the buried network.** **Trial hole survey was unsuccessful in locating the redundant network. However, the live gas supply to the main building plant room was identified.** **THIS WILL BE REVIEWED IN Q2 2025 with a view to removal of this Part C provided adequate PPM regime is being delivered.**
2.2 Document Centre.
Location of the establishment Gas Document Centre containing all information relating to the LPG systems at this establishment (Ref: MOD GSC 10.2) and contact details if different to the GRP.
The Gas document centre is held electronically by VIVO on the SharePoint system

2.3 Purpose of Pipeline(s).

A brief description of demarcation agreements between the LPG supplier and the MOD. Number of MOD networks including operating pressures. End users of gas being supplied such as accommodation, workshops, catering facilities etc.

Yoxter CTC has one LPG bulk storage compound on site which houses 3 in number 4600 litre LPG bulk tanks. The LPG bulk tanks are owned and maintained by Calor Gas.
The Bulk tanks supply the MoD Network with Low Pressure (LP) LPG gas at 76.7 mbar.
The LPG gas leaves the bulk tanks and runs through the 1st stage regulator reducing pressure to 2 bar. The gas continues through the 2nd stage regulator further reducing the pressure to feed the MoD network at 76.7 mbar.
The demarcation point between the Calor gas responsibility and the MoD network is the outlet connection of the 1st stage regulator.
The MoD network serves one building - Building 3.

2.4 Consumers.

Consumers can be broadly categorised as domestic or industrial / commercial. Gas supplies to domestic consumers are normally prioritised above industrial / commercial consumers.

Domestic consumers supplied from the MOD network:	0
Industrial / commercial consumers supplied from the MOD network:	1

2.5 Description of MOD LPG Networks.

A description of the MOD LPG network(s) including location of the compound(s), first stage regulator, second stage regulator. Pipeline length, material, diameter, pressure, age and condition.

Yoxter CTC has one LPG bulk storage compound on site which houses 3 in number 4600 litre LPG bulk tanks. The LPG bulk tanks are owned and maintained by Calor Gas.
The LPG bulk tank compound is a rectangular area surrounded by a 1.8m steel fence with two exits on opposite sides. There is only one 9kg fire extinguisher located outside of the compound.
There is an appropriate signed area for the tanker deliveries and there are emergency signs located on two sides of the compound.
The Bulk tanks supply the MoD Network with Low Pressure (LP) LPG gas at 76.7 mbar.
The LPG gas leaves the bulk tanks and runs through the 1st stage regulator reducing pressure to 2 bar. The gas continues through the 2nd stage regulator further reducing the pressure to feed the MoD network at 76.7 mbar.
The MoD network serves a single building. (Building 3)
The LPG compound was built and the MoD PE network re-laid around 2016. The MoD network is laid in 63mm PE. Building 3 has an SIV.

MoD Network Pipework Length – 86 metres

2.6 LPG Compound Details.

The following table contains the details of the bulk LPG vessel compounds located at this establishment. This includes the compounds that may not go on to supply and MOD network.

Compound Name / ID	Is a suitable 1.8m security fence in place	Is there 2 gates for access / egress	Has a suitable FRA been completed	If required is suitable FFE in place	Is there a suitably designated & marked vehicle delivery location	Is emergency lighting required for compound / delivery area, and if so is correct lighting in place & maintained	Has a suitable DSEAR RA, including HAC drawing, been produced	If required is earthing present and been subject to periodic testing and inspection
Compound 001	Yes	Yes	Yes	Yes	Yes	No	No	Yes

2.7 LPG Vessel Details.

The following table contains the details of the bulk LPG vessel(s) located at this establishment.

Vessel Name / ID	Location	Capacity (Kgs)	Date of Last Major Inspection
Bulk Tank 001	Compound 001	4600	2019
Bulk Tank 002	Compound 001	4600	2019
Bulk Tank 003	Compound 001	4600	2019

Total LPG capacity at this establishment (Kgs):	***6000kgs***

2.8 First Stage Pressure Regulating Installations (PRIs).

The following table summarises the basic arrangement of the first stage PRIs. These are typically installed within the vessel compound and are the responsibility of the LPG supplier. The demarcation for MOD responsibility is typically the outlet of this PRI.

Number of first stage PRIs:	1

PRI Name / ID	Gas Supplier	Nominal Reg Size	Inlet pipeline (responsibility of the LPG Supplier)				Outlet pipeline (responsibility of the MOD)			
			P tier – HP, IP, MP, LP	Pressure (mbar)	Pipework Material	Diameter (mm)	P tier – HP, IP, MP, LP	Pressure (mbar)	Pipework Material	Diameter (mm)
Novacomet APS2000	Calor Gas	¾”	HP	Not Known	Steel	20	LP	75	Steel	¾”

2.9 Secondary Pressure Regulating Installations (PRIs).

The following table summarises the basic arrangement of the secondary PRIs.

Number of secondary PRI installations:	1

		Inlet pipeline (responsibility of the LPG Supplier)	Outlet pipeline (responsibility of the MOD)

PRI Name / ID	Nominal Reg Size	P tier – HP, IP, MP, LP	Pressure (mbar)	Pipework Material	Diameter (mm)	P tier – HP, IP, MP, LP	Pressure (mbar)	Pipework Material	Diameter (mm)
Novacomet BP 2403	¾"	LP	75	Steel	20	LP	76.7	PE	25

2.10 Third Stage Pressure Regulating Installations (PRIs).

The following table summarises the basic arrangement of the third stage PRIs.

Number of third stage PRI installations:	1

PRI Name / ID	Nominal Reg Size	Inlet pipeline (responsibility of the LPG Supplier)				Outlet pipeline (responsibility of the MOD)			
		P tier – HP, IP, MP, LP	Pressure (mbar)	Pipework Material	Diameter (mm)	P tier – HP, IP, MP, LP	Pressure (mbar)	Pipework Material	Diameter (mm)
Novacomet BP 2403 – Building 3	¾"	LP	76.7	Steel	25	LP	45.6	Steel	25

2.11 Emergency Control Valves (ECVs).

The ECV(s) are included in the scope of the network and are therefore the responsibility of the MOD. The following table summarises the basic arrangements of the ECV(s).

The MOD LPG network(s) terminates at:	**1 ECV**								
Building Name / Number	Incoming Gas Pressure	Appliance / Process / Domestic	ECV No. / Code	Indoors / Outdoors	Key required to access the ECV – Where from?	ECV Location	Handle Fitted	ECV correctly labelled	Nominal Valve Size
Building 3	76.7	Heating/ Hot Water	WX102/ECV/001	Outdoors	No	At Plant Room Entry	Yes	Not currently funded by the RFCA	25mm

2.12 MOD LPG Network Pipeline Details.

The table below shows the total pipeline lengths for the different pipe diameters and operating pressures.

