

Tollgate, Gravesend

SUBADRA

Environmental - Geotechnical - Laboratory - Foundations

13 Triangle Business Park, Stoke Mandeville, HP22 5BL

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INFILTRATION TEST REPORT



Report Prepared By:

Report Reviewed By:

Megan Chan

Steven Partridge

Client: BP Pulse,
Chertsey Road, Sunbury On
Thames, TW16 7BP

Subadra Consulting Ltd. Registered in
England No. 4586038
Registered Office 13 Triangle Business
Park, Stoke Mandeville, HP22 5BL

Report

BP12954 CL 007a

Date

December 2022

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List of Attachments

Attachment One:	Notice to Interested Parties
Attachment Two:	Site Plans and Test Pit Logs
Attachment Three:	Infiltration Test Data
Attachment Four:	Public Utility Drawings

Client: BP Pulse,
Chertsey Road, Sunbury On
Thames, TW16 7BP

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1 Introduction

1.1 The Purpose of Our Testing

The site is located on Watling Street, near the eastbound A2, south of Gravesend and currently comprises the derelict Tollgate Motel. We understand that BP Oil UK Limited (BP) proposes to redevelop the site as a service area, comprising the construction of a sales building, surrounded by Electric Vehicle (EV) charging bays, a canopy-covered petrol and diesel forecourt, a below ground tank farm and associated petroleum infrastructure.

We have been commissioned by BP to carry out infiltration testing of the underlying soil to provide data to assist with developing a drainage strategy for the proposed development. Our infiltration testing was undertaken in accordance with the guidelines and methodology presented in British Research Establishment (BRE) Digest 365 (2016).

Your attention is drawn to the Notice to Interested Parties included as Attachment One.

1.2 The Scope of Our Work

Our assessment of the site was carried out in the following parts:

- A review of previous ground investigation report(s);
- A desk based review of the site's geo-environmental setting using data information that is readily available in the public domain
- Supervising and logging the excavation of three test pits using a 5 tonne tracked excavator in locations close to those specified by the client (subject to service clearance).
- Filling the test pits over two days with potable water and monitoring of falling water levels within the pits by a suitably qualified technician;
- Backfilling of test pits on completion;
- Provision of this report, which details the results of our testing and conclusions, and makes recommendations for further works (if necessary).

All the activities comprising this assessment were carried out in accordance with the procedures set out in our Quality Manual.

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1.3 Previous Reports Relating to the Site

As part of our works we have reviewed the reports listed in the following table.

Our Ref.	Report Title	Prepared By	Prepared on Behalf of	Date of Issue	Report Reference
Ref.1	Geo-Environmental Investigation Report	Subadra Consulting Ltd	BP Oil UK Ltd (BP)	September 2012	IN16403 CL 002
Ref.2	Phase I Environmental Assessment			November 2022	BP12954 CL006b

Our summary review of these documents is provided in Table Two below and we have used information from these documents, where relevant, in other sections of this report.

Table One: Previous Environmental Reports Relating to the Site

Our Ref.	Summary of Results and Conclusions of Previous Works
Ref.1	We completed a combined geotechnical and environmental investigation August 2012. At the time of the investigation the site was not in use, but the former motel and pub buildings were all present (as the present day). At the site the site was earmarked for development with a service area however the planning application for the proposed redevelopment scheme was withdrawn by BP prior to final determination. Our investigation comprised the construction of eight boreholes to a maximum depth of ~18m depth with soil samples recovered from each borehole for subsequent chemical analysis. We also excavated three trial pits to undertake infiltration testing. The geology we encountered at the site comprised Made Ground to a maximum depth of 1.0m. In the western portion of the site only, we encountered a layer of clay and/or sand to a maximum depth of 1.6m (geological unit not assigned in report but considered likely to be Head Deposits)). Beneath the Made Ground or Head Deposits layer, we encountered chalk to our maximum drilling depth of 18m. No groundwater strike was recorded in any of the boreholes. We used the data obtained during the course of our investigation to complete a conceptual site model. We did not consider the low levels of hydrocarbon compounds identified pose an unacceptable risk to either future site users and/or environmental receptors associated with the site and we concluded the site to be suitable for commercial development. Two of the soakaway tests were carried out in chalk soils, whereby the base of the pits were excavated to between 2.0m and 1.7m depth and infiltration rates of 18.9m/day (TP001) and 7.0m/day (TP003) were recorded. Testing in TP002, in the western portion of the site, was undertaken in clayey soils, whereby the base of the pit was 1.6m depth and no significant infiltration was recorded. Note we have included these test pit locations on the site plan included as Figure One of this report for reference.
Ref.2	Our report detailed the findings of a desk-based review of the site completed in November 2022. We used geological, hydrogeological and hydrological to establish environmental sensitivities at the site, a site walkover, a review of historical investigation and mapping information to compile a Conceptual Site Model and complete of a Qualitative Risk Assessment.

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Ref.2

The site walkover section of this report concludes that there are no signs of any current or recent potentially contaminative activities at the site since our 2012 investigation works. The buildings do not appear to have been used and the landscaped areas have been maintained.

This report concludes that there are no sources of potential contamination and there are no viable pollutant linkages. The site is considered suitable for redevelopment as a new service area.

Table Two: Review of Previous Environmental Works at the Site

1.4 Proposed Development Plans

Proposed Developments

We understand that BP Oil UK Limited (BP) proposes to redevelop the site as a service area, comprising the construction of a sales building, surrounded by Electric Vehicle (EV) charging bays, a canopy-covered petrol and diesel forecourt, a below ground tank farm and associated petroleum infrastructure. A site plan showing the proposed development plan is provided below.

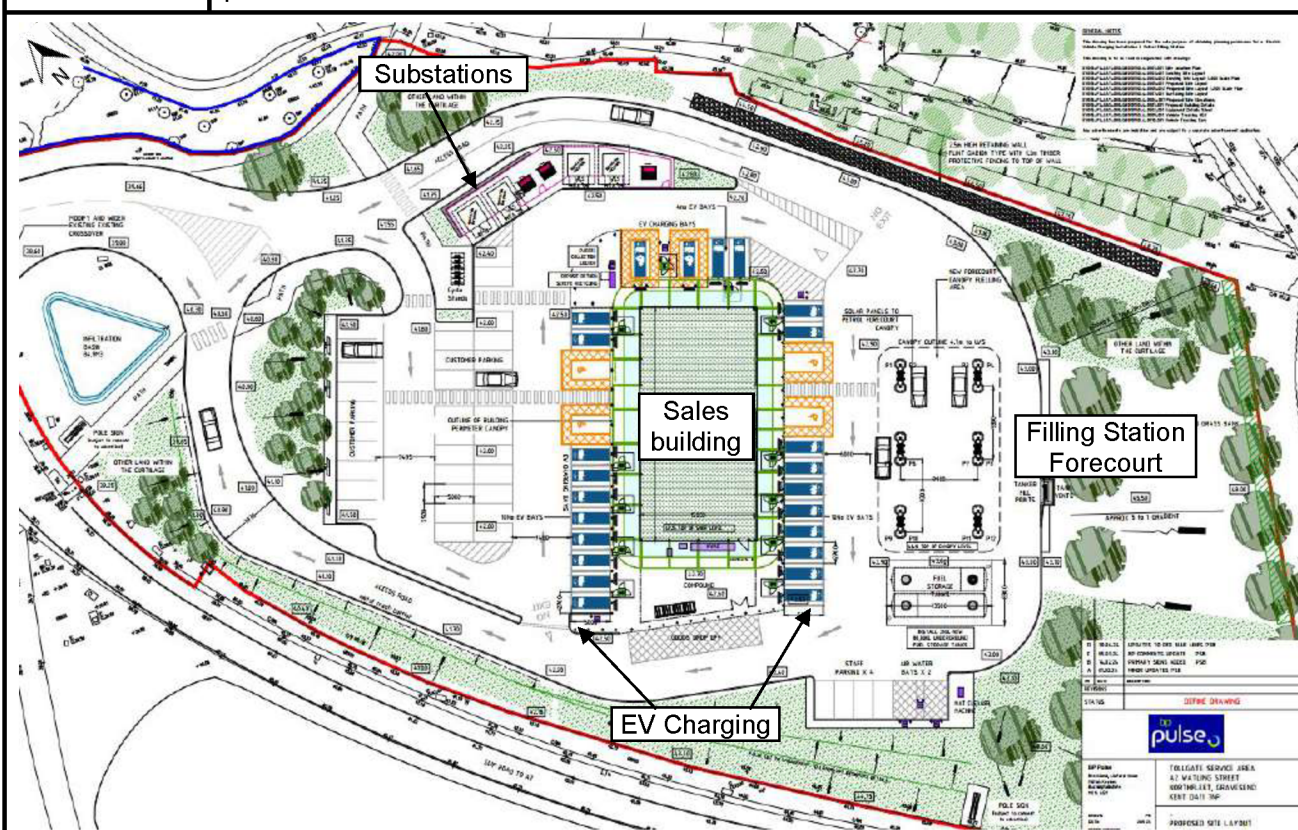


Table Three: Proposed Development Plans

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1.5 Site Description, Location and Setting

Site Description	Site Description	The site comprises approximately 1.2ha and comprises a former motel, consisting of a complex of three buildings, and one temporary building (all of which are derelict), with associated car parking and access routes around the site. The largest building, which formerly was used as the accommodation for the motel, forms an L-shape along the eastern and northern site boundaries. A second building was used for the motel restaurant, which is located on the north-western corner of the site and is surrounded by the access road for the main building. Car parking is on the western side of the site, closest to the site's entranceway. The temporary structure is located on the north of a site access road that runs along the southern boundary.
	Grid Reference	564250 171220
	Elevation (approx)	~20m AOD
	Size (approx)	~1.2ha
Surrounding Land Use	North	Roma Road (adjacent) followed by a retail filling station (~30m) and residential housing beyond this (~70m).
	East	Agricultural land (~20m) with residential housing beyond this.
	South	Access road and A2 dual carriageway, followed by agricultural land.
	West	Access road from the A2 followed by agricultural land.
Geology and Hydrogeology	Drift Geology	No drift deposits are recorded on geology maps for the site location, however localised outcrops of Head Deposits (clay, sand, gravel with occasional chalk) are present nearby.
	Solid Geology	Seaford Chalk Formation and Newhaven Chalk Formation comprising predominantly white cream chalk with flint, defined by the Environment Agency as a Principal Aquifer.
	Nearby Borehole Records	The BGS hold records for a borehole constructed ~150m to the south of the site (BGS ref. TQ67SW572). This records underlying geology to comprise a thin layer of topsoil over firm to stiff slightly sandy very silty clay with flints and gravel to a depth of 1.9m. Firm to stiff sandy clay with frequent fragments of chalk were recorded to a depth of 3.3m. Very stiff sandy and silty clay with frequent fragments of chalk were recorded to a depth of ~4.1m. Medium density structureless chalk (Grade V; Dc) is recorded to a depth of 4.4m, overlying medium density weak chalk (Grade III/IV; A4) to a termination depth of 6.11m.

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Geology and Hydrogeology	Existing Site Investigation Data	As discussed earlier in this report, the geology we encountered at the site comprised Made Ground to a maximum depth of 1.0m. In the western portion of the site only, we encountered a layer of clay and/or sand to a maximum depth of 1.6m (geological unit not assigned in report). Beneath the Made Ground or sand/clay layer, we encountered chalk rubble to blocky chalk, or structureless chalk in a comminuted matrix, with occasional sand or flints. We proved chalk to our maximum drilling depth of 18m depth. No groundwater strike was recorded in any of the boreholes. No groundwater was encountered during the course of our previous investigation.
Hydrology	Surface Water Features	The nearest surface water feature is a pair of balancing ponds, located ~80 to the west.

Table Four: Summary of Desk Based Sensitivity Review

2 Infiltration Results

2.1 BRE 365 Requirements

The British Research Establishment Digest 365 (2016) (BRE 365) guidance document sets out the recommended procedure for undertaking soakaway testing and design. This guidance specifies that the following procedures must be adhered to:

- Tests must be completed a minimum of 1.0m above groundwater level;
- Record the water level in the test pits until they fall to a depth equivalent to less than 25% of the original effective storage volume;
- Each test pit should be filled and the infiltration rate recorded three times during either the same, or on consecutive days;
- The soakaway should discharge from full to half empty in a 24hour period.

Table Five: BRE Testing Requirements

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2.2 Details of Our Works

Activity		Description of Works
Service Clearance	Public Utility Drawings	We have obtained and reviewed public utility drawings from the relevant service provider. This provides information regarding major services that supply the site and neighbouring properties. Copies of these plans are included as Attachment Four.
	Underground Utilities Survey	We were informed no service excavations or installations have occurred at the site since our previous underground utility survey in August 2012, this survey was therefore considered acceptable to assist us with service avoidance during these works.
	On-site	Prior to excavating, all trial pit locations underwent a final service check using a Cable Avoidance Tool (CAT).
Infiltration Testing	Excavating Test Pits	Our infiltration testing was completed on 29th and 30th November 2022. We excavated three test pits (denoted TP101 to TP103) to 2m using a 5 tonne tracked excavator, at the locations shown in Figure One on the following page. Test pits were excavated in locations as close as possible to those requested by the client, subject to the presence of below ground services. Test pits were logged on-site by a suitably qualified technician. Copies of our Test pit logs are provided in Attachment Two.
	Filling of Test Pits	We filled all three test pits on three occasions over a two day period with fresh-water from a refillable water bowser. All test pits were backfilled with arisings at the end of our works. Copies of our test certificates are provided as Attachment Three.

