

 <p>IGas Energy</p>	<p>Storrington Wellsite</p>	
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Appendix 4 – Flood Risk Assessment



NPPF: Flood Risk Assessment

Storrington Wellsite, Cootham

iGas PLC

SHF.311.003.R.001.A



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Storrington Wellsite, Cootham

Project:	NPPF: Flood Risk Assessment
For:	iGas PLC
Status:	Draft
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1.0 Introduction

1.1 Background

1.1.1. At the request of iGas Plc, a Flood Risk Assessment (FRA) has been undertaken, in accordance with the National Planning Policy Framework (NPPF)¹ and the Technical Guidance to the NPPF², for an extension of time of working for the production of oil and gas at Storrington Oilfield until 31 December 2017 (see Drawing 1). This has included an assessment of the surface water drainage requirements of the site.

1.1.2. This report details the flood risk at the site and how this could be managed and mitigated in support of the enclosed planning application for a change of use development. The proposed scale of development may present risks of flooding on-site and/or off-site if flooding is not effectively managed.

1.1.3. It is recognised that developments that are designed without regard to flood risk may endanger lives, damage property, cause disruption to the wider community, damage the environment, be difficult to insure and require additional expense on remedial works. Current guidance on development and flood risk³ identifies several key aims for a development to ensure that it is sustainable in flood risk terms. These aims are as follows:

- the development should not be at a significant risk of flooding and should not be susceptible to damage due to flooding;
- the development should not be exposed to flood risk such that the health, safety and welfare of the users of the development, or the population elsewhere, is threatened;
- normal operation of the development should not be susceptible to disruption as a result of flooding;
- safe access to and from the development should be possible during flood events;
- the development should not increase flood risk elsewhere;
- the development should not prevent safe maintenance of watercourses or maintenance and operation of flood defences;
- the development should not be associated with an onerous or difficult operation and maintenance regime to manage flood risk. The responsibility for any operation and maintenance required should be clearly defined;
- future users of the development should be made aware of any flood risk issues relating to the development;
- the development design should be such that future users will not have difficulty obtaining insurance or mortgage finance, or in selling all or part of the development, as a result of flood risk issues;
- the development should not lead to degradation of the environment; and
- the development should meet all of the above criteria for its entire lifetime, including consideration of the potential effects of climate change.

¹ Department for Communities and Local Government (2012) National Planning Policy Framework.

² Department for Communities and Local Government (2012) Technical Guidance to the National Planning Policy Framework.

³ CIRIA (2004) Funders report CP/102 Development and Flood Risk – Guidance for the Construction Industry.

1.1.4. The FRA is undertaken with due consideration of these sustainability aims.

1.1.5. The key objectives of the FRA are:

- To assess the flood risk to the proposed development and to demonstrate the feasibility of appropriately designing the development such that any residual flood risk to the development and its users would be acceptable;
- To assess the potential impact of the proposed development on flood risk elsewhere and to demonstrate the feasibility of appropriately designing the development such that the development would not increase flood risk elsewhere; and
- To satisfy the requirements of national planning policy guidance which require FRAs to be submitted in support of planning applications.

1.2 Project Scope

1.2.1 In order to achieve the aims outlined above, a staged approach has been adopted in undertaking this FRA, in accordance with current best practice. A screening study has initially been undertaken to identify whether there are any potential sources of flooding at the site, which may warrant further consideration. Any potential flooding issues identified in the screening study have subsequently been considered in a scoping study. The aim of the scoping study is to review all available information and provide a qualitative assessment of the flood risk to the site and the impact of the site on flood risk elsewhere.

1.3 Report Structure

1.3.1 This FRA has the following report structure:

- Section 2 identifies the sources of information that have been consulted during the FRA;
- Section 3 describes the application area including the existing and proposed development;
- Section 4 outlines the flood risk to the existing and proposed development;
- Section 5 assesses the potential impacts of the proposed development on surface water;
- Section 6 provides details of the Sequential and Exception Tests; and
- Section 7 presents a summary and conclusions.

2.0 Sources of Information

2.1 Sources of Information

- 2.1.1 General information regarding the site setting and hydrology of the application site has been obtained from the OS Explorer Map 134: Crawley & Horsham.
- 2.1.2 Information regarding the current flood risk at the application site, local flood defences and flood water levels has been obtained from the Environment Agency (see Appendix 1).
- 2.1.3 A location plan is shown on Drawing 1.

2.2 Discussion with Regulators

- 2.2.1 A wide range of regulators should be consulted when carrying out an FRA. These include the Environment Agency, the Local Planning Authority (LPA), and Water Regulators. Consultation and discussions with the relevant regulators have been undertaken during this FRA.

2.3 Environment Agency

- 2.3.1 The Flood and Water Management Act 2010 gives the Environment Agency a strategic overview role for all forms of flooding and coastal erosion. They also have direct responsibility for the prevention, mitigation and remediation of flood damage for main rivers and coastal areas. The Environment Agency is the statutory consultee with regards to flood risk and planning.
- 2.3.2 Environment Agency Standing Advice and the NPPF has been consulted and reviewed during this FRA.
- 2.3.3 A response has been received from Helen Tier Sustainable Places Planning Advisor at the Environment Agency for this area (see Appendix 1).