Network Name / ID	Pressure (mbar)	Pipe Material	Pipe Diameter (mm)	Number of Sections	Total Length (m)
Network 001	76.7	PE	63	1	75
Network 001	76.7	PE	32	1	11
				Total length of all MOD networks:	86

2.13 LPG Network Interconnection.

The outlet pipework system from each of the primary meter installations can be isolated networks or may be interconnected with other MOD systems. For isolated systems turning off the gas supply at an LPG vessel installation will shut off supply to all buildings / processes on that pipe system. Interconnected systems will require two or more LPG vessel installations to be turned off. Figures 2.1 and 2.2 below show the differences.

The MOD pipework system on this establishment are:		Isolated
Supply from Primary Meter (Name / ID)	Pressure (mbar)	Can the interconnection be isolated?
None		

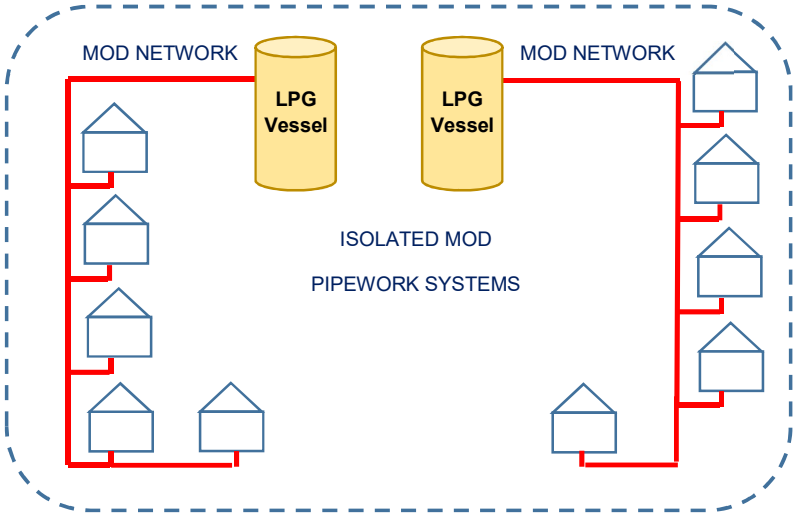


Figure 2.1 – Isolated MOD pipework systems

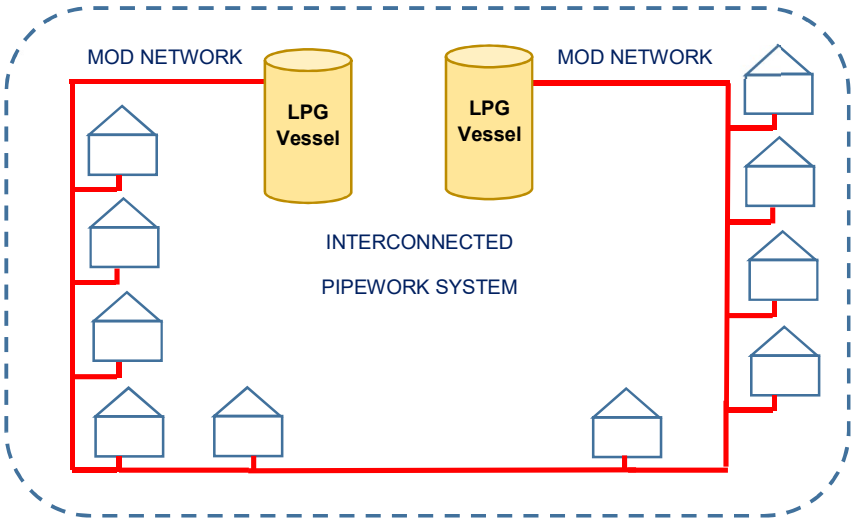


Figure 2.2 – Interconnected MOD pipework systems

2.14 Sensitive and Critical Loads.

The MOD does not have any 'interruptible consumers'. Historically large industrial / commercial consumers, who had an alternative fuel supply, could opt to pay a lower rate for an interruptible contract which enabled the supplier to isolate their supply at short notice in order to preserve the gas supply to the public and 'firm contract' industrial consumers in the event of a supply shortage.

However, all industrial and commercial supplies are, effectively, 'interruptible' isolation of these will usually be requested by the supplier in times of supply emergencies in order to preserve domestic supplies for as long as possible.

Where Industrial / commercial consumers have particularly sensitive or critical consumers these can be taken into consideration by the gas supplier when requesting isolation. Sensitive consumers could include supplies such as a school, medical facility, temperature-controlled ammunition stores etc.

The number of sensitive loads at this establishment is:	0

Facility / Consumers	Supplied from primary meter name / ID	Approx. max throughput (m^3 hr)

2.14 Standby Alternative fuel Supplies.

Where operational critical supplies are present on site a standby alternative fuel supply should be considered which would enable continued operation in the event of either a local or national supply emergency.

Facility / Consumers	Supplied from primary meter name / ID	Approx. max throughput (m^3 hr)	Alternative fuel supply
None			

3 PLANT AND PREMISES

3.1 Drawings.

The gas layout drawings provide an overview of the LPG compounds and network(s).

The layout drawings should detail:

a) The site boundaries.
b) Vessel installations.
c) First stage PRI location.
d) Secondary PRI locations.
e) Third stage PRI locations
f) Valve locations.
g) Pipeline routes, diameters, material and depth.
h) Operating pressure tier.
i) Demarcations.
j) Responsibilities (Gas supplier / MOD)

The layout drawings are located at Annex B either embed as a PDF or hard copies. The drawings will be subject to the GRP quarterly review and following any physical changes or system updates. Hard copies of the drawings are located in the gas document centre.

Gas Layout Drawing Number	Revision Date	Scale	Detail
WX102-B-A1	05/04/2023	1:250	Site Gas Layout Drawing
			WX102-B-A1.pdf

3.2 Additional Drawings.

In addition to layout drawings the below additional drawings are available from the gas documents centre and GRP.

Additional Drawing Number	Revision Date	Scale	Detail
WX102-A-A3	05/01/2022	NTS	Not to Scale Gas Line Drawing
			WX102-A-A3.pdf

3.3 Responsibility Interfaces and Access Arrangements.

For gas incidents or maintenance that affect the gas supplier, the gas supplier representative will become the emergency controller. The gas supplier establishment direct contact will be the GRP who will make all relevant arrangements for access to the LPG vessel compound and plant room access.

As the MOD establishments are high security, all gas supplier personnel who attend for gas supply emergencies or to carry out maintenance work will be granted access to site on an individual basis.

All gas supplier personnel attending this establishment will be subject to site specific security procedures and will be required to be escorted whilst on site, access and escorting may vary depending on the nature of the visit, time of incident etc.

Below are the site-specific arrangements in place to allow the gas supplier access during an emergency, as agreed by the HOE:

No Guardroom on site –
Working Hours Contact: Steve Shelley
07506 196700

There is no out of hours contact. When in use call the MMO helpdesk.

4. OPERATION AND MAINTENANCE DOCUMENTATION

4.1 MOD Network Maintenance.

Network maintenance is mandated in GSMR and all network maintenance requirements and tasks on MOD establishments are detailed in the MOD Gas Network Technical Standard TS/GAS-01. TS/GAS-01 has been written in line with legislation, industry standards and guidelines.