Table Six: Our Methodologies

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2.3 Test Pit Locations

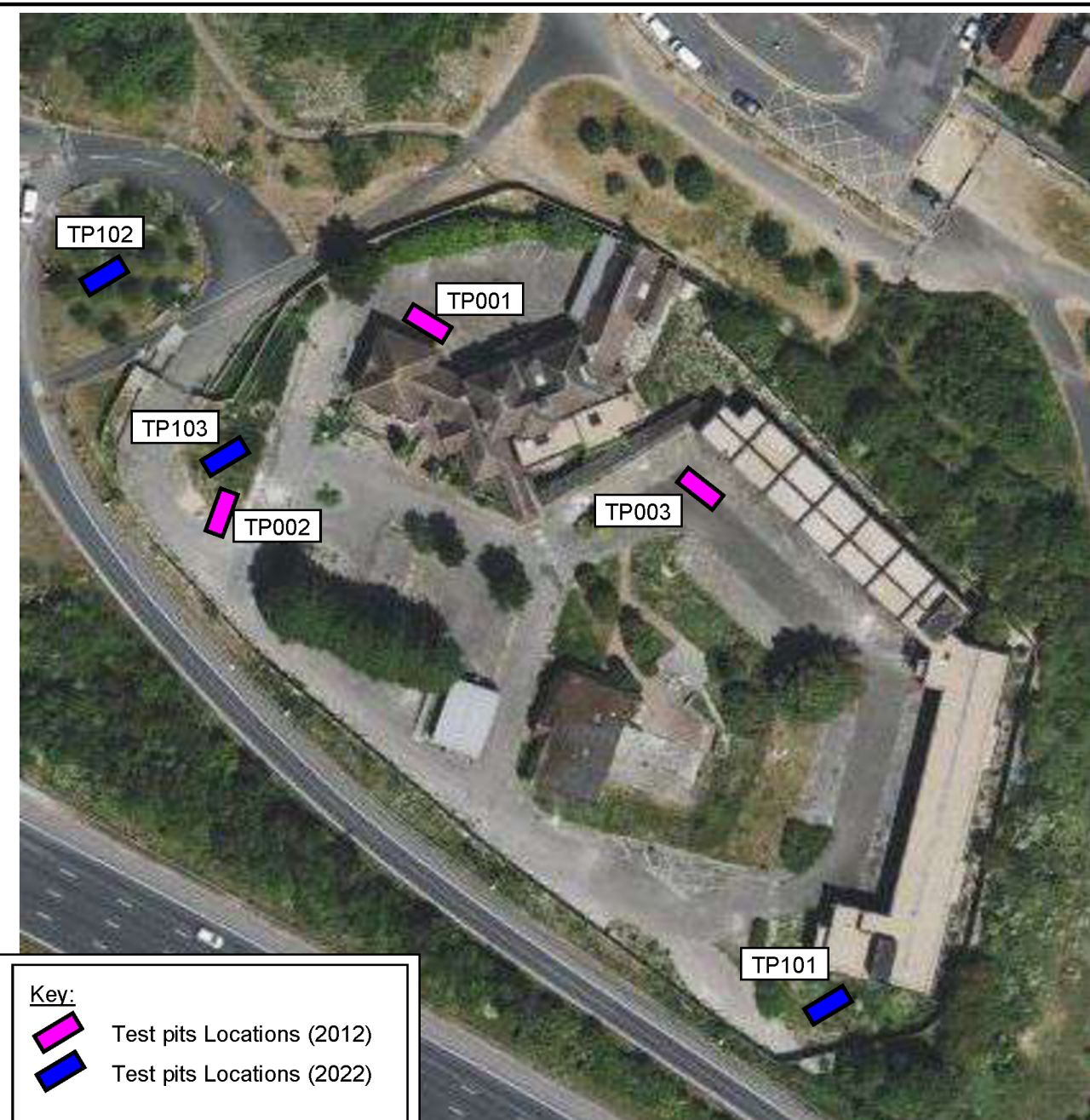


Figure One: Test Pit Locations

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2.4 Site Geology

	Unit	Description
Layer I	Made Ground	Topsoil overlying sandy blocky chalk held in sandy clayey matrix
Layer II	Head Deposits	Brown grey clayey SAND. Frequent sub-angular flints throughout.
Layer III	Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated)	Weak creamy white blocky chalk held in putty matrix with frequent sub-angular flints
	Depth to Base of Layer	
	TP101	TP102 TP103
Layer I	0.6	0.2 1.0
Layer IIa	>2.0	1.0 >2.0
Layer IIb	-	>2.0 -

All dimensions in metres below ground level

Table Seven: Soil Lithology

2.5 Groundwater Observations

No groundwater was encountered during the course of our works.

2.6 Infiltration Test Results

Location	Test Pit Dimension L x W x D (m)	Soil Type Tested	Soil Infiltration Rate (m/day)		
			First Fill	Second Fill	Third Fill
TP101	1.7 x 0.5 x 2.0	Clay	2.33	1.64	1.41
TP102	1.7 x 0.6 x 2.0	Chalk	11.64	13.26	14.09
TP103	1.75 x 0.5 x 2.0	Clay	2.68	1.21	2.23

Table Eight: Soakaway Test Results

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3 Conclusions

The results of our infiltration testing indicate the following:

- We have completed infiltration testing in three pits across the site to provide data to assist with developing a drainage strategy for the proposed development.
- Geology across the site was consistent with that encountered during our 2012 investigation and comprised a layer of Made Ground consisting of Topsoil overlying reworked chalk soils to a maximum depth of 1.0m. Beneath the Made Ground we identified Head Deposits, which were present as either sandy clay or clayey sand, to between 1.0m or in excess of 2.0m depth, overlying blocky chalk.
- No groundwater was encountered during the course of our works.
- We were able to complete three full test cycles in all three pits over a two day period, in compliance with BRE guidelines.
- Data from our most recent testing indicates that the use of soakaways are likely to be viable in the Head Deposit soils however we would recommend soakaway structures be installed directly into the chalk, which is present from shallow depths across large areas of the site (Ref.1), as we have consistently recorded the highest infiltration values in the chalk soils beneath the site

Your attention is drawn to the Notice to Interested Parties included as Attachment One.

Table Nine: Conclusions

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**ATTACHMENT ONE:
NOTICE TO INTERESTED PARTIES**

Client: BP Oil UK Limited And BP
Pulse, Chertsey Road, Sunbury On
Thames

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NOTICE TO INTERESTED PARTIES

The purpose of our work is to provide general information on the environmental And/OR geotechnical conditions existing at the site And related to soil And/OR groundwater. The Client Or others specified the scope of the investigation And the validity of our conclusions is limited by the scope of work specified. We are Not responsible for any such limitations Or omissions.

Where stated in this report, we have used information supplied by third parties. While we have evaluated As far As possible the validity Of this information, we cannot guarantee its accuracy In any way whatsoever.

No investigation technique is capable Of completely identifying all Of the contaminants that might be present In the soil Or groundwater under a site. Where specified In our report, we have examined the ground by constructing a number Of boreholes And/OR trial pits. We recovered samples Of soil And/OR groundwater from available exposures.

The depth And spacing Of our Sampling locations were selected To ensure With a reasonable probability that they would be representative Of the actual conditions across the whole site. However, safety considerations relating To existing site infrastructure may have restricted our ability To investigate all potential contaminant sources. Specifically, we were unable To investigate the soil And groundwater condition immediately adjacent To the underground structures And/OR buried services. These limitations must be borne In mind When considering the conclusions reached In this report.

Soil is intrinsically variable And the spread Of contaminants within the soil is therefore subject To a degree Of non-uniformity. For these reasons no sampling technique can completely eliminate the possibility Of obtaining samples that are Not representative Of the actual conditions. Our sampling techniques are intended To reduce the possibility To an acceptable level, within the limits imposed by the scope of the investigation.

Groundwater levels And soil vapour levels that we report were accurate at the time of the investigation. Groundwater And soil vapour levels are variable. Long term monitoring may be required to ensure that the levels recorded during our investigation are representative of long term And possible 'worst case' conditions. In accepting our recommendations and/or conclusions the Client acknowledges that further, more detailed investigation would allow a more accurate assessment of site conditions to be made and that this would reduce any consequential risk to the Client.

Our investigation was carried out to assess the significance of contamination resulting from use of the site as identified in this report. Unless we have indicated otherwise, no assessment of the potential impact of any other previous uses has been made. No investigation was carried out to determine whether or not any deleterious or hazardous materials (such as asbestos) have been used in the construction of the buildings present on the site. Unless otherwise stated no investigation or assessment has been made of the presence or otherwise of invasive plant species including but not limited to Japanese Knotweed.

Unless specifically stated otherwise, we have not assessed the effect of any proposed future construction activities on existing structures on or near to the site. Nor, unless stated otherwise, have we assessed the likely effect of trees on existing or proposed structures on or near the site.

We do not accept any responsibility for the cost of remedial works or other costs incurred in whatever way whatsoever as a result of any omissions, errors or other shortcomings in this report unless we have been given reasonable opportunity to verify ourselves that such faults exist and we have been given a reasonable opportunity to carry out works to remedy such faults ourselves using the most practicable means available to us. We do not accept liability for any consequential losses incurred by you while either we or others carry out any remedial works we deem necessary.

This report has been prepared for the Client, as specified on the cover page of this report. In accepting our recommendations and/or conclusions the Client accepts that the terms of our appointment were as detailed in the Proposal, or Proposals, that we provided to the Client before being appointed and that these terms supersede any other terms and/or conditions set out in any contracts agreed between ourselves and the Client, regardless of when such terms and/or conditions were agreed to by us and/or signed by us.

Use of, and reliance on, this report by other third parties will be at such third parties own risk, and we do not accept any liability or responsibility to them.

Neither the whole nor any part of this report, or any reference to it, may be included in any published document circular or statement or published in any way without our prior written approval.

This report and its contents, together with any supporting correspondence or other documentation, remain the property of Subadra Consulting Limited until paid for in full. The copyright to this report remains vested in Subadra Consulting Ltd at all times.

Client: BP Oil UK Limited And BP
Pulse, Chertsey Road, Sunbury On
Thames

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**ATTACHMENT TWO:
TEST PIT LOGS**

Borehole Log TP101

SUBADRA
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13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

Project Name	BP12954 Tollgate	Coordinates	
Date	30th November 2022	Ground Level	
Site Engineer	Megan Chan	Drilling Method	Excavator

Depth (m)	Well	Water Level	Log	Sample	Laboratory Analysis	Headspace (ppm)	SPT 'N' or Su (kPa)	Description
1								0.00m - 0.20m Made Ground Topsoil overlying blocky chalk in sandy clayey matrix.
2								0.20m - 2.00m Head Deposits LOOSE TO MEDIUM DENSE brown slightly clayey SAND.
3								Borehole terminated at 2.00m
4								
5								
6								
7								
8								
9								
10								

 Prism.NET www.prismerp.co.uk	Well Diameter		Depth of Borehole	2.00m
	Well Casing Length		Depth to Groundwater	Dry
	Well Screen Length		Page	One of One

Borehole Log TP102

SUBADRA
Environmental - Geotechnical - Laboratory - Foundations
13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

Project Name	BP12954 Tollgate	Coordinates	
Date	30th November 2022	Ground Level	
Site Engineer	Megan Chan	Drilling Method	Excavator

Depth (m)	Well	Water Level	Log	Sample	Laboratory Analysis	Headspace (ppm)	SPT 'N' or Su (kPa)	Description
0.00								0.00m - 0.30m Made Ground Topsoil.
0.30								0.30m - 1.00m Head Deposits FIRM brown CLAY. Frequent sub-angular flints throughout.
1.00								1.00m - 2.00m Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated) (C4) - WEAK blocky CHALK. Blocky chalk held in putty matrix.
2.00								Borehole terminated at 2.00m
3.00								
4.00								
5.00								
6.00								
7.00								
8.00								
9.00								
10.00								

 Prism.NET www.prismerp.co.uk	Well Diameter		Depth of Borehole	2.00m
	Well Casing Length		Depth to Groundwater	
	Well Screen Length		Page	One of One

Borehole Log TP103

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13 Triangle Business Park, Stoke Mandeville, HP22 5BL
Tel: 01296 739400 Email: consultants@subadra.com

Project Name	BP12954 Tollgate	Coordinates	
Date	30th November 2022	Ground Level	
Site Engineer	Megan Chan	Drilling Method	Excavator

Depth (m)	Well	Water Level	Log	Sample	Laboratory Analysis	Headspace (ppm)	SPT 'N' or Su (kPa)	Description
1								0.00m - 1.00m Made Ground Topsoil overlying blocky chalk in sandyclayey matrix.
2								1.00m - 2.00m Head Deposits LOOSE TO MEDIUM DENSE SAND. Frequent chalk flints throughout.
3								Borehole terminated at 2.00m
4								
5								
6								
7								
8								
9								
10								

 Prism.NET www.prismerp.co.uk	Well Diameter		Depth of Borehole	2.00m
	Well Casing Length		Depth to Groundwater	
	Well Screen Length		Page	One of One

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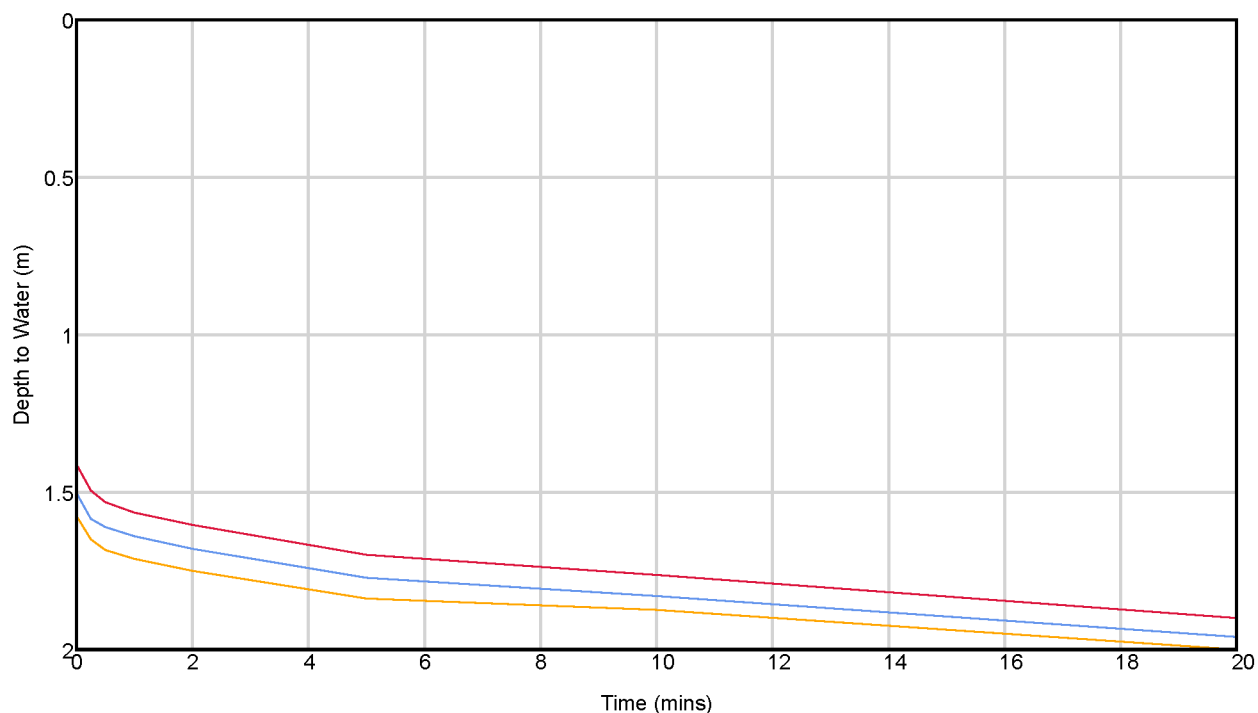
**ATTACHMENT THREE:
INFILTRATION TEST DATA**