2.4 Local Planning Authorities

- 2.4.1 Planning guidance written by West Sussex County Council and Horsham District Council regarding flood risk was consulted to assess the mitigation policies in place. These documents include the evidence base for the Local Development Framework and the Local Plan.
- 2.4.2 Other documentation consulted included the Strategic Flood Risk Assessment (SFRA) of West Sussex and the Horsham District Council SFRA which cover the site.

2.5 Southern Water

- 2.5.1 Southern Water is responsible for the disposal of waste water and supply of clean water within this area.
- 2.5.2 Information with regards to sewer and water main flooding contained within the SFRA of West Sussex and the Horsham District Council SFRA has been consulted as part of this FRA. All Water Companies have a statutory obligation to maintain a register of properties/areas which are at risk of flooding from the public sewerage system, and this is shown on the DG5 Flood Register.

3.0 Description of Application Area

3.1 Site Location

- 3.1.1 The site is located to the east of the A283, on the western edge of Parham Airfield (see Drawing 1).
- 3.1.2 The National Grid Reference of the site is TQ 06875, 14900.

3.2 Existing Development

- 3.2.1 The site is currently an operational wellsite.

3.3 Proposed Development

- 3.3.1 It is understood that the proposals are for an extension of time of working for the production of oil and gas at the Storrington Oilfield until the 31st December 2017
- 3.3.2 Further details with regard to the proposed development can be found in the accompanying information submitted with the planning application.

3.4 Topographic Information

- 3.4.1 The site has a ground level of approximately 42mAOD.

3.5 Catchment Hydrology

- 3.5.1 The River Rother is located approximately 1.3km to the northwest of the site, and the River Arun is located some 2km to the west (see Drawings 1 and 2). No other surface watercourses are evident either on, or within the vicinity of the site.

4.0 Flood Risk

4.1 Potential Sources of Flooding – Level 1 Screening Study

4.1.1 All potential sources of flooding must be considered for any proposed development. A summary of the potential sources of flooding and a review of the potential risk posed by each source at the application site is presented in Table 4.1.

Table 4.1: Potential Risk Posed by Flooding Sources

Flooding Source	Potential Flood Risk at Application Site?	Potential Source	Data Sources
Fluvial flooding	No	River Rother/River Arun	Environment Agency
Tidal flooding	No	None Identified	Environment Agency
Flooding from rising / high groundwater	Yes	Aquifer	BGS Map
Overland flow flooding	Yes	Poor permeability	RMS Map
Flooding from artificial drainage systems	Yes	Sewers	Southern Water, SFRA
Flooding due to infrastructure failure	No	None Identified	OS Map

Fluvial Flooding Sources

- 4.1.2 The River Rother is located approximately 1.3km to the northwest of the site, and the River Arun is located some 2km to the west (see Drawings 1 and 2). Due to the distance and topography between the site and the Rivers Rother and Arun the site is not at risk from these sources.
- 4.1.3 No other surface watercourses are evident either on, or within the vicinity of the site which pose a flood risk to the site. Therefore, this source of flooding has not been considered further within this FRA.

Tidal Flooding Sources

- 4.1.4 Due to the distance from the sea tidal flooding has not been considered further in this report. Therefore, this source of flooding has not been considered further within this FRA.

Flooding from rising / high groundwater

- 4.1.5 The Environment Agency has designated the bedrock as a Secondary A - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers;
- 4.1.6 The superficial deposits are designated as a Secondary Undifferentiated aquifer - has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as

both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

- 4.1.7 The BGS Groundwater Flooding Susceptibility Map shows that the north west corner of site has a moderate to moderately high susceptibility to flooding from rising / high groundwater (see Drawing 3).
- 4.1.8 The BGS data set is a hazard data set, not a risk data set, meaning that it does not provide any information about the likelihood of a groundwater flooding event occurring. It is noted that the BGS flood map is to be used as a screening tool, and should not be used to inform planning decisions.
- 4.1.9 Groundwater flooding tends to occur sporadically in both location and time. When groundwater flooding does occur, it tends to mostly affect low-lying areas, below surface infrastructure and buildings (for example, tunnels, basements and car parks) underlain by permeable rocks (aquifers).
- 4.1.10 As no below surface infrastructure and buildings are proposed for the site, as such the site is not considered at risk of flooding from rising / high groundwater.

Overland flow flooding

- 4.1.11 The site is not situated near to large areas of poor permeability or areas with the geology and/or topography which may result in overland flow flooding. Overland land flow flooding tends to occur sporadically in both location and time.
- 4.1.12 The Risk Management Solutions (RMS) overland flow flood map shows that the north west corner of the site is located within the 1 in 1000 year overland flow flood zones (see Drawing 4).
- 4.1.13 Therefore, the site has a low risk of overland flow flooding.