The testing, inspecting and maintenance frequencies vary depending on the task, the table below shows the intervals at which it should be conducted and the date the tasks have been complete.

TS/GAS-01 Job No.	Maximum Interval Period	Brief Description of Task	Task was completed on
1	**General**		
1.1	5 Years	Network Analysis – to model the adequacy of network design	08/06/2023
1.2	5 Years	Network Validation Survey – to check network analysis model with measured data	07/12/2021
2	**Iron Pipelines, mains, fittings and services (includes buried outlet pipework and risers from Primary Meter Installations and PRIs.)** Note: iron pipes including risers that transition below ground are not permitted for use with LPG – any such pipes must be immediately scheduled for replacement with immediate mitigation measures implemented as agreed by the PGE		
3	**Steel Pipelines, mains and services (includes buried outlet pipework and risers from Primary Meter Installations and PRIs.)** Note: buried steel pipes including risers that transition below ground are not permitted for use with LPG – any such pipes must be immediately scheduled for replacement, and the PGE informed		
4	**Polyethylene (PE) Pipelines, mains and services**		
4.1	5 Years	Leakage survey – All pipes within site regardless of proximity to buildings	07/12/2021
4.2	5 Years	Over line pipe survey – All pipes within site regardless of proximity to buildings	07/12/2021
5	**Above-ground pipework (including outlets from first stage LPG regulator, PRI pipework, exposed crossings or water courses, services entries etc.).**		
5.1	12 Month	Visual inspection of pipework	07/12/2021
5.2	12 Month	Visual inspection of Emergency Control Valves (ECVs)	07/12/2021
5.3	12 Month	Visual inspection of pipe supports, brackets, gantries etc.	07/12/2021
5.4	12 Month	Visual inspection and assessment for vehicle impact protection measures – e.g building service entries.	07/12/2021
6	**Secondary / Third Stage Pressure Regulating Installations (PRIs).** Note: this is for secondary or third stage network PRIs only – it does not include the PRIs associated with the first-stage LPG regulators or the Utilisation Meter regulator(s) installed downstream of the consumers / user ECVs.		
6.1	12 Month	Functional check of PRI including safety / redundant systems	TBC

6.2	12 Month	Visual inspection of pipework within PRI housing	N/A
7	**Meter and PRI Housings** Scope for this activity includes the housing of all meter and PRI installations		
7.1	12 Month	Inspection of PRI housing (where present)	N/A
8	**Valves**		
8.1	12 Month	Inspection of valve chambers	07/12/2021
8.2	12 Month	Leakage detection survey within valve chamber	07/12/2021
9	**LPG Vessel Installation Compound**		
9.1	12 Month	General Inspection to include items a) to k) in TS/GAS-01.	07/12/2021
8.2	12 Month	Visual inspection of above ground steel outlet pipework.	07/12/2021

4.2 Iron Pipework.

Where cast iron (including spun iron) or ductile iron pipework exists on an MOD establishment it is to be risk assessed in accordance with section 4.3 of the MOD GSC and, where required, entered into a mains replacement programme in order to comply with the UK mains replacement enforcement policy.

Below is the amount of Cast Iron and / or Ductile Iron pipe, and details, identified at this establishment from a survey:

Cast Iron (m):	0
Ductile Iron (m):	0

Pressure (mbar)	Nominal Diameter (“)	Cast Iron or Ductile Iron	Total Length (m)	Closet Proximity to buildings (m)	Risk Score	Planned Replacement Date

4.3 Buried Steel Pipework.

Where buried steel pipework exists on a MOD establishment there is a legal requirement to take steps to ensure its rapid replacement.

Below is the amount of buried steel pipework on the LPG installation at this establishment:

Buried Steel Pipework (m):	0

Steel Pipework connected to vessel number	Steel pipework connected to building number	Nominal Dia (“)	Total Length (m)	Pressure (mbar)	Planned Replacement Date

5. RISK ASSESSMENTS

5.1 Model Risk Assessments.

The Model Risk Assessment (RA) shown in the table below, highlight the factors that will affect the safe management of the flow of gas, and the provision of the emergency response service. These RA, reviewed and modified as appropriate to this establishment, are shown at Annex C. (These RA must be reviewed and authorised by the GRP as being correct for this establishment with the date entered at the top of the RA).

RA No.	Title (Model Risk Assessments)
1	Any gas leak considered hazardous to persons or property (Under med/low pressure conditions).
2	Fire or explosion near to, or directly involving, a pipeline or gas facility.
3	A failure of operation of pipeline/plant onsite, or immediately downstream of site, that is maintained by the gas transporter.
4	A failure of operation of pipeline/plant onsite that is maintained by site services.
5	Failure of safety critical equipment.
6	Under-pressure in the gas system.
7	Over-pressure in the gas system.
8	Failure in system during load shedding.
9	General changes to the gas network.
10	Failure of PPM, general operation of the gas network plant/equipment and safety inspections.
11	Emergency Shutdowns.
12	Interface with Gas Supplier.
13	Interface with the consumers.
14	Interface with Emergency Services.
15	Natural Disasters, civil disturbances, other unforeseen events.

5.2 Additional Site-Specific Risk Assessments.

In addition to the model RA shown above, the site-specific RAs shown below have been identified. These RA are shown in Annex D (As with the Model RAs above, these must be reviewed and authorised by the GRP as being correct for this establishment with the date entered at the top of the RA).

16	
17	
18	
19	

6. SAFETY MANAGEMENT SYSTEMS

No site-specific considerations (refer to MOD Gas Safety Case Section 6) unless stated below:
Provision of future network maintenance has not been procured by RFCA at this time.

7. EMPLOYEE COMPETENCE

No site-specific considerations (refer to MOD Gas Safety Case Section 7) unless stated below:
No additional site specific measures in place

8. CONTRACTORS

No site-specific considerations (refer to MOD Gas Safety Case Section 8) unless stated below:
No additional site specific measures in place

9. HEALTH AND SAFETY COMMUNICATION – INTERNAL

9.1 Health and Safety Communication This section describes the systems in place to enable effective communications within this establishment. Different forms of communication are used to pass information to people within the MOD/MMOs depending on the type of information and the audience including in the event of an emergency.
9.1.1 Public Address System. The public address arrangements for this establishment are shown below
There is no public address system on site
9.1.2 Internal Electronic Correspondence. Details of any internal email or intranet correspondence are shown below
The site has the facility for email to be used for communication. Email addresses for Key site personalities are listed in section 1 of this document.
9.1.3 Direct Contact.

Details of any site-specific arrangements for direct MOD / MMO contact with site personnel and families are shown below
Face to face meetings with key personnel are possible on a regular basis if required.
9.1.4 Emergency Plans. Details of any site-wide emergency plans and arrangements, including MMO documents are shown below
No specific gas emergency plan for the establishment is in place. MOD Exemplar Gas Safety Case to be used as guidance.
9.1.5 On-Site Emergency Services. Details of site-specific arrangements for communication with site emergency services, such as fire, are shown below
There are no on-site emergency services. Site personnel will dial 999 for Police, Fire and Emergency Medical services. For Gas Emergencies site will dial 03457 444 999.