Client: BP Oil UK Limited

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Soakaway Test - TP101

Project Name	Tollgate, Gravesend	Date	30th November 2022
Project Code	BP12954	Technician	Megan Chan
Test	BRE Special Digest 365	Permeability	11.637m/day

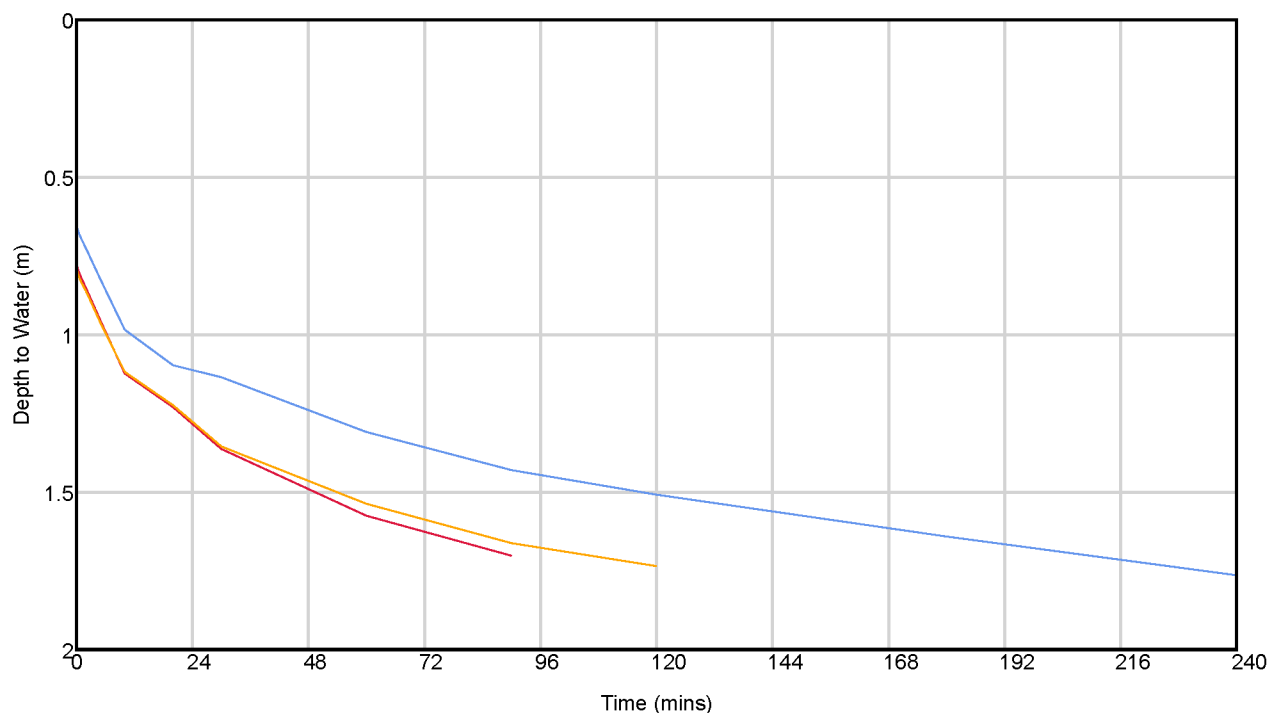


First Fill		Second Fill		Third Fill	
Time (mins)	Depth to Water (m)	Time (mins)	Depth to Water (m)	Time (mins)	Depth to Water (m)
0.00	1.411	0.00	1.502	0.00	1.575
0.25	1.495	0.25	1.585	0.25	1.650
0.50	1.532	0.50	1.611	0.50	1.684
1.00	1.565	1.00	1.640	1.00	1.712
2.00	1.604	2.00	1.680	2.00	1.750
5.00	1.699	5.00	1.772	5.00	1.838
10.00	1.763	10.00	1.830	10.00	1.874
20.00	1.900	20.00	1.960	20.00	2.000
T75 (mins)	0.90	T75 (mins)	0.77	T75 (mins)	0.48
T25 (mins)	16.55	T25 (mins)	13.50	T25 (mins)	11.57
Permeability (m/day)	11.64	Permeability (m/day)	13.26	Permeability (m/day)	14.09

 Prism.NET www.prismerp.co.uk	Pit Length	1.70m	Backfill	None
	Pit Width	0.60m	Number of Cycles	Three
	Pit Depth	2.00m	Page	One of One

Soakaway Test - TP102

Project Name	Tollgate, Gravesend	Date	30th November 2022
Project Code	BP12954	Technician	Megan Chan
Test	BRE Special Digest 365	Permeability	1.206m/day



First Fill		Second Fill		Third Fill	
Time (mins)	Depth to Water (m)	Time (mins)	Depth to Water (m)	Time (mins)	Depth to Water (m)
0.00	0.773	0.00	0.651	0.00	0.788
0.25	0.788	0.25	0.665	0.25	0.802
0.50	0.800	0.50	0.677	0.50	0.815
1.00	0.819	1.00	0.695	1.00	0.833
2.00	0.852	2.00	0.726	2.00	0.862
5.00	0.956	5.00	0.825	5.00	0.963
10.00	1.123	10.00	0.984	10.00	1.118
20.00	1.230	20.00	1.097	20.00	1.224
30.00	1.363	30.00	1.135	30.00	1.355
60.00	1.575	60.00	1.309	60.00	1.537
90.00	1.702	90.00	1.430	90.00	1.662
		120.00	1.508	120.00	1.735
		180.00	1.641		

 Prism.NET www.prismerp.co.uk	Pit Length	1.75m	Backfill	None
	Pit Width	0.50m	Number of Cycles	Three
	Pit Depth	2.00m	Page	One of Two

Soakaway Test - TP102

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Tel: 01296 739400 Email: consultants@subadra.com

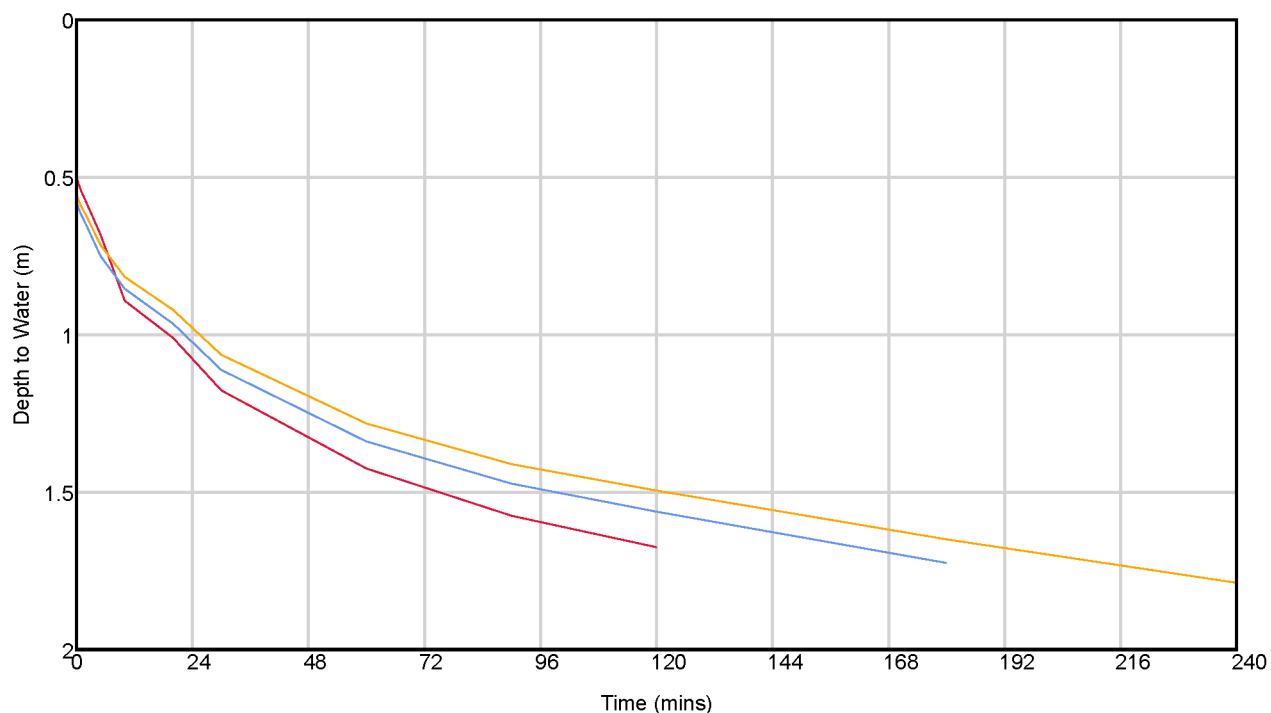
Project Name	Tollgate, Gravesend	Date	30th November 2022
Project Code	BP12954	Technician	Megan Chan
Test	BRE Special Digest 365	Permeability	1.206m/day

		240.00	1.764		
T75 (mins)	8.71	T75 (mins)	10.38	T75 (mins)	9.13
T25 (mins)	87.93	T25 (mins)	190.61	T25 (mins)	104.38
Permeability (m/day)	2.68	Permeability (m/day)	1.21	Permeability (m/day)	2.23

 Prism.NET www.prismerp.co.uk	Pit Length	1.75m	Backfill	None
	Pit Width	0.50m	Number of Cycles	Three
	Pit Depth	2.00m	Page	Two of Two

Soakaway Test - TP103

Project Name	Tollgate, Gravesend	Date	30th November 2022
Project Code	BP12954	Technician	Megan Chan
Test	BRE Special Digest 365	Permeability	1.408m/day



First Fill		Second Fill		Third Fill	
Time (mins)	Depth to Water (m)	Time (mins)	Depth to Water (m)	Time (mins)	Depth to Water (m)
0.00	0.494	0.00	0.574	0.00	0.550
0.25	0.510	0.25	0.588	0.25	0.564
0.50	0.523	0.50	0.600	0.50	0.575
1.00	0.544	1.00	0.619	1.00	0.592
2.00	0.578	2.00	0.650	2.00	0.621
5.00	0.682	5.00	0.750	5.00	0.715
10.00	0.892	10.00	0.854	10.00	0.816
20.00	1.010	20.00	0.965	20.00	0.921
30.00	1.177	30.00	1.112	30.00	1.064
60.00	1.425	60.00	1.339	60.00	1.282
90.00	1.575	90.00	1.473	90.00	1.411
120.00	1.675	120.00	1.562	120.00	1.495
		180.00	1.725	180.00	1.650

 Prism.NET www.prismerp.co.uk	Pit Length	1.70m	Backfill	None
	Pit Width	0.50m	Number of Cycles	Three
	Pit Depth	2.00m	Page	One of Two

Soakaway Test - TP103

Project Name	Tollgate, Gravesend	Date	30th November 2022
Project Code	BP12954	Technician	Megan Chan
Test	BRE Special Digest 365	Permeability	1.408m/day

				240.00	1.788
T75 (mins)	9.49	T75 (mins)	16.89	T75 (mins)	19.19
T25 (mins)	104.55	T25 (mins)	150.00	T25 (mins)	175.16
Permeability (m/day)	2.33	Permeability (m/day)	1.64	Permeability (m/day)	1.41

 Prism.NET www.prismerp.co.uk	Pit Length	1.70m	Backfill	None
	Pit Width	0.50m	Number of Cycles	Three
	Pit Depth	2.00m	Page	Two of Two