Flooding from Artificial Drainage Systems/Infrastructure Failure

- 4.1.14 Sewer flooding occurs when urban drainage networks become overwhelmed and maximum capacity is reached. This can occur if there is a blockage in the network causing water to back up behind it or if the sheer volume of water draining into the system is too great to be handled. This type of flooding tends to occur sporadically in both location and time.
- 4.1.15 Information with regards to sewer and water main flooding contained within the SFRA of West Sussex and the Horsham District Council SFRA has been consulted as part of this FRA.
- 4.1.16 The majority of sewers are built to the guidelines within Sewers for Adoption⁴. These sewers have a design standard to the 1 in 30 year flood event and therefore it is likely that the majority of sewer systems will surcharge during rainstorm events with a return period greater than 30 years (e.g. 100 years).
- 4.1.17 Therefore, a low level of flood risk is posed by this source of flooding.

⁴ WRC (2006) Sewers for Adoption 6th Edition.

4.2 Environment Agency Flood Map

- 4.2.1 A review of the Environment Agency's flood map indicates that the site has a 'low probability' of flooding as the site is located within Flood Zone 1 with less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%) (see Drawing 5).
- 4.2.2 The Flood Zones are the current best information on the extent of the extremes of flooding from rivers or the sea that would occur without the presence of flood defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development.
- 4.2.3 The Environment Agency Flood Zones and acceptable development types are explained in Table 4.3.
- 4.2.4 In the Technical Guidance to the NPPF (Table 1) appropriate uses have been identified for the Flood Zones. Applying the Flood Risk Vulnerability Classification in Table 2 and 3 of the Technical Guidance to the NPPF, the proposed development is classified as 'less vulnerable'.
- 4.2.5 Table 4.4 of this report and Table 3 of the Technical Guidance to the NPPF state that 'less vulnerable' uses are appropriate within Flood Zone 3 after the completion of a satisfactory FRA.

Table 4.3: Environment Agency Flood Zones and Appropriate Land Use

Flood Zone	Probability	Explanation	Appropriate Land use
Zone 1	Low	Less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%)	All development types generally acceptable
Zone 2	Medium	Between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% 0.1%) in any year	Most development type are generally acceptable
Zone 3a	High	A 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year	Some development types not acceptable
Zone 3b	'Functional Floodplain'	Land where water has to be flow or be stored in times of flood. SFRAs should identify this zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1% flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes)	Some development types not acceptable

Note:

The Flood Zones are the current best information on the extent of the extreme flood from rivers or the sea that would occur without the presence of flood defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development.

Table 4.4: Flood Risk Vulnerability and Flood Zone ‘Compatibility’ as identified in Table 3 of the Technical Guidance to the NPPF

Flood Risk Vulnerability classification (see Table 1 of the Technical Guidance to the NPPF)	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1	Yes	Yes	Yes	Yes	Yes
Zone 2	Yes	Yes	Exception test required	Yes	Yes
Zone 3a	Exception test required	Yes	No	Exception test required	Yes
Zone 3b ‘Functional Floodplain’	Exception test required	Yes	No	No	No

Key:

Yes: Development is appropriate, No: Development should not be permitted.

4.3 Historic Flooding

- 4.3.1 Drawing 6 shows that the site has not been historically prone to flooding based upon observations of the types of geological deposits present.
- 4.3.2 The British Hydrological Society “Chronology of British Hydrological Event⁵” has no records of flooding in the immediate area. No other historical records of flooding for the site have been recorded.

4.4 Existing and Planned Flood Defence Measures

- 4.4.1 The Environment Agency flood map confirmed that the site is not protected by flood defence measures.

4.5 Current Flood Risk

- 4.5.1 The site is not at risk from fluvial and/or tidal flooding sources.
- 4.5.2 A number of secondary flooding sources have been identified in the Level 1 Screening Study which may pose a low risk to the site. These are:
- Flooding from rising / high groundwater
 - Overland flow flooding
 - Flooding from Artificial Drainage Systems/Infrastructure Failure
- 4.5.3 The secondary flooding sources, are isolated to the north western corner of the site and will only inundate the site to a relatively low water depth and water velocity, will only last a

⁵ <http://www.dundee.ac.uk/geography/cbhe/>

short period of time, in very extreme cases and will not have an impact on the whole of the proposed development site.

- 4.5.4 As noted in Section 4.2, the entire site has a 'low probability' of flooding as the site is located within Flood Zone 1 with less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).
- 4.5.5 The proposed development is classified as 'less vulnerable', 'less vulnerable' uses are appropriate within Flood Zone 1 after the completion of a satisfactory FRA.

5.0 Site Drainage

5.1 Surface Water Drainage

- 5.11 It is recognised that consideration of flood issues should not be confined to the floodplain. The alteration of natural surface water flow patterns through developments can lead to problems elsewhere in the catchment, particularly flooding downstream. For example, replacing vegetated areas with roofs, roads and other paved areas can increase