10. HEALTH AND SAFETY COMMUNICATION – EXTERNAL

No site-specific considerations (refer to MOD Gas Safety Case Section 10) unless stated below:
No additional site specific measures in place

11. AUDITS

11.1 GSM Audit.

The audit process in place monitors and measures compliance with legislation and company policy and is aimed at ensuring the safe flow of gas within the MOD networks and downstream of the consumers ECV.

The GSM audit role is primarily concerned with assuring that the GRP duties are being effectively undertaken and that the gas risks are being effectively managed on the site. All GSM Audits will be carried out using the standard audit template prepared by the DIO PGE. Every site with gas networks shall be audited as frequently as practicable, ideally annually and in accordance with a programme agreed with the DIO PGE. Every site shall be audited at least once every three years. Each GSM shall implement an audit programme which must be agreed by the DIO PGE. All completed audit reports shall be sent to the DIO PGE for review and filing.

As agreed with the PGE, GSM audits on this establishment will be carried out:	On a three-yearly basis
The last GSM audit was conducted on:	17/10/2024
The last GSM audit was carried out by:	Neville King

The qualitive assessment of the GSM audit concluded this establishment is: (safe to continue / safe to continue subject to caveats / unsafe to continue)	Safe to continue subject to Caveats
Audit findings:	See Audit Report
Points addressed following last audit:	

12. CO-OPERATION

12.1 Emergency Exercises.

On MOD networks, the MMO utilises the gas supplier to provide a gas emergency response service for dealing with reported gas escapes. However, the gas supplier response would normally be to isolate at the vessel(s). As this is likely to cause considerable inconvenience and expense to MOD facilities, where possible MMO staff / contractors would attempt to attend the emergency in advance of the gas supplier personnel to assess the emergency and advise gas supplier accordingly.

It is the responsibility of the HoE to ensure that a gas emergency exercise is conducted on the establishment at least once in a three-year period. The HoE will require the support and involvement of the MMO and all key stakeholders such as the gas supplier. Lessons learnt should be actioned and kept within the gas document centre.

Date of last emergency exercise:	No previous emergency exercises
Date of next planned emergency exercise:	From Q4 2022
Date of last actual emergency involving the gas supplier:	18/04/2024
Was the gas supplier involved in the last emergency exercise:	Yes
Were the MOD emergency services involved in the last emergency exercise or actual emergency:	No
Summary of lessons learnt from the last emergency exercise or actual emergency:	Call out was actioned correctly
Date MMO emergency contact numbers and procedures were last tested:	18/04/2024

13. EMERGENCY SERVICE RESPONSE TO GAS ESCAPES

No site-specific considerations (refer to MOD Gas Safety Case Section 13) unless stated below:

There are no site-based emergency services at Yoxter RFCA. If required in the event of an incident the civilian emergency services will be contacted. The EGDN responder will also be suitably qualified and competent to action assistance as required.

14. INVESTIGATIONS

No site-specific considerations (refer to MOD Gas Safety Case Section 14) unless stated below:

Any gas incidents on site will be subject to investigation, these include items such as pipe strikes or unsafe occurrences. Incidents are then logged on the DIO IMS system so reports can be requested, or closure actions confirmed if required.

15. GAS QUALITY

No site-specific considerations (refer to MOD Gas Safety Case Section 15) unless stated below:
As the gas is supplied directly by the EGDN it is deemed to already be of the correct quality as required by them to supply to the MOD as a consumer. The MOD have no further control over gas quality.

16. CONTINUITY OF SUPPLY

No site-specific considerations (refer to MOD Gas Safety Case Section 16) unless stated below:
If any supply emergencies are notified by the supplier, the site will review usage to reduce any non-critical consumption or reduce potential maximum demands. Assets fed from the MOD network are subject to network modelling to ensure continuity of supply so any operations on the network are subject to analysis before they are permitted.

17. ADEQUATE NETWORK PRESSURE

17.1 Network Analysis.

Network Analysis is the primary tool by which the MOD satisfies itself that anticipated levels of demand can be supplied from its LPG networks to gas consumers. It allows different scenarios to be examined. The technique ensures the efficient management and operation of the LPG supply systems. It enables a detailed understanding of the gas supply system to be developed upon which cost effective planning and operating decisions can be made.

In accordance with industry recommendations Network Analyses must be repeated at every site containing an MOD Network at least five-yearly, or sooner, if for gas system modification purposes or when demand profiles have changed, or are expected to change.

For this establishment the network analysis was undertaken by:	DNV
For this establishment the network analysis was undertaken on:	08/06/2023

17.2 Design Minimum Pressure.

These minimum pressures will be seen at the extremities of the systems under extreme conditions. To ensure that all gas equipment downstream of the LPG vessel can be safely operated, it is a gas industry recommendation that the network should maintain a minimum of 90% of the nominal set outlet pressure of the first stage regulator at the inlet to each final stage regulator.

The minimum modelled pressure (based on 1:20 peak 6 minutes flow conditions) at the system extremity is:	Within 10 % of outlet of 1st stage regulator
The location of the minimum pressure is:	Cadet Building
The declared minimum pressure (DmP) is:	43.37 mbar

17.3 Network Analysis Results.

A brief description of the network analysis results is below;

NETWORK ANALYSIS

Model Data

Pipe Data

The pipe model was built from the 'WX102-B-A1.dwg' file produced by DNV from drawing records supplied by the RFCA. The files included the pipe lengths, connectivity, diameters and materials all used in the modelling.
It is noted that some pipe details are assumed.

Demand Data

The demand levels used in the analysis are the maximum estimated flows that the network is likely to experience. This criterion is stated in IGE/GL/1 Planning of Gas Distribution Systems of MOP not Exceeding 16 bar, section 4.2.1:
'Any system should be designed to meet the maximum demands placed upon it.
Note: Experience has shown that this is likely to be the maximum demand that will occur in any period of not less than 6 minutes, expressed as an hourly rate.'
The Yoxter CTC site is comprised of a mixture of building types and usage, and the principal uses for gas are for space and water heating. The effects of diversity have not been considered. This undiversified demand modelling ensures that the worst-case scenario is assessed.

Details of installed appliances were available for all of the buildings on site. The appliance input ratings (kW) were used to calculate the peak instantaneous flow rates (sm3/h). These values represent the maximum flow within the pipe network and are undiversified values.

Supply Data

Gas is supplied to Yoxter CTC from three 2 tonne LPG vessels. Supply pressure data obtained by DNV in the form of instantaneous pressure readings shows the outlet pressure of the vessels to be as follows:

- 3 x 2 tonne LPG vessels, located in the Bulk Compound had second stage regulator outlet pressure of 45.9 mbar.

For the modelling, the instantaneous pressure recorded at the second stage regulator outlet at the LPG Bulk Compound has been used.

Regulator Installations

The regulator details were taken from the GSMP Survey Sheet for the site.