Tollgate, Gravesend

SUBADRA

Environmental - Geotechnical - Laboratory - Foundations

13 Triangle Business Park, Stoke Mandeville, HP22 5BL

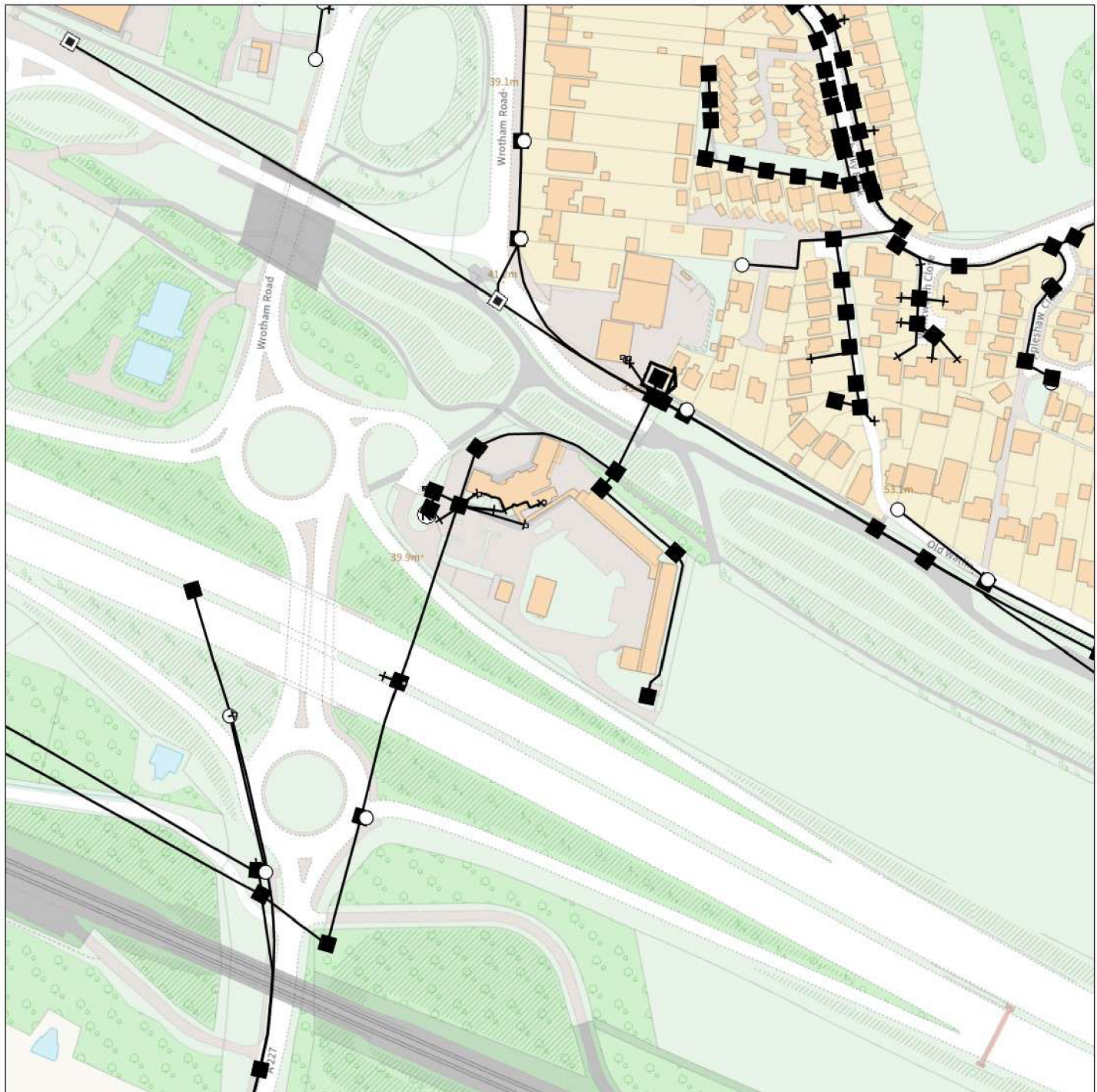
Tel: 01296 739400 Email: consultants@subadra.com

**ATTACHMENT FOUR:
PUBLIC UTILITY DRAWINGS**

Client: BP Oil UK Limited

Report	BP12954 CL 007
Date	December 2022
Page	Attachment Four - 1

Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.



openreach

CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday - Friday 08.00 to 17.00)
www.openreach.co.uk/cbyd

Accidents happen

If you do damage any Openreach equipment please let us know by calling 0800 023 2023 (opt 1 + opt 1) and we can get it fixed ASAP

KEY TO BT SYMBOLS

	Planned	Live	Change Of State	+	Hatchings	
PCP			Split Coupling		Built	
Pole			Duct Tee		Planned	
Box			Building		Inferred	
Manhole			Kiosk		Duct	
Cabinet			Other proposed plant is shown using dashed lines. BT Symbols not listed above may be disregarded. Existing BT Plant may not be recorded. Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.			
	Pending Add	In Place	Pending Remove	Not In Use		
Power Cable						
Power Duct				N/A		

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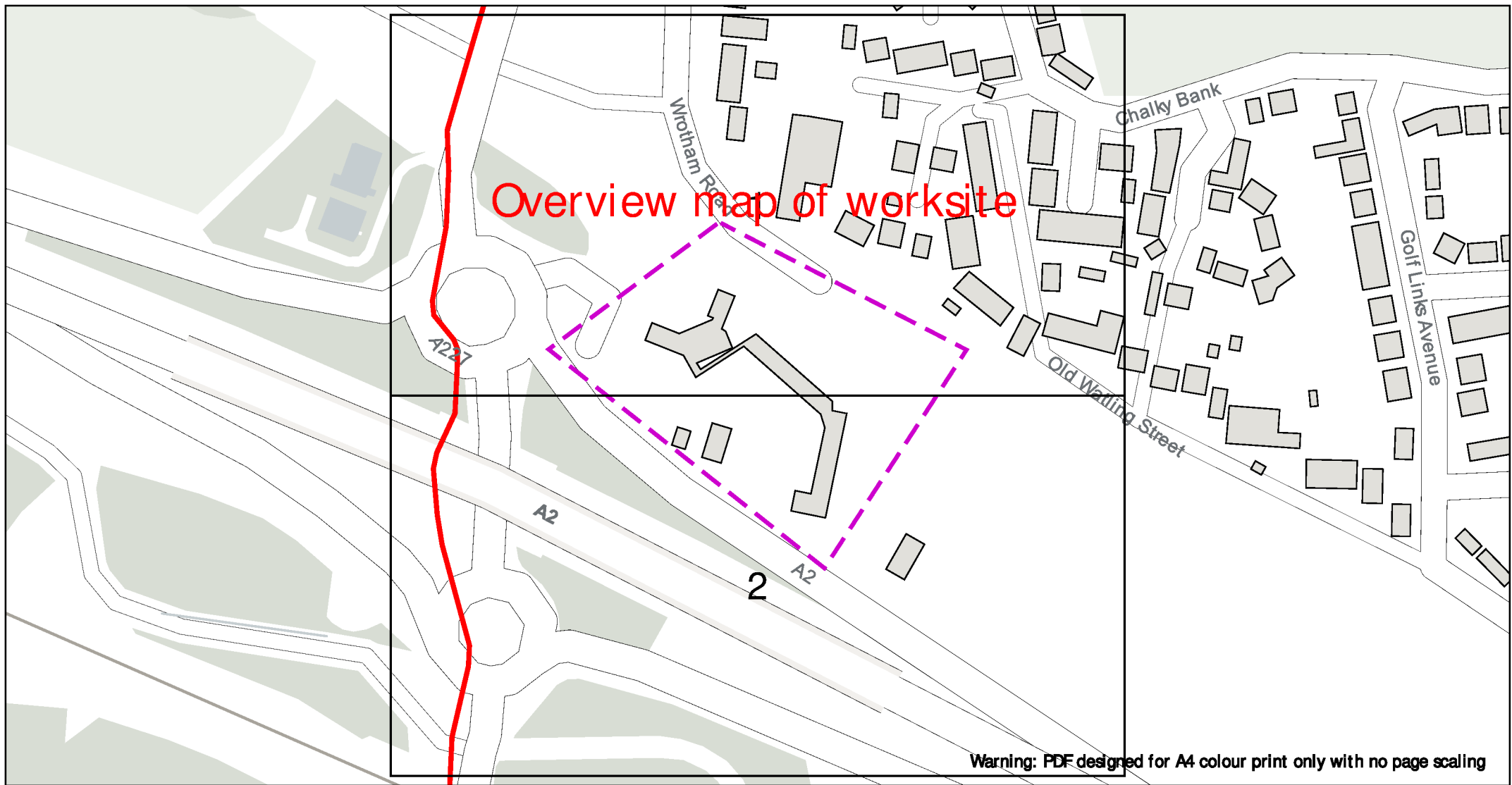
BT Ref : NTE01289U

Map Reference : (centre) TQ6424671225

Easting/Northing : (centre) 564246,171225

Issued : 28/11/2022 13:28:24

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk



Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.



Date Requested: 28/ 11/ 2022
Job Reference: 27754640
Site Location: 564162 171143
Requested by:
Ms Gillian Cameron
Your Scheme/ Reference:
Tolgate

The information on this document is proprietary and shall not be used, copied, reproduced or disclosed in whole or in part without written consent of EXA. The location of EXA's apparatus is indicated on the plan for general guidance but the exact location may vary from that shown. EXA cannot guarantee the accuracy of this document and Safe Digging Practices should always be used to identify the exact location of any utility's plant. EXA accept no liability for any errors or omissions.

Scale: 1:2563 (When plotted at A4)

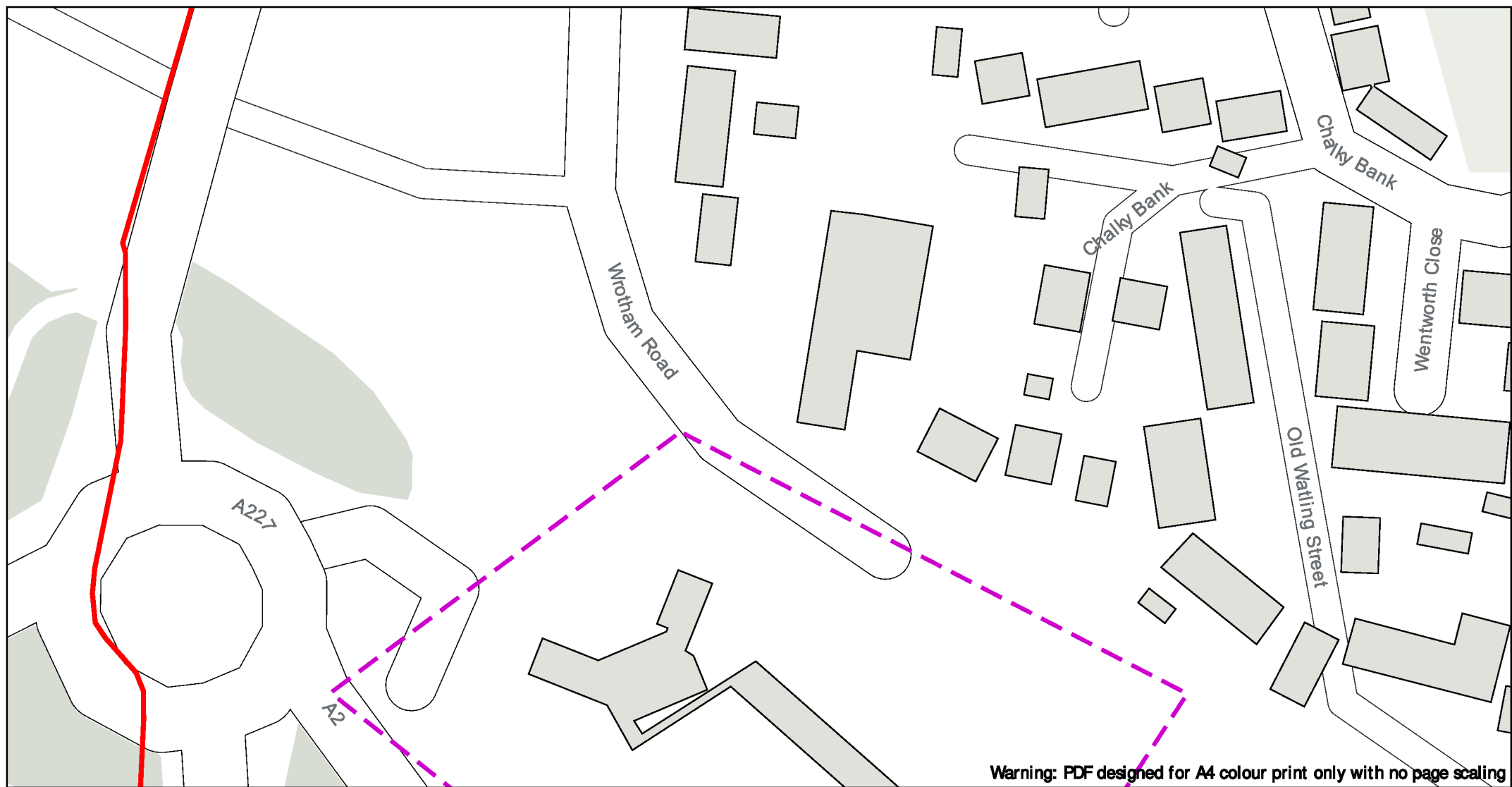
EXA Route

In Emergency Call: +3531 (0) 8673 600 Option 1

Southport Business Park
Wight Moss Way
Southport, PR8 4HQ
United Kingdom

+44 (0) 7970 775 310
Michael.Hayward@exainfra.net
Global.Operations@exainfra.net

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Warning: PDF designed for A4 colour print only with no page scaling

0 50m Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.



Date Requested: 28/ 11/ 2022
Job Reference: 27754640
Site Location: 564162 171143
Requested by:
Ms Gillian Cameron
Your Scheme/ Reference:
Tolgate

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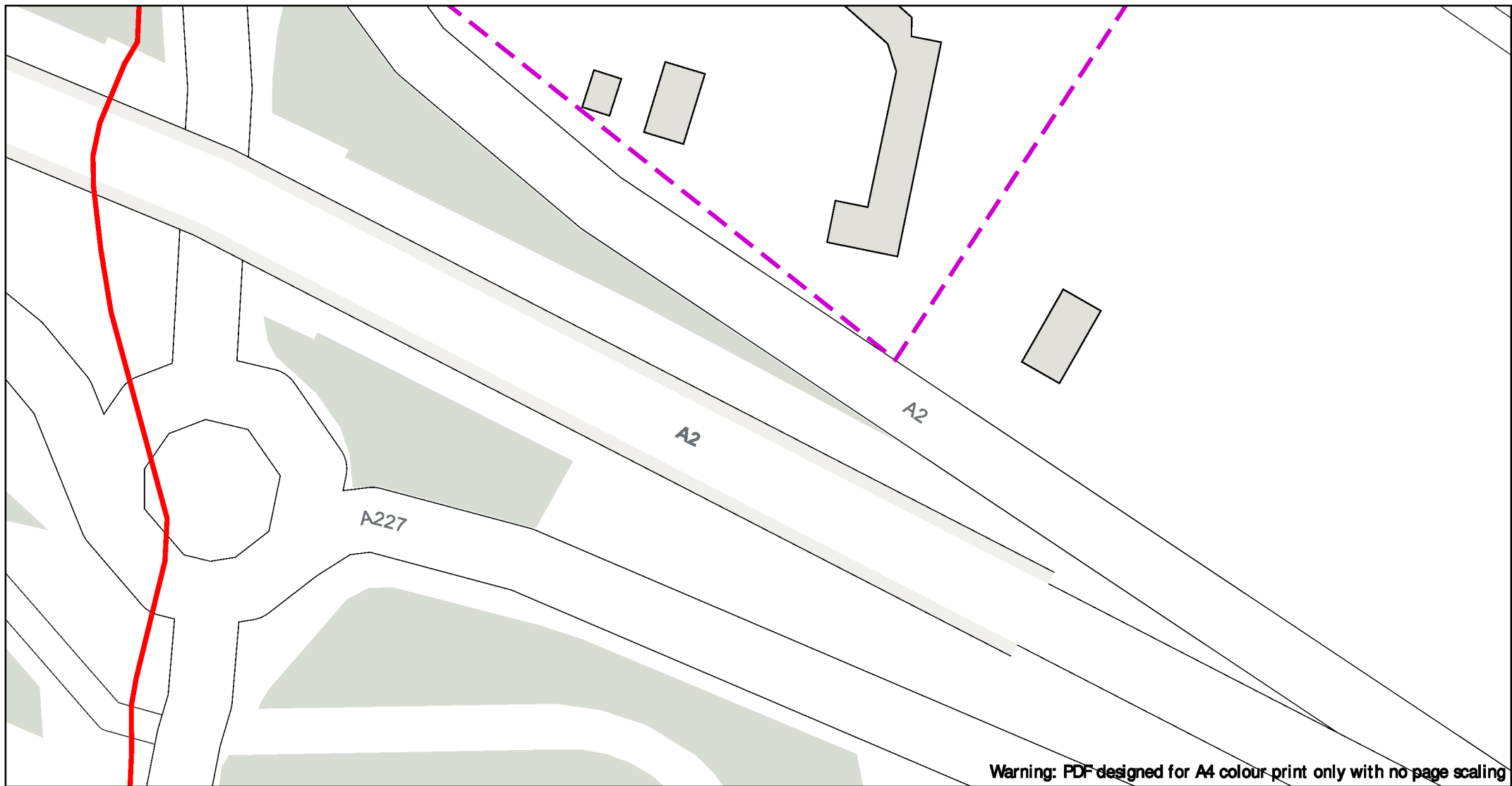
Scale: 1:1250 (When plotted at A4)

EXA Route

In Emergency Call: +3531 (0) 8673 600 Option 1

Southport Business Park
Wight Moss Way
Southport, PR8 4HQ
United Kingdom

+44 (0) 7970 775 310
Michael.Hayward@exainfra.net
Global.Operations@exainfra.net



0 50m

Dig Sites

Area:



Line:



The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.



Date Requested: 28/ 11/ 2022
Job Reference: 27754640
Site Location: 564162 171143
Requested by:
Ms Gillian Cameron
Your Scheme/ Reference:
Tolgate

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Scale: 1:1250 (When plotted at A4)



EXA Route

In Emergency Call: +3531 (0) 8673 600 Option 1

Southport Business Park
Wight Moss Way
Southport, PR8 4HQ
United Kingdom
+44 (0) 7970 775 310
Michael.Hayward@exainfra.net
Global.Operations@exainfra.net

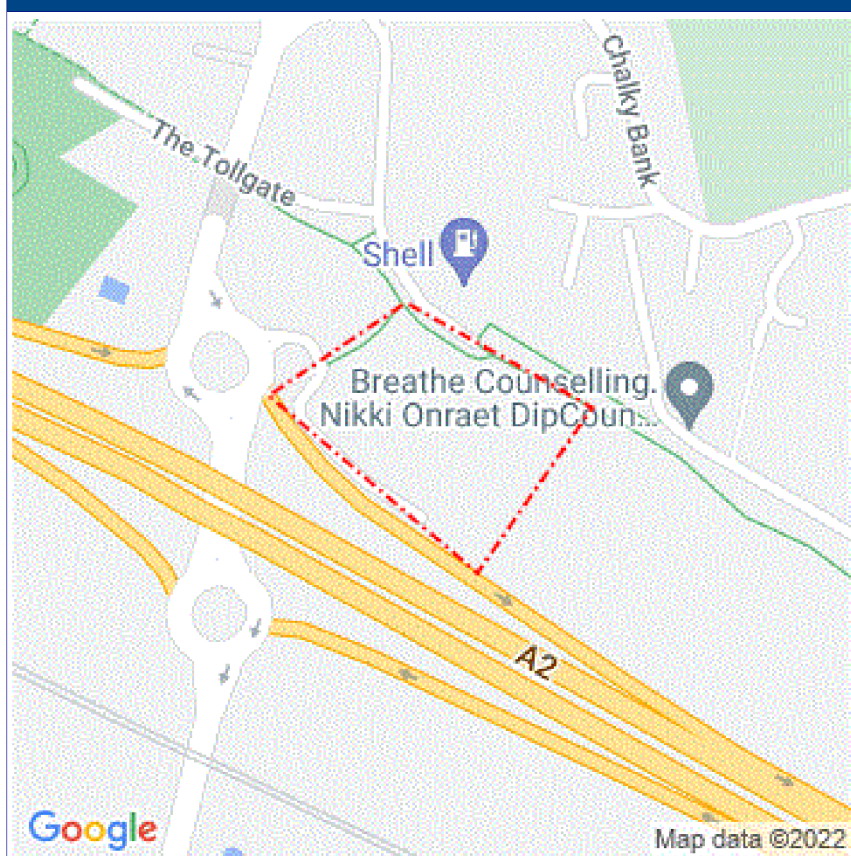
Enquirer

Name	Ms Gillian Cameron	Phone	01296 739400
Company	Subadra Consulting Ltd	Mobile	Not Supplied
Address	Unit 13 Triangle Business Park Wendover Road Stoke Mandeville Buckinghamshire HP12 4RQ		
Email	camerong@subadra.com		

Enquiry Details

Scheme/Reference	Tolgate		
Enquiry type	Initial Enquiry	Work category	Development Projects
Start date	29/11/2022	Work type	Commercial/industrial
End date	30/11/2022	Site size	0 metres square
Searched location	XY= 564246, 171225	Work type buffer*	75 metres
Confirmed location	564295 171143		
Site Contact Name	Not Supplied	Site Phone No	Not Supplied
Description of Works			

* The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.

Site Map


Asset Owners

Terms and Conditions. Please note that this enquiry is subject always to our standard terms and conditions available at www.lineasearchbeforeudig.co.uk ("Terms of Use") and the disclaimer at the end of this document. Please note that in the event of any conflict or ambiguity between the terms of this Enquiry Confirmation and the Terms of Use, the Terms of Use shall take precedence.

Notes. Please ensure your contact details are correct and up to date on the system in case the LSBUD Members need to contact you.

Validity and search criteria. The results of this enquiry are based on the confirmed information you entered and are valid only as at the date of the enquiry. It is your responsibility to ensure that the Enquiry Details are correct, and LineasearchbeforeUdig accepts no responsibility for any errors or omissions in the Enquiry Details or any consequences thereof. LSBUD Members update their asset information on a regular basis so you are advised to consider this when undertaking any works. It is your responsibility to choose the period of time after which you need to resubmit any enquiry but the maximum time (after which your enquiry will no longer be dealt with by the LSBUD Helpdesk and LSBUD Members) is 28 days. If any details of the enquiry change, particularly including, but not limited to, the location of the work, then a further enquiry must be made.

Asset Owners & Responses. Please note the enquiry results include the following:

1. "LSBUD Members" who are asset owners who have registered their assets on the LSBUD service.
2. "Non LSBUD Members" are asset owners who have not registered their assets on the LSBUD service but LSBUD is aware of their existence. Please note that there could be other asset owners within your search area.

Below are three lists of asset owners:

1. **LSBUD Members who have assets registered within your search area. ("Affected")**
 - a. **These LSBUD Members will either:**
 - i. **Ask for further information ("Email Additional Info" noted in status).** The additional information includes: Site contact name and number, Location plan, Detailed plan (minimum scale 1:2500), Cross sectional drawings (if available), Work Specification.
 - ii. **Respond directly to you ("Await Response").** In this response they may either send plans directly to you or ask for further information before being able to do so, particularly if any payments or authorisations are required.
2. **LSBUD Members who do not have assets registered within your search area. ("Not Affected")**
3. **Non LSBUD Members who may have assets within your search area.** Please note that this list is not exhaustive and all details are provided as a guide only. It is your responsibility to identify and consult with all asset owners before proceeding.

LSBUD Members who have assets registered on the LSBUD service within the vicinity of your search area.

List of affected LSBUD members

Asset Owner	Phone/Email	Emergency Only	Status
EXA Infrastructure	07970775310	02070259650	Await response
National Grid Electricity Transmission	08000014282	0800404090	Await response
National Grid Gas Transmission	01926654844	0800111999	Await response
Neos Networks	03453053337	03453053337	Await response
SGN	08009121722	0800111999	Await response
UK Power Networks	08000565866	08000565866	Await response

LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area. Please be aware that LSBUD Members make regular changes to their assets and this list may vary for new enquiries in the same area.

List of not affected LSBUD members

Angus Energy	AWE Pipeline	B & D Energy Limited
Balfour Beatty Investments Limited	BOC Limited (A Member of the Linde Group)	Box Broadband
BP Exploration Operating Company Limited	BPA	Cadent Gas
Carrington Gas Pipeline	CATS Pipeline c/o Wood Group PSN	Cemex
Centrica Storage Ltd	CNG Services Ltd	Concept Solutions People Ltd
ConocoPhillips (UK) Teesside Operator Ltd	D.S.Smith	Diamond Transmission Corporation
DIO (MOD Abandoned Pipelines)	DIO (MOD Live Pipelines)	E.ON UK CHP Limited
EDF Energy Renewables Ltd	EirGrid	Eleclink Limited
Electricity North West Limited	Energy Assets Networks	ENI & Himor c/o Penspen Ltd
EnQuest NNS Limited	EP Langage Limited	ESP Utilities Group
ESSAR	Esso Petroleum Company Limited	euNetworks Fiber UK Ltd
Exolum Pipeline System	Fulcrum Electricity Assets Limited	Fulcrum Pipelines Limited
Gamma	Gas Networks Ireland (UK)	Gateshead Energy Company
Gigaclear Ltd	Harbour Energy	Heathrow Airport LTD
Humbly Grove Energy	IGas Energy	INEOS FPS Pipelines
INEOS Manufacturing (Scotland and TSEP)	INOVYN ChlorVinyls Limited	INOVYN Enterprises Limited
Intergen (Coryton Energy or Spalding Energy)	Jurassic Fibre Ltd	Last Mile
Mainline Pipelines Limited	Manchester Jetline Limited	Manx Cable Company
Marchwood Power Ltd (Gas Pipeline)	Melbourn Solar Limited	Moray East Offshore Windfarm
MUA Group Limited	National Grid Electricity Distribution	Northumbrian Water Group
NPower CHP Pipelines	NTT Global Data Centers EMEA UK Ltd	NYnet Ltd
Ogi	Oikos Storage Limited	Ørsted
Palm Paper Ltd	Perenco UK Limited (Purbeck Southampton Pipeline)	Petroineos
Phillips 66	Portsmouth Water	Premier Transmission Ltd (SNIP)
Redundant Pipelines - LPDA	RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station)	RWEnpower (Little Barford and South Haven)
SABIC UK Petrochemicals	SAS Utility Services Ltd	Scottish and Southern Electricity Networks

Scottish Power Generation	Seabank Power Ltd	SES Water
Shell	Shell NOP	SP Energy Networks
Squire Energy Networks	SSE Generation Ltd	SSE Transmission
SSE Utility Solutions Limited	Tata Communications (c/o JSM Construction Ltd)	Total Colnbrook Pipelines
Total Finaline Pipelines	Transmission Capital	Uniper UK Ltd
University of Cambridge Granta Backbone Network	Vattenfall	Veolia ES SELCHP Limited
Veolia ES Sheffield Ltd	Voneus Limited	VPI Power Limited
Wales and West Utilities	West of Duddon Sands Transmission Ltd	Westminster City Council
Zayo Group UK Ltd c/o JSM Group Ltd		

The following Non-LSBUD Members may have assets in your search area. It is **YOUR RESPONSIBILITY** to contact them before proceeding. Please be aware this list is not exhaustive and it is your responsibility to identify and contact all asset owners within your search area.

Non-LSBUD members (Asset owners not registered on LSBUD)			
Asset Owner	Preferred contact method	Phone	Status
Anglian Water	http://www.digdat.co.uk	01480323891	Not Notified
BT	https://www.swns.bt.com/pls/mbe/welcome.home	08000232023	Not Notified
CityFibre	asset.team@cityfibre.com	033 3150 7282	Not Notified
Colt	plantenquiries@catelecomuk.com	01227768427	Not Notified
Equans	nrswa.uk@equans.com	0800 130 3600	Not Notified
GTC	https://pe.gtc-uk.co.uk/PlantEnqMembership	01359240363	Not Notified
Lumen Technologies	plantenquiries@instalcom.co.uk	02087314613	Not Notified
Mobile Broadband Network Limited	mbnl.plant.enquiries@turntown.com	01212 621 100	Not Notified
Sky UK Limited	nrswa@sky.uk	02070323234	Not Notified
Sota	SOTA.plantenquiries@instalcom.co.uk		Not Notified
Southern Water	www.digdat.co.uk	08452700212	Not Notified
Utility assets Ltd	assetrecords@utilityassets.co.uk		Not Notified
Verizon Business	osp-team@uk.verizonbusiness.com	01293611736	Not Notified
Virgin Media	http://www.digdat.co.uk	08708883116	Not Notified
Vodafone	osm.enquiries@atkinsglobal.com	01454662881	Not Notified

Disclaimer

Please refer to LineasearchbeforeUdig's Terms of Use for full terms of use available at www.lineasearchbeforeudig.co.uk

The results of this Enquiry are personal to the Enquirer and shall not be shared with or relied upon by any other party. The asset information on which the Enquiry results are based has been provided by LSBUD Members, therefore LineasearchbeforeUdig will provide no guarantee that such information is accurate or reliable nor does it monitor such asset information for accuracy and reliability going forward. There may also be asset owners which do not participate in the enquiry service operated by LineasearchbeforeUdig, including but not exclusively those set out above. Therefore, LineasearchbeforeUdig cannot make any representation or give any guarantee or warranty as to the completeness of the information contained in the enquiry results or accept any responsibility for the accuracy of the mapping images used. LineasearchbeforeUdig and its employees, agents and consultants accept no liability (save that nothing in this Enquiry Confirmation excludes or limits our liability for death or personal injury arising from our negligence, or our fraud or fraudulent misrepresentation, or any other liability that cannot be excluded or limited by English law) arising in respect thereof or in any other way for errors or omissions including responsibility to any person by reason of negligence.