Vessel Sizing

Each LPG vessel has an offtake capacity, which is the maximum rate at which the liquid LPG vaporises to produce gas. The larger the vessel the greater the offtake capacity, which is normally quoted in Kilowatts (kW).
A lower ambient temperature will reduce the maximum continuous offtake rate of an LPG vessel, so consideration must be given of the vessel's operating environment when specifying the size of LPG vessel required.
The offtake capacity of the vessel installed must be sufficient to supply all of the appliances connected to it at peak demand.
The buildings at Yoxter CTC are supplied gas via a fixed LPG storage compound of the below capacity.

3x 4600L (propane capacity) Above Ground LPG Vessels 1047 kW (3x 349kW)

LPG Storage Offtake Capacities

The design offtake capacity of a single 4600L storage vessel is based on a tank with 25% liquid contents and at a temperature of 5ºC, for the three vessels this capacity is 1047kW. At present the total maximum gas demand (19kW at peak load) for all supplies is within this value.

Modelled Pressure Results

All of the modelled pressures are similar to the recorded pressures as expected.
As a result of the pressure comparison, there is a reasonably high level of confidence in the modelling of the network.
The minimum modelled pressure on the network is 43.37 mbar at the inlet to the Cadet building. This shows a modelled pressure drop of 2.53 mbar from the supply (45.9 mbar).

17.4 Network Validation Survey.

As part of the network analysis validation procedure, pressure monitoring points are to be installed on MOD networks to enable pressure surveys to be conducted. In accordance with the recommendations of Section 8.3.2. of IGE/GL/1, pressure surveys will need to be carried out on MOD networks to verify that the results from the network models were indicative of the recorded pressures on the network. This is a practice which is widely used throughout the gas industry to check network models provide realistic results.

It is the responsibility of the MMO to ensure adequate pressure surveys are conducted at regular intervals to validate the pressures predicted by network analysis results. This must be conducted at a minimum of once every five years, in conjunction with a Network Analysis or when demand profiles on the network have changed. Similarly, if the results of a previous Network Analysis are suspected to be inaccurate (for example, low extremity pressures being experienced), a repeat Network Analysis should be undertaken.

For this establishment the latest validation survey was undertaken by:	DNV
For this establishment the latest validation survey was undertaken on:	14/12/2022

17.5 Network Validation Survey Results.

A brief description of the network validation survey results is below which includes a comparison of the modelled pressure and actual pressure record;

Pressure Survey and Network Analysis Results

Pressure Survey

In accordance with the recommendations of Section 8.3.2 of IGE/GL/1, a pressure survey would normally be carried out on the Yoxter CTC network in order to verify that the results from the network model were indicative of the recorded pressures on the network. This is a practice which is widely used throughout the gas industry to provide confidence in network analysis models.
The network was surveyed on the 14th December 2022. Single point pressure readings using a Druck pressure gauge or similar were recorded. These were attached to the outlet of the supply regulators and at the meter points in the buildings.
A simple pressure survey of short-term single readings was undertaken at 2 regulator locations in the modelled area. The recorded pressures taken in this type of survey may be standing pressures where the appliances are not operational, or working pressures, where they are. There may be several mbar difference between these pressures.
The figure below shows the location of single read pressure points at the Yoxter CTC site as light blue boxes.

Pressure Modelling and Comparison

The network model was built and analysed as detailed above. The pressure data collected during the survey was compared with the modelled pressures, as shown in the table below.
It is often the case that the modelled pressures will fall below those recorded as the modelled demand is the estimated maximum and it is unlikely that these conditions were experienced whilst the survey was undertaken. Providing that the modelled pressures are not significantly lower than those recorded, this should not be a cause for concern as the difference can be attributed to the lower demand flows being experienced.

Building	Modelled Flow (sm^3/h)	Pressure (mbarg)	
		Single Read	Modelled
Bulk Compound: 3 x 2 tonne tanks	-	45.9 (standing)	45.9
Building 3	7.8	34.8 (standing)	34.37

All of the modelled pressures are similar to the recorded pressures as expected.
As a result of the pressure comparison, there is a reasonably high level of confidence in the modelling of the network.
The minimum modelled pressure on the network is 43.37 mbar at the inlet to the Cadet building. This shows a modelled pressure drop of 2.53 mbar from the supply (45.9 mbar).

17.6 Corrective measures.

Following the network analysis and network validation survey the below corrective or mitigation measures have been planned at this establishment;

MOD LPG network name / ID:	MoD Network 01

The results for the Yoxter CTC model as a whole are satisfactory.

18. GAS SUPPLY EMERGENCIES

No site-specific considerations (refer to MOD Gas Safety Case Section 18) unless stated below:

No additional site specific measures in place – contact Calor Gas

19. GAS QUALITY – SOLE CONVEYER

No site-specific considerations (refer to MOD Gas Safety Case Section 19) unless stated below:

The gas for the MoD is supplied at the relevant Quality via Calor Gas therefore the provisions of GSMR Schedule 1Paragraph 19 does not apply.

20. DISCONTINUING GAS SUPPLY

No site-specific considerations (refer to MOD Gas Safety Case Section 20) unless stated below:
No additional site specific measures in place

21. RESTORATION OF SUPPLIES

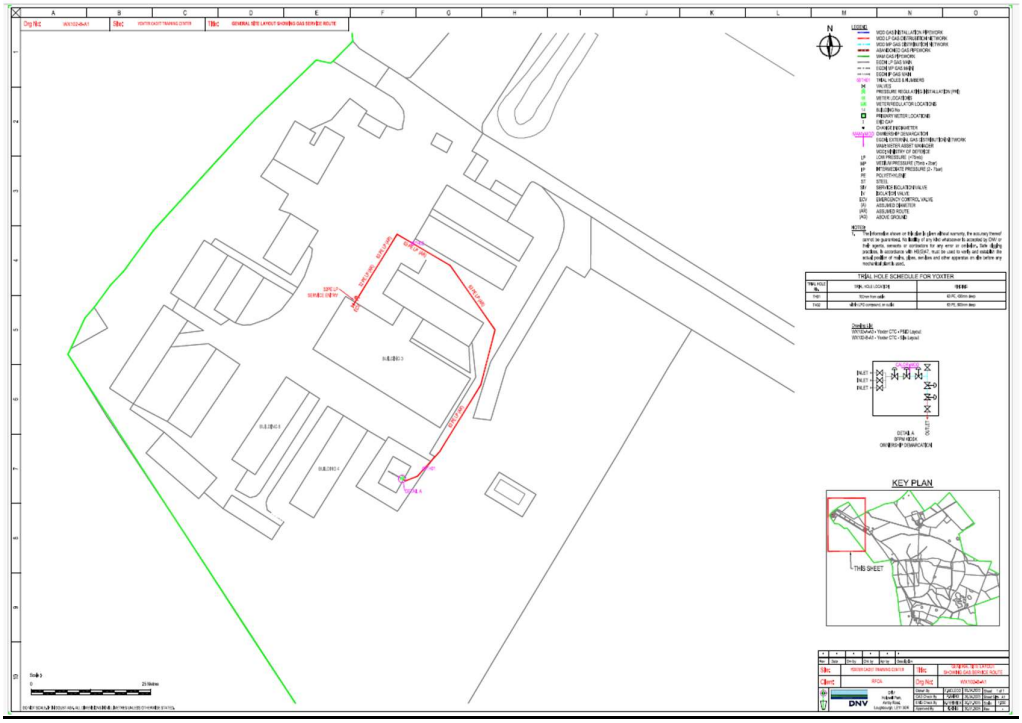
No site-specific considerations (refer to MOD Gas Safety Case Section 21) unless stated below:
To re-establish any isolated supplies following an emergency isolation the Gas RP will ensure that each supply/service is methodically re-instated following suitable pressure testing and purging if the mains/services have de pressurised and where there is a possibility of an air/gas mixture within the pipelines. These works will take place under a specific safe system of work procedure.