Our Ref: 27754640 Tolgate

Monday, 28 November 2022

Gillian Cameron
Unit 13 Triangle Business Park Wendover Road

Buckinghamshire
HP12 4RQ

National Grid House
Warwick Technology Park
Gallows Hill, Warwick
CV34 6DA

Electricity Emergency Number:
0800 40 40 90*
*Available 24 hours, 7 days/week.
Calls may be recorded and monitored.
www.nationalgrid.com

Asset Protection
Gas Transmission
National Grid
Warwick
Email: assetprotection@nationalgrid.com

National Grid Electricity – No Assets Affected

Dear Sir/ Madam,

An assessment has been carried out with respect to NGET apparatus and the proposed work location. Based on the search area entered in the LSBUD system for assessment the search area has been found to not affect any NGET apparatus.

Please note this response and any attached map(s) are valid for 28 days

Yours sincerely

Asset Protection Team

Your Responsibilities and Obligations

It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near National Grid Electricity Transmission plc's apparatus, as legally required including under the Construction (Design and Management) Regulations 2015.

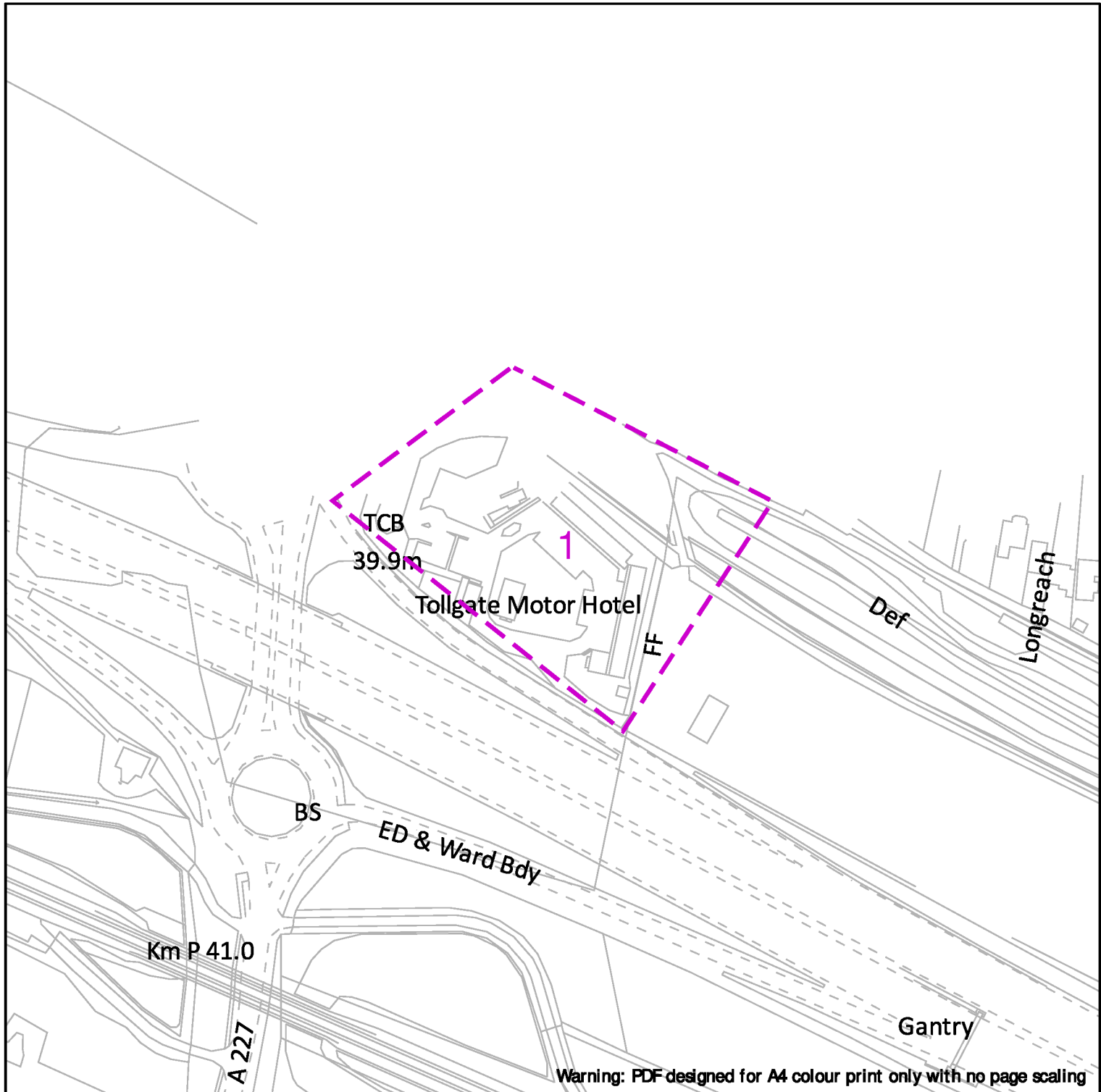
The assessment solely relates to the physical apparatus of National Grid Electricity Transmission plc (NGET)

It does **NOT** cover:

- Apparatus owned by other people or organisations, e.g., Cadent, other gas distribution operators, local electricity companies, other utilities, landowners etc
- Apparatus owned by National Grid Gas plc.
- NGET's legal rights and interests (such as those contained in easements or wayleaves) in or concerning the land, which restrict activity in proximity to NGET's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and/or from HM Land Registry and/or you should seek legal advice. If in doubt, contact Asset Protection.

It is **YOUR** responsibility to consider whether any of the items or factors listed above may be present or relevant and if they could be affected by your proposed activities.

NGET or its agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability, which is prohibited by law, nor does it supersede the express terms of any related agreements.



nationalgrid

NationalGrid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

AssetProtection@NationalGrid.com

100m

EXTREME CAUTION - HIGH VOLTAGE
****RISK OF DEATH OR SERIOUS INJURY****

Dig Sites

Area:

Line:



Underground Cables



Overhead Lines



Fibre Cables

Date Requested: 28/ 11/ 2022
Job Reference: 27754640
Site Location: 564295 171143
Requested by: Ms Gillian Cameron
Your Scheme/ Reference: Tollgate

IMPORTANT NOTICES

This plan shows those pipes owned by National Grid Electricity Transmission plc in its role as a Licensed Electricity Transporter (ET). Electricity cables owned by other ETs, or otherwise privately owned, may be present in this area. Information with regards to such cables should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Ancillary equipment such as cooling systems and communication cables are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Electricity Transmission plc or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of cables and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near electricity apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

National Grid Electricity Emergency Number: 0800 40 40 90

Available 24 hours, 7 days/week. Calls may be recorded and monitored

Scale: 1:2500 (When plotted at A4)

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ENQUIRY SUMMARY

Received Date

28/11/2022 13:27

Work Start Date

29/11/2022

Your Reference

Tolgate

Location

Centre Point: 564295 171143

X Extent:

Y Extent:

Postcode: DA117NR

Map Options

Paper Size: A4

Orientation: PORTRAIT

Scale: 1:2500

Real World Extents: 201m x 166m

Enquirer Details

Organisation Name: Subadra Consulting Ltd

Contact Name: Gillian Cameron

Email Address: camerong@subadra.com

Telephone: 01296 739400

Address: Unit 13 Triangle Business Park Wendover Road, , Buckinghamshire, HP12 4RQ

Enquiry Type

Initial Enquiry

Activity Type

Development Projects

Work Types

Commercial/industrial

Notes/Works Description (if supplied)

Site Contact Name (if supplied)

Site Contact Number (if supplied)

Our Ref: 27754640 Tolgate

Monday, 28 November 2022

Gillian Cameron
Unit 13 Triangle Business Park Wendover Road
Stoke Mandeville
Buckinghamshire
HP12 4RQ

Asset Protection
Gas Transmission
National Grid
Warwick
CV34 6DA
Email: assetprotection@nationalgrid.com

National Grid Gas – Moderate Response Letter

Dear Sir/ Madam,

An assessment has been carried out with respect to National Grid Gas Transmission plc's apparatus and the proposed work location. Based on the location entered into the system for assessment the area has been found to be outside the High Risk zone from National Grid Gas Transmission plc's apparatus and can proceed. Should the work area change or type of activity being undertaken, a new enquiry shall be submitted for assessment.

Please carefully read the guidance notes on the next pages.

It is **YOUR** responsibility to take into account whether you are required to or would benefit from referring to the HSE Land Use Planning App (LUP), available from HSE's website. (Please note for some works this is a requirement for them to take place) More information on the LUP is available at <https://www.hse.gov.uk/landuseplanning/>

Should the work area change, evidence of this **must** be submitted to National Grid prior to receiving a formal response.

You will have received pipeline route drawings if your enquiry is located within the Medium Risk zone from National Grid Gas Transmission buried assets. Please familiarise yourself with the location of these assets and should the works location change a new enquiry shall be submitted for assessment.

Please note this response and any attached map(s) are valid for 28 days.

Yours sincerely

Asset Protection Team

Your Responsibilities and Obligations

The "Assessment" Section below outlines the detailed requirements that must be followed when planning or undertaking your activities at this location.

It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near National Grid Gas Transmission plc's apparatus, e.g. as contained within the Construction (Design and Management) Regulations.

This assessment solely relates to National Grid Gas Transmission plc (NGGT)

This assessment does **NOT** include:

- National Grid's legal interest (easements or wayleaves) in the land which restricts activity in proximity to National Grid's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and if in doubt contact Asset Protection.
- Recently installed apparatus
- Apparatus owned by other organisations, e.g. Cadent, National Grid Electricity Transmission plc, other gas distribution operators, local electricity companies, other utilities, etc.

It is **YOUR** responsibility to take into account whether the items listed above may be present and if they could be affected by your proposed activities.

This communication does not constitute any formal agreement or consent for any proposed development work; either generally or with regard to National Grid Gas Transmission plc easements or wayleaves nor any planning or building regulations applications.

National Grid Gas Transmission plc or their agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability where prohibited by the law nor does it supersede the express terms of any related agreements.

If you require further assistance please contact the Asset Protection team via e-mail (assetprotection@nationalgrid.com) or via the contact details at the top of this response.

Requirements

National High Pressure Gas Pipelines

BEFORE carrying out any work you must:

- Ensure that no works are undertaken in the vicinity of our gas pipelines and that no heavy plant, machinery or vehicles cross the route of the pipeline until detailed consultation has taken place.
- Carefully read these requirements including the attached guidance documents and maps showing the location of apparatus.
- Contact the landowner and ensure any proposed works in private land do not infringe National Grid's legal rights (i.e. easements or wayleaves). If the works are in the road or footpath the relevant local authority should be contacted.
- Ensure that all persons, including direct labour and contractors, working for you on or near National Grid's apparatus follow the requirements of the HSE Guidance Notes HSG47 - 'Avoiding Danger from Underground Services' This guidance can be downloaded free of charge at <http://www.hse.gov.uk>
- In line with the above guidance, verify and establish the actual position of mains, pipes, cables, services and other apparatus on site before any activities are undertaken.

DURING any work you must:

- Ensure that the National Grid requirements are followed for work in the vicinity of High pressure pipelines including the supervision of the digging of trial holes.
- Comply with all guidance relating to general activities and any specific guidance for each asset type as specified in the Guidance Section below.
- Ensure that access to National Grid apparatus is maintained at all times.
- Prevent the placing of heavy construction plant, equipment, materials or the passage of heavy vehicles over National Grid apparatus unless specifically agreed with National Grid in advance.
- Exercise extreme caution if slab (mass) concrete is encountered during excavation works as this may be protecting or supporting National Grid apparatus.
- Maintain appropriate clearances between gas apparatus and the position of other buried plant.

GUIDANCE

National Grid Gas Transmission Network data

The Network map for National Grid Gas Transmission assets can be downloaded at the following link in GIS format.

<https://www.nationalgrid.com/uk/gas-transmission/land-and-assets/network-route-maps>

High Pressure Gas Pipelines Guidance:

If working in the vicinity of a high pressure gas pipeline the following document must be followed: 'Specification for Safe Working in the Vicinity of National Grid High Pressure Gas Pipelines and Associated Installation – Requirements for Third Parties' (SSW22). This can be obtained from:
<Link to SSW22 once it has been updated and signed off>

Essential Guidance document:

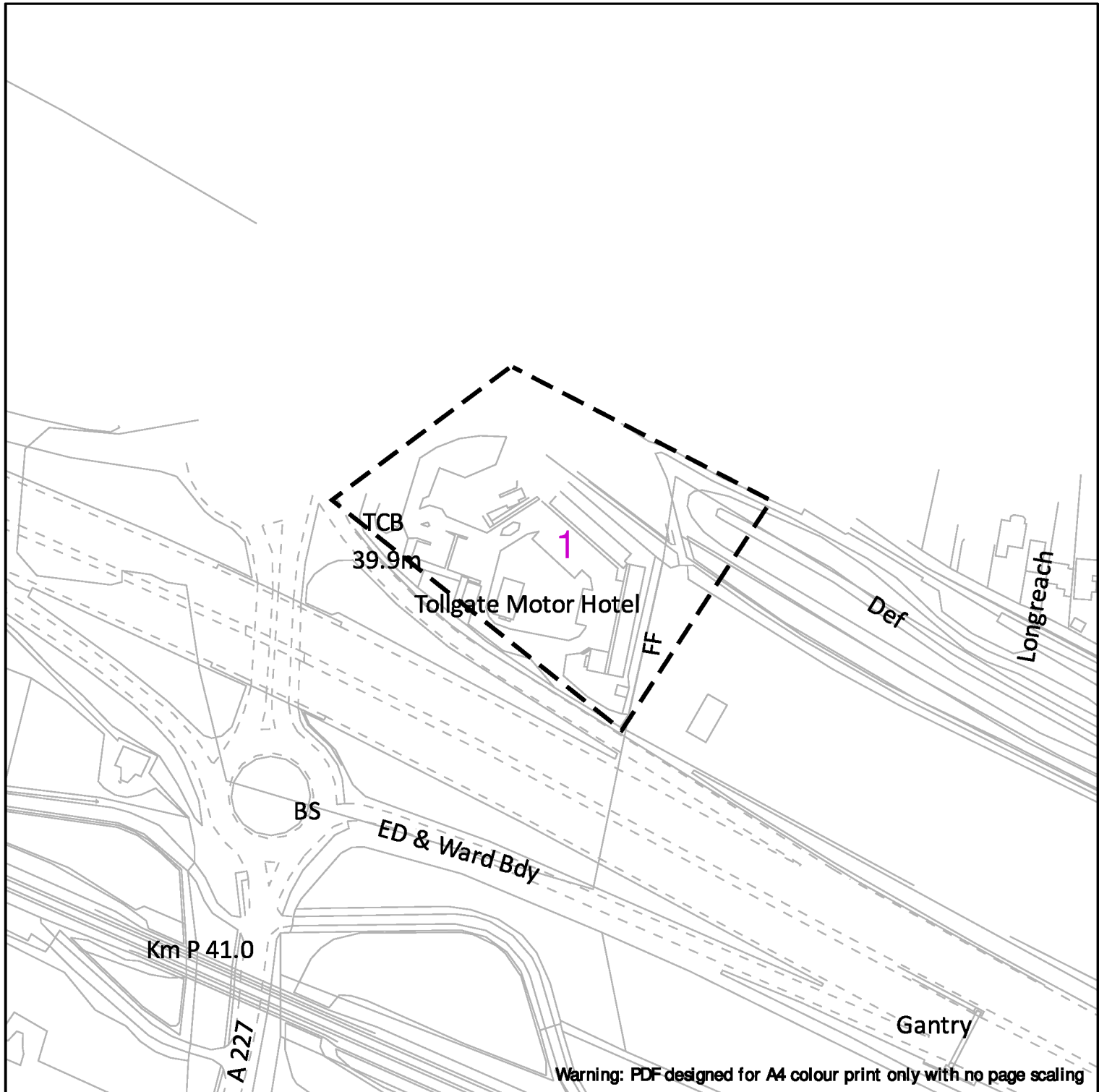
<https://www.nationalgrid.com/uk/gas-transmission/sites/gas/files/documents/8589934982-Essential%20Guidance.pdf>

You should be aware of the following information regarding National Grid's high pressure (1) underground pipelines and associated apparatus:

- Our underground pipelines are protected by permanent agreements with landowners or have been laid in the public highway under our licence. These grant us legal rights that enable us to achieve efficient and reliable operation, maintenance, repair and refurbishment of our gas transmission network. Hence we require that no permanent structures are built over or under pipelines or within the zone specified in the agreement, materials or soil are not stacked or stored on top of the pipeline route and that unrestricted and safe access to any of our pipeline(s) must be maintained at all times.
- The information supplied is given in good faith and only as a guide to the location of our underground pipelines. The accuracy of this information cannot be guaranteed. The physical presence of such pipelines may also be evident from pipeline marker posts. The person(s) responsible for planning, supervising and carrying out work in proximity to our pipeline(s) shall be liable to us, as pipeline(s) owner, as well as to any third party who may be affected in any way by any loss or damage resulting from their failure to locate and avoid any damage to such a pipeline(s).
- The relevant guidance in relation to working safely near to existing underground pipelines is contained within the Health and Safety Executive's (www.hse.gov.uk) Guidance HS(G)47 "Avoiding Danger From Underground Services" and all relevant site staff should make sure that they are both aware of and understand this guidance.
- Our pipelines are normally buried to a depth of 1.2 metres or more below ground and further information may be found on the plans provided. Ground cover above our pipelines should not be reduced or increased.
- Any proposed cable crossings are subject to approval from National Grid, completion of a Deed of Consent and must remain a minimum of 600mm above or below the pipeline. All works associated with cable installation must be supervised by National Grid. Cables cannot be pulled through until a Deed of Consent is in place.
- If it is planned to use mechanical excavators and any other powered mechanical plant, it shall not be sited or moved above the pipeline.
- If it is planned to carry out excavation to a depth greater than 0.3 metres, embankment or dredging works, the actual position and depth of the pipeline must be established on site with our representative and a safe working method agreed prior to any work taking place in order to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.
- The digging of trial holes to locate the pipeline must be carried out under the supervision of our on-site representative following approval of RAMS. Excavation works may take place unsupervised no closer than 3 metres from the pipeline once its actual location has been confirmed. Similarly, excavation with handheld power tools may take place no closer than 1.5 metres away.
- For operational and safety reasons National Grid requires unrestricted access to our Above Ground Installations and Compressor Stations. We would request that any proposed changes to roads/layouts in the vicinity of our site have regard to the need to maintain access.
- Any construction traffic should either cross the pipeline using existing roads or at agreed crossing locations using agreed protective measures.
- Ground anchors for scaffolding stay wires should only be sited in the vicinity of the pipeline after the pipeline position has been confirmed on site with our representative and the ground anchor position agreed.

- If your proposals include the installation of wind turbines then the minimum separation between the pipeline and the nearest turbine should be 1.5 times the mast height.
- If your proposals include the installation of a Solar Farm, all assets must remain outside of the National Grid easement, all cable crossings must be agreed during the design stage, a Deed of Consent undertaken and an Earthing report must be provided for review. National Grid must retain access to its assets at all times once works have been completed.

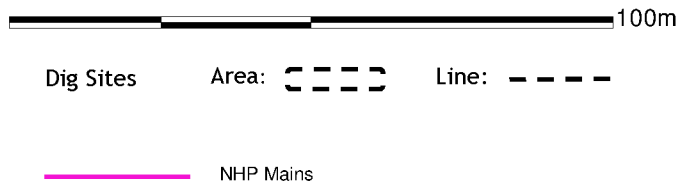
The relocation of existing underground pipelines is not normally feasible on grounds of cost, operation and maintenance and environmental impact. Further details can be found in our specification for: safe working in the vicinity of National Grid high pressure gas pipelines and associated installations – requirements for third parties: T/SP/SSW/22 (see link above or copy enclosed)



nationalgrid

National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

AssetProtection@NationalGrid.com



Date Requested: 28/ 11/ 2022
Job Reference: 27754640
Site Location: 564295 171143
Requested by: Ms Gillian Cameron
Your Scheme/ Reference: Tollgate

IMPORTANT NOTICES

This plan shows those pipes owned by National Grid Limited in its role as a licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regards to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc., are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Limited or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

National Grid Gas Emergency Number: 0800 111 999

Available 24 hours, 7 days/week. Calls may be recorded and monitored

Scale: 1:2500 (When plotted at A4)

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ENQUIRY SUMMARY

Received Date

28/11/2022 13:27

Work Start Date

29/11/2022

Your Reference

Tolgate

Location

Centre Point: 564295 171143

X Extent:

Y Extent:

Postcode: DA117NR

Map Options

Paper Size: A4

Orientation: PORTRAIT

Scale: 1:2500

Real World Extents: 201m x 166m

Enquirer Details

Organisation Name: Subadra Consulting Ltd

Contact Name: Gillian Cameron

Email Address: camerong@subadra.com

Telephone: 01296 739400

Address: Unit 13 Triangle Business Park Wendover Road, Stoke Mandeville, Buckinghamshire, HP12 4RQ

Enquiry Type

Initial Enquiry

Activity Type

Development Projects

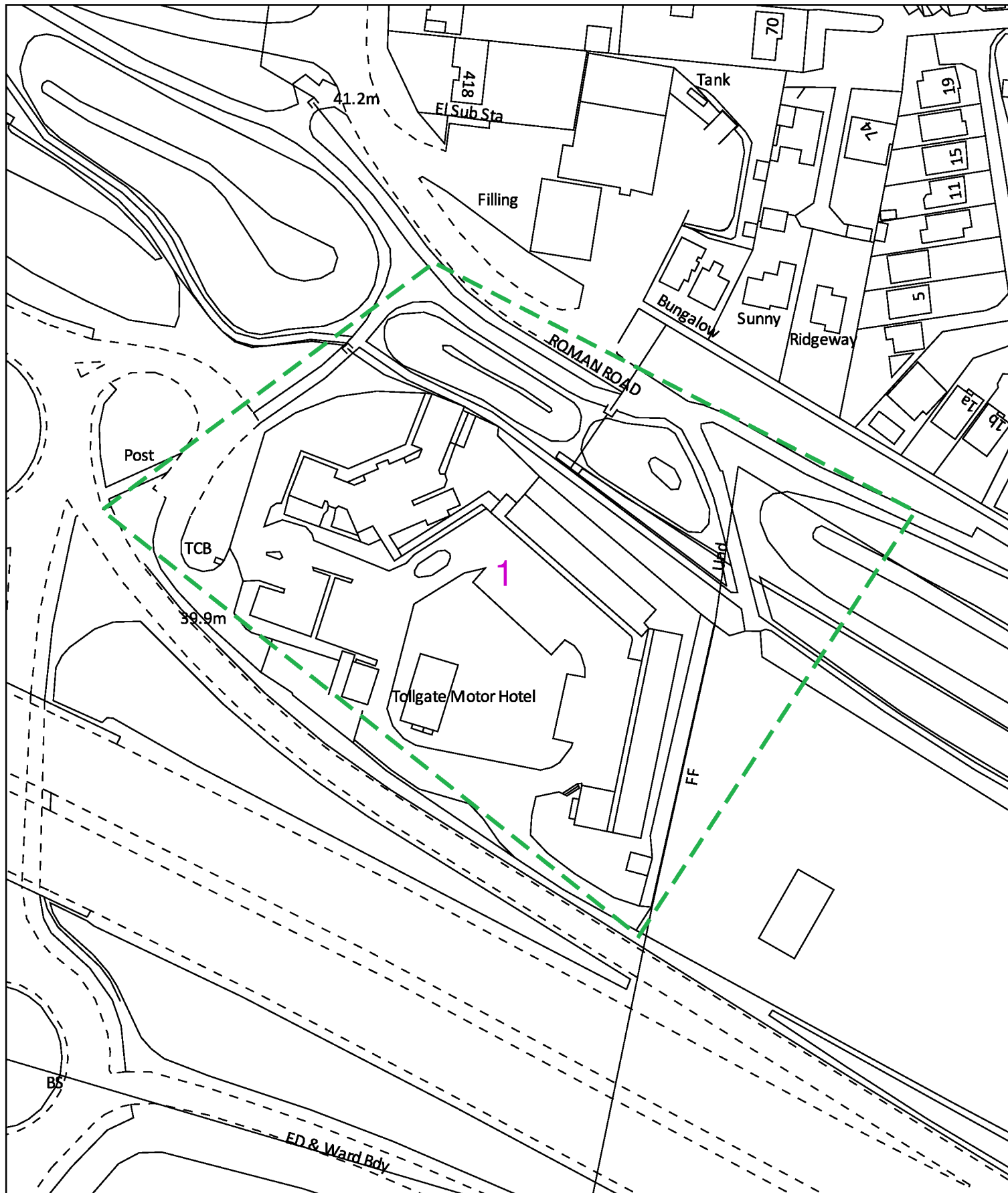
Work Types

Commercial/industrial

Notes/Works Description (if supplied)

Site Contact Name (if supplied)

Site Contact Number (if supplied)



0 50m Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.



Date Requested: 28/ 11/ 2022
Job Reference: 27754640
Site Location: 564295 171143

The information on this document is proprietary and shall not be used, copied, reproduced or disclosed in whole or in part without written consent of Neos Networks. Approximate location only is shown. To determine exact location a trial hole must be dug with a Neos Networks Supervisor present. Neos Networks accept no liability for errors or omissions.

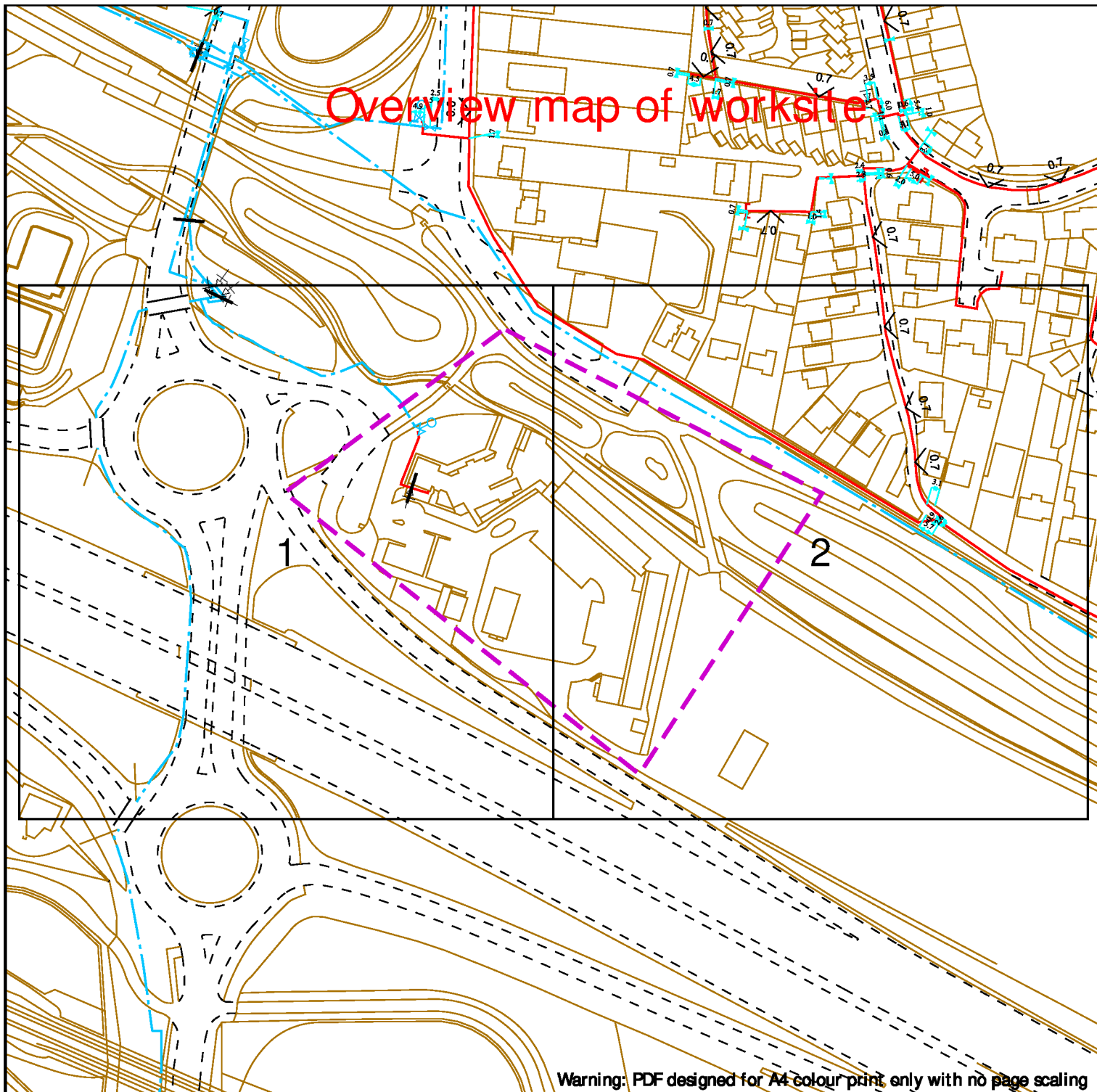
Requested by: Ms Gillian Cameron
Your Scheme/ Reference: Tollgate

Neos Networks Underground Route **Emergency Number: 0345 305 3337**

Scale: 1:1250 (When plotted at A4)

Registered Office:
Inveralmond House,
200 Dunkeld Road,
Perth, PH1 3AQ

Overview map of worksite



Warning: PDF designed for A4 colour print only with no page scaling



Contact Us
SGN Safety Admin Team:
 0800 912 1722
Email:
 plantlocation@sgn.co.uk

Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon

Digsite:

Line:

LA's

GT's

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon

Depth of Cover

Valve

Syphon



This information is given as a guide only and its accuracy cannot be guaranteed.