ANNEX A - ABBREVIATIONS

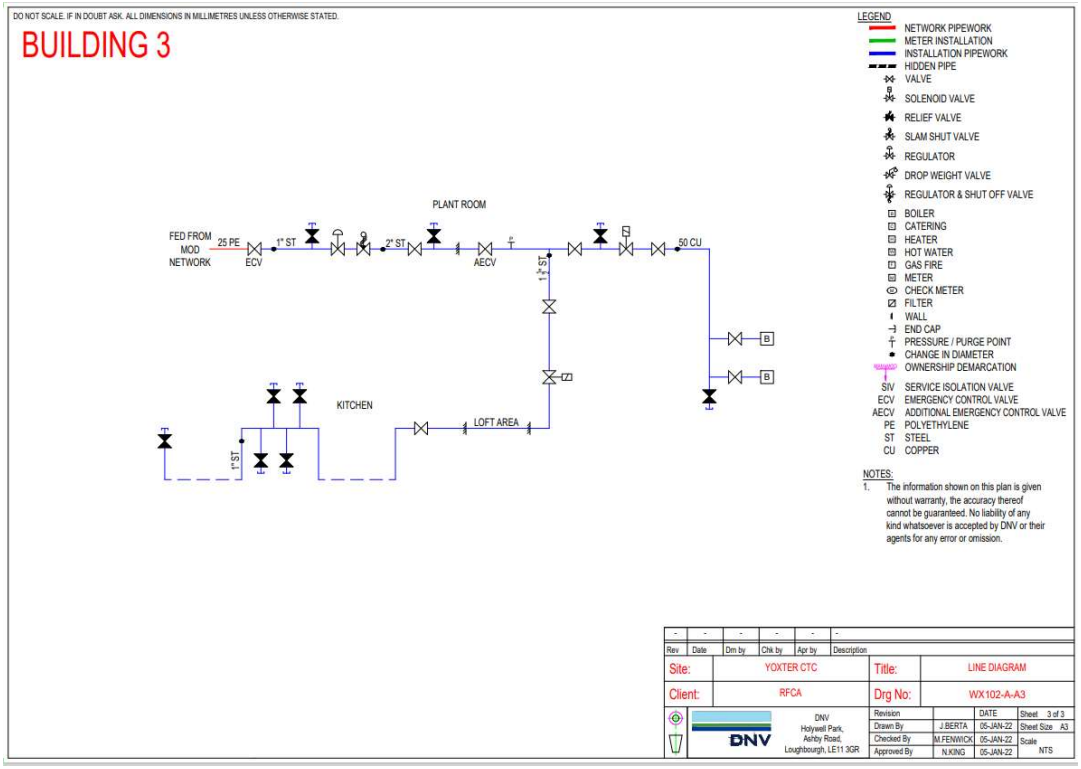
4C's	Co-ordination, Co-operation, Communication and Control
AE	Authorising Engineer
CI	Cast Iron
CIPS	Close Interval Potential Survey
CP	Cathodic Protection
DI	Ductile Iron
DIO SD EUS	Defence Infrastructure Organisation Service Delivery, Energy, Utility and Sustainability
DIO TS	Defence Infrastructure Organisation Technical Services
DIO	Defence Infrastructure Organisation
DmP	Design Minimum Pressure
ECV	Emergency Control Valve
FIM	Functional Independence Measure
GRP	Gas Responsible Person
GSIUR	Gas Safety (Installation and Use) Regulations1998
GSMR	Gas Safety (Management) Regulations 1996
GSC	Gas Safety Case
GSM	Gas Safety Manager
GSMP	Gas Safety Management Plan
HoE	Head of Establishment
HP	High Pressure
IGEM	Institute of Gas Engineers and Managers
IP	Intermediate Pressure
LP	Low Pressure
LPG	Liquified Petroleum Gas
MMO	Maintenance Management Organisation
MOD	Ministry of Defence
MP	Medium Pressure
NA	Network Analysis
NG	Natural Gas
NVS	Network Validation Survey
PE	Polyethylene
PGE	Principal Gas Engineer
PRI	Pressure Reduction Installation
PUS	Permanent Under Secretary
RA	Risk Assessment
SHEF	Safety, Health, Environment and Fire
TLB	Top Level Budget Holder

ANNEX B - SITE LAYOUT DRAWINGS.

Site Layout Drawing



Building 3



ANNEX C

ANNEX C - MODEL RISK ASSESSMENTS

Site Reviewed Model Risk Assessment - 01	
For: Yoxter CTC	**Approved by: Ian Bradley**
Any gas leak considered hazardous to persons or property	**Date reviewed: 18/02/2025**
Risk	Any leak at any pressure can be quantified as a hazard. The higher the pressure and/or depending on the location of the leak the risk to the surrounding area varies
	Depending on the severity of the leak, other hazards such as explosions, fires, supply failures, pollution and associated financial implications could arise
	Depending on how quickly & thoroughly the gas leak is dealt with the resulting hazards from the incident will vary.
Caused By	Damage to pipelines from digging
	Failure of control equipment
	Damage caused by general construction
	Corrosion of pipelines
	Failure of mechanical joints and seals
	Deterioration or rupture of pipeline
	Poor communication between involved parties can exacerbate the problem
	Length of response time by first responders
Hazards Resulting from Risk	Damage to pipelines caused by uncontrolled escaping gas
	Risk of causing a supply emergency
	Damage to persons & property
	Risk of Explosions & Fire
	Pollution of environment
	Purging maybe required after corrective action
Current Preventative Methods	Permits to Dig
	Planned Preventative Maintenance
	Type & Quality control of materials used in gas network
	Strict adherence to emergency procedures in the event of an emergency
	Isolation via emergency stops
	Installation of gas network to industry standards
Further Required Preventative Methods	Pressure monitoring
	More accurate gas network layout drawings
	Use of the gas safety management plan
	Training of all involved parties
	Training and simulated gas emergency drills
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.
Site Reviewed Model Risk Assessment - 02	