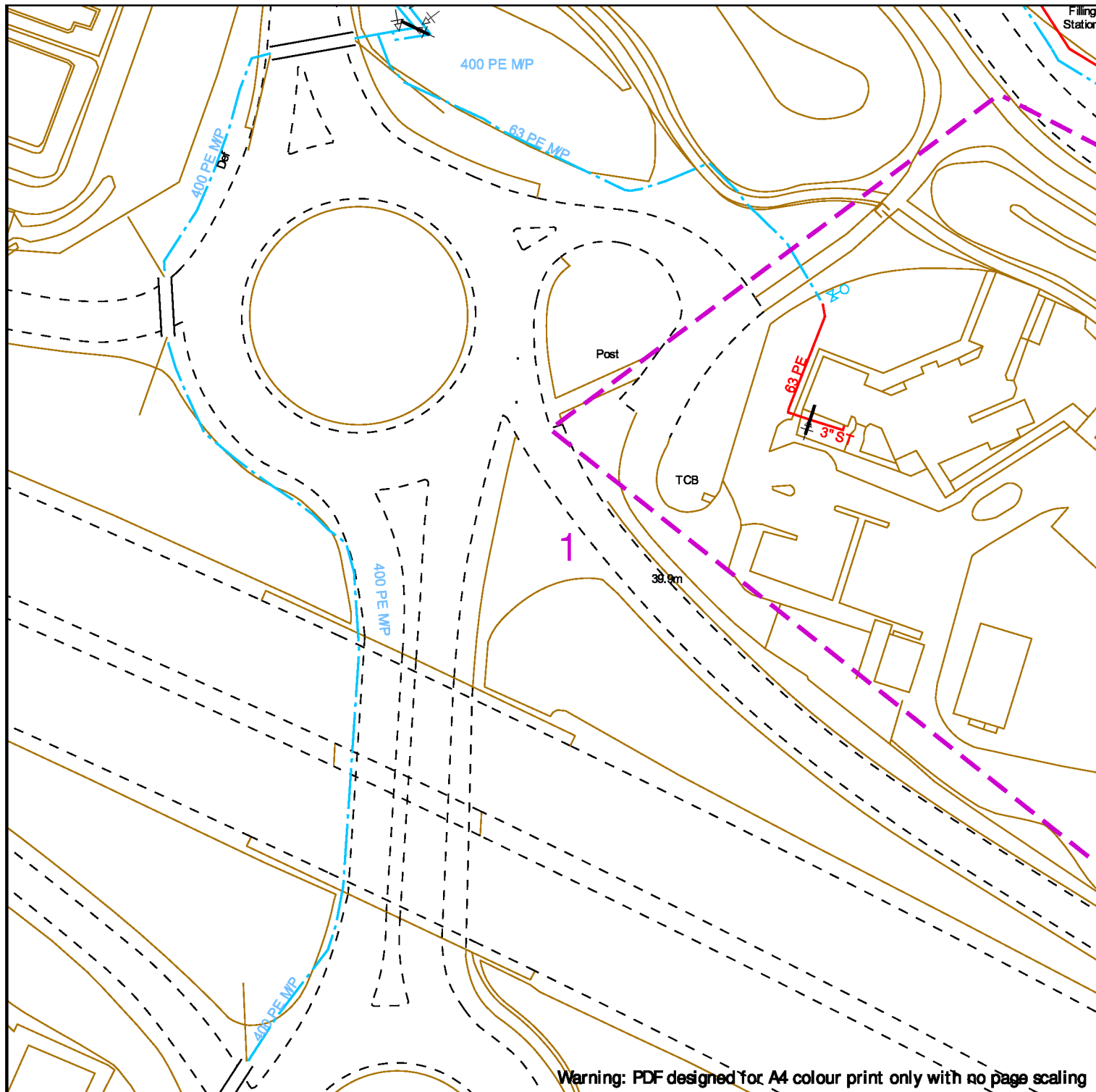


This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, syphons, sub-connections etc. are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Safety Admin Team on 0800 912 1722 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 111 999

Scale: 1:2050 (When plotted at A4)

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Email:
 plantlocation@sgn.co.uk

Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Digsite:

Line:

LA's

GT's

Diameter Change

Material Change

Area:

SSSIs

Material Change

Material Change

Material Change

Material Change



This information is given as a guide only and its accuracy cannot be guaranteed.

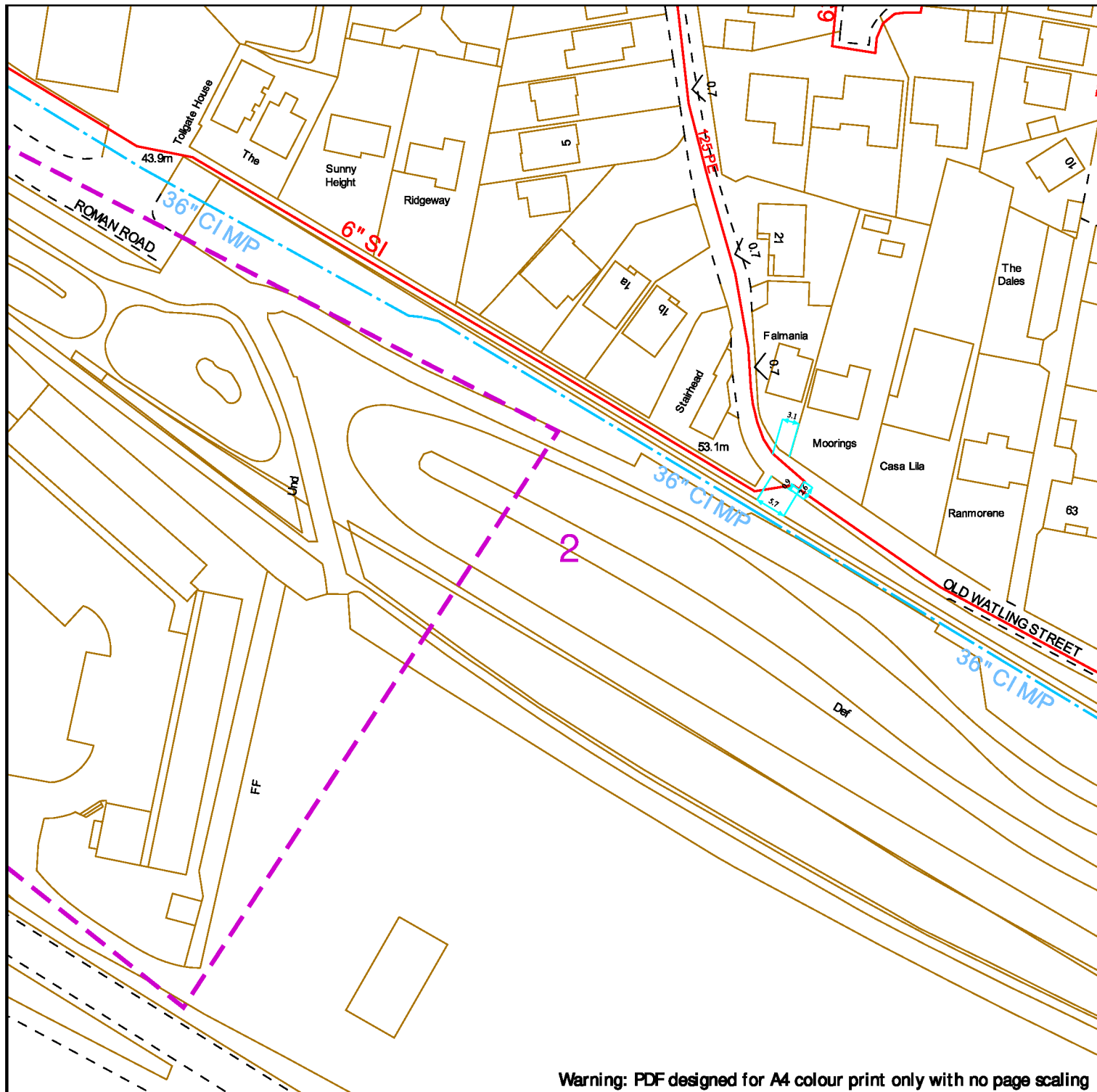


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Low Pressure Mains
 Medium Pressure Mains
 Intermediate Pressure Mains
 High Pressure Mains
 Some Examples Of Plant Items

Valve



Syphon



Depth of Cover



Digsite:

Line:

LAs

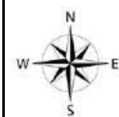
GTs

Diameter Change

Area:

SSSIs

Material Change



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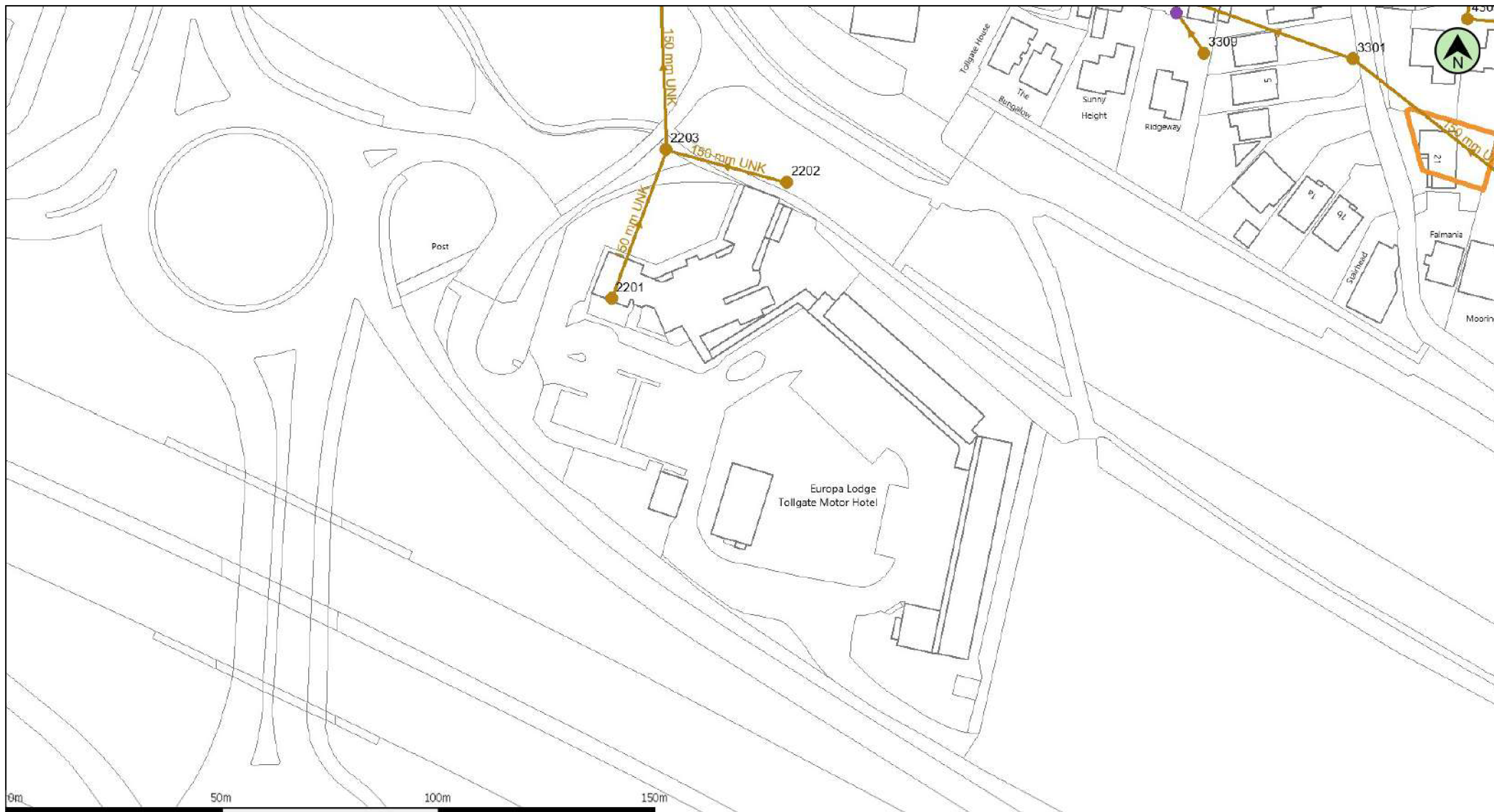


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Scale: 1:1000 (When plotted at A4)



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The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2022 Ordnance Survey 100031673. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.



camerong@subadra.com

Tollgate