For: Yoxter CTC	Approved by: Ian Bradley
Fire or explosion near to, or directly involving, a pipeline or gas facility	**Date reviewed: 18/02/2025**
Risk	Any fire or explosion directly involving a gas pipeline or facility could cause a major incident.
	Any fire or explosion near to a gas pipeline or facility may cause personal injury and or damage to property.
Caused By	Undetected trapped gas
	Unresolved gas leaks
	Failure of control equipment, pipelines, seals, joints etc.
	Damage to gas pipelines through digging and/or general construction
	Incorrect initial procedure when dealing with a gas leak
	Inadequate action by first responder
Hazards Resulting from Risk	Fire and/or explosions causing death and/or injury to general populous
	Damage and/or destruction of surrounding properties
	Damage to gas pipelines, gas control centres & other gas related equipment
	Disruption of gas supply
	Secondary Explosions & Fire resulting from inaction
Current Preventative Methods	Scheduled Maintenance
	Designed for purpose
	Permits to Dig
	Strict adherence to emergency procedures, including ventilating and evacuating area
Further Required Preventative Methods	Pressure monitoring
	Use of the gas safety management plan
	Training and simulated gas emergency drills
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 3	
For: Yoxter CTC	**Approved by: Ian Bradley**
A failure of operation of pipeline/plant onsitethat is maintained by the Gas Supplier	**Date reviewed: 18/02/2025**
Risk	Any incident directly involving the bulk LPG vessel(s) and gas supplier's equipment onsite can only be dealt with by Calor Gas. In the event of a leak the response time by Calor Gas. has an impact on the severity of the incident
	The level of cooperation and communication between Gas Supplier and the onsite parties has an impact on the eventual severity of the incident
Caused By	Poor response time by Calor Gas.
	Poor communication between onsite parties and Calor Gas.
	Poor coordination of onsite parties and Calor Gas.
	Poor communication of procedures
	Lack of supply resulting in drop in supply pressure, resulting in site wide gas supply failure
	Bulk LPG vessel(s) running out of LPG
Hazards Resulting from Risk	Disruption of gas supply to whole site
	Re-commissioning & purging after corrective action
	Re-ignition of non automatic ignition systems
	Long down time due to above hazards
Current Preventative Methods	General communication between site and Calor Gas.
Further Required Preventative Methods	Communication of site procedures to Calor Gas.
	Understanding Calor Gas. procedures
	Training and simulated gas emergency drills
	Training for quicker response time
	Pressure monitoring
	Planning for load shedding (reduces the risk of site wide gas failure)
	Fitting automatic ignition systems as standard
	Use of the gas safety management plan
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 4	
For: Yoxter CTC	**Approved by: Ian Bradley**
A failure of operation of pipeline/plant onsite that is maintained by site services	**Date reviewed: 18/02/2025**
Risk	Any incident directly involving the low or medium pressure pipelines onsite can be dealt with by the onsite gas operatives. In the event of a leak the response time by the onsite operatives has an impact on the severity of the incident
	The level of cooperation and communication between onsite parties such as emergency services and gas operatives has an impact on the eventual severity of the incident
Caused By	Poor response time by site services
	Poor communication between onsite parties
	Poor coordination of onsite parties
	Poor communication of procedures
Hazards Resulting from Risk	Disruption of gas supply to whole site
	Re-commissioning & purging after corrective action
	Re-ignition of non-automatic ignition systems
	Long down time due to above hazards
Current Preventative Methods	Scheduled Maintenance
	Designed for purpose
	Permits to Dig
	Strict adherence to emergency procedures
Further Required Preventative Methods	Pressure monitoring
	Use of the gas safety management plan
	Training and simulated gas emergency drills
	Training for quicker response time
	Planning for load shedding (reduces the risk of site wide gas failure)
	Fitting automatic ignition systems as standard
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 5	
Approved by:	Approved by: Ian Bradley
Failure of safety critical equipment	Date reviewed: 18/02/2025
Risk	Failure of safety critical equipment can have a severe impact on the safety of the gas network.
Caused By	Lack of/or poor maintenance
	Incorrect use of equipment
	Ageing equipment
Hazards Resulting from Risk	Lack of control over gas network, resulting in a gas incident
	Lack of control over gas network during a gas incident
Current Preventative Methods	Scheduled Maintenance
	Designed for purpose
	Regular operational training
Further Required Preventative Methods	Pressure monitoring
	Further training of gas operatives
	Replacing old equipment where required
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 6	
For: Yoxter CTC	**Approved by: Ian Bradley**
Under-pressure in the gas system	**Date reviewed: 18/02/2025**
Risk	If at any point the pressure in a gas network drops below a certain level, gas safety regulators will stop the flow of gas. These regulators are fitted to gas appliances and in some instances will also be downstream of the gas meter into individual houses. There is also a regulator on the main intake to the site.
	If the pressure in a gas network, leading into a house or facility, drops below a certain level a gas safety regulator will terminate the flow of gas. This will cause the pilot lights to be extinguished. On this site, due to the multitude of buildings and houses, it may take up to 3 days to re-ignite all the systems.
Caused By	Gas leaks
	Poor gas network management
	Failure of Compressors
	Inadequate supply of gas in the system
	Failure of pressure control system
	Bulk LPG vessel(s) running out of LPG
Hazards Resulting from Risk	Loss of gas supply
	Gas safety regulators being tripped (requires manually resetting on older models)
	Long recovery period
	Potential for air in the gas network
Current Preventative Methods	Scheduled Maintenance
	Designed for purpose
Further Required Preventative Methods	Pressure monitoring
	Regular training of gas operatives
	Replacing old equipment where required
	Fitting automatic ignition systems as standard
	Replacing manual gas safety regulators with automatic cut-outs
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 7	
For: Yoxter CTC	**Approved by: Ian Bradley**
Over-pressure in the gas system	**Date reviewed: 18/02/2025**
Risk	If at any point the pressure in a gas network climbs above a certain level, gas safety regulators will stop the flow of gas. These regulators are fitted to gas appliances and in some instances will also be downstream of the gas meter into individual houses. There is also a regulator on the main intake to the site
	f the pressure in a gas network, leading into a house or facility, climbs above a certain level a gas safety regulator will terminate the flow of gas. This will cause the pilot lights to be extinguished. On this site, due to the multitude of buildings and houses, it may take up to 3 days to re-ignite all the systems.
Caused By	Failure of pressure control system
	Incorrect pipe/valve sizing
	Blockages in system
	Poor gas network management
	Gas quality / composition changes
	Thermal gain
Hazards Resulting from Risk	Rupture of gas pipes due to high pressure related
	Damage to valves and other control equipment
	Damage to seals and joints
	Loss of gas supply
Current Preventative Methods	Scheduled Maintenance
	Designed for purpose
Further Required Preventative Methods	Pressure monitoring
	Regular training of gas operatives
	Use of the gas safety management plan
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 8	
For: Yoxter CTC	**Approved by: Ian Bradley**
Failure in system during load shedding	**Date reviewed: 18/02/2025**
Risk	In the event of a gas supply emergency, load shedding can be used to stabilise the pressure in the system. However, if a section is isolated and the consumers on that branch use their gas supply the pressure in that branch will drop below acceptable levels and the pressure safety regulators will trip
Caused By	Insufficient communication between onsite parties and the end user
	Insufficient means of monitoring pressure
Hazards Resulting from Risk	Loss of gas supply
	Gas safety regulators being tripped (requires manually resetting on older models)
	Long recovery period
	Potential for air in the gas network
Current Preventative Methods	
Further Required Preventative Methods	Better communication
	Pressure monitoring
	Use of the gas safety management plan
	Fitting automatic ignition systems as standard
	Replacing manual gas safety regulators with automatic cut-outs
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 9	
For: Yoxter CTC	**Approved by: Ian Bradley**
General changes to the gas network	**Date reviewed: 18/02/2025**
Risk	If during the design phase the sizing of the system is under/over sized, it could result in under/over pressure scenarios.
	If during the installation of a gas network, the work is not carried out to the relevant British Standards and if the work is not undertaken by operatives trained and skilled to the same British Standards, failure may take place.
Caused By	Incorrect pipe sizing at design phase
	Underestimating impact on overall site gas supply
	Incorrect installation of plant and pipelines
	Under qualified gas operatives used for gas works
Hazards Resulting from Risk	Damage to pipelines and gas network plant and equipment
	Risk of causing a supply emergency
	Damage to persons & property
	Risk of Explosions & Fire
Current Preventative Methods	Using trained individuals to carry out work to the gas network
	Checking credentials of design authority for gas network redesign
Further Required Preventative Methods	Monitoring competence of gas network operatives
	Use of the Gas Safety Management Plan
	Further checking/commissioning of completed works
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 10	
For: Yoxter CTC	**Approved by: Ian Bradley**
Failure through PPM, general operation of the gas network plant/equipment and safety inspections	**Date reviewed: 18/02/2025**
Risk	Inadequate action during maintenance can cause failure in the system
	If safety inspections are not carried out regularly, the system may be vulnerable to failure
	The day to day operation of the system is vital to the overall performance of the gas network. If the day to day operation is not undertaken to industry standards, the gas network could be vulnerable to failure
Caused By	Gas plant & pipelines are not sufficiently maintained
	Scheduled activities do not take place.
	Operatives are insufficiently trained
	Inadequate co-ordination of operation
	Inadequate communication between onsite parties
	Inadequate planning of scheduled activities
	Inadequate inspection and testing of equipment
Hazards Resulting from Risk	Damage to pipelines and gas network plant and equipment
	Risk of causing a supply emergency
	Damage to persons & property
	Risk of Explosions & Fire
Current Preventative Methods	Monitored and maintained
	Using trained individuals to carry out work to the gas network
	Following PPM schedules to carry out works
	Awareness Training, drills and exercise
	Using qualified operatives
Further Required Preventative Methods	Monitoring competence of gas network operatives
	Checking credentials of design authority for gas network redesign
	Employ better lines of communication between parties
	Compliance with the Gas Safety Management Plan
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 11	
For: Yoxter CTC	**Approved by: Ian Bradley**
Emergency Shutdowns	**Date reviewed: 18/02/2025**
Risk	Emergency shutdowns can be used in the event of a gas incident which warrants the gas network or part thereof to be shut down. If this process fails, it can have a severe impact on the resolution of the incident
Caused By	Failure of emergency shutdown valves
	Ageing emergency shutdown valves
	Lack of sufficient facilities for segregated shutdowns
Hazards Resulting from Risk	Escalating hazard cause by existing emergency
	Damage to pipelines and gas network plant and equipment
	Risk of causing a supply emergency
	Long down time
Current Preventative Methods	
Further Required Preventative Methods	Use of the Gas Safety Management Plan
	Providing strategically placed emergency shutoff valves
	Scheduled PPM
	Checking credentials of design authority for gas network redesign
	Replacing old equipment where required
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 12		
For: Yoxter CTC		**Approved by: Ian Bradley**
Interface with Gas Supplier		**Date reviewed: 18/02/2025**
Risk	If interfaces between the site team and the gas supplier are not managed carefully, the fallout from gas incidents can become more pronounced	
Caused By	Poor response time by the gas supplier	
	Poor communication between onsite parties and the gas supplier	
	Poor coordination of onsite parties and the gas supplier	
	Poor communication of procedures	
Hazards Resulting from Risk	Damage to pipelines	
	Resultant hazards from any gas incident can escalate	
	Risk of causing a supply emergency	
	Damage to persons & property	
	Risk of Explosions & Fire	
Current Preventative Methods		
Further Required Preventative Methods	Communication of site procedures to the gas supplier	
	Understanding the gas suppliers' procedures	
	Training and simulated gas emergency drills	
	Regular communication through fixed procedures	
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.	

Site Reviewed Model Risk Assessment 13	
For: Yoxter CTC	**Approved by: Ian Bradley**
Interface with Consumer	**Date reviewed: 18/02/2025**
Risk	If communication between the site team and the end user are not carefully established, the fallout from gas shortages could result in the system having to be purged and the pilot lights re-ignited. On a large site such as this, it could take up to three days to re-ignite all pilot lights.
Caused By	Poor communication
	Lack of understanding
	No method of checking on gas usage
Hazards Resulting from Risk	Risk of causing a supply emergency
	Loss of pressure in system
	Long recovery period
	Potential for air in the gas network
Current Preventative Methods	
Further Required Preventative Methods	Pressure monitoring system
	Use of the Gas Safety Management Plan
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 14	
For: Yoxter CTC	**Approved by: Ian Bradley**
Interface with Emergency Services	**Date reviewed: 18/02/2025**
Risk	The first responder has a duty to minimise the risk to the surrounding area upon arrival. If the gas incident is within a enclosed area, isolating the system is the correct course of action. However in a open, well ventilated area, isolating the system may not be necessary, and could cause secondary hazards
Caused By	Poor communication
	Lack of understanding
Hazards Resulting from Risk	Risk of causing a supply emergency
	Causing the need to purge systems
	Long downtime of gas network
Current Preventative Methods	
Further Required Preventative Methods	Providing training to the Emergency Services, so that they will be able to better tackle gas incidents
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

Site Reviewed Model Risk Assessment 15	
For: Yoxter CTC	**Approved by: Ian Bradley**
Natural Disasters, civil disturbances, other unforeseeable events	**Date reviewed: 18/02/2025**
Risk	The risk of unforeseeable events causing gas related incidents cannot be planned for. However it is possible to minimise the impact of the resulting hazards
Caused By	Explosions
	Ground tremors
	Gas pipe sabotage
Hazards Resulting from Risk	Damage to pipelines caused by uncontrolled escaping gas
	Risk of causing a supply emergency
	Damage to persons & property
	Risk of Explosions & Fire
	Pollution of environment
	Purging maybe required after corrective action
Current Preventative Methods	High security levels
Further Required Preventative Methods	Use of the Gas Safety Management Plan
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.

ANNEX D

ANNEX D - ADDITIONAL SITE-SPECIFIC RISK ASSESSMENT TEMPLATE
Please copy and add further sheets as required

Additional Site-specific Risk Assessment 16	
For:	**Approved by:**
	Date reviewed:
Risk	
Caused By	
Hazards Resulting from Risk	
Current Preventative Methods	
Further Required Preventative Methods	
Audits	In the event of an incident, near miss or any other hazardous occurrence this RA must be reviewed and updated as appropriate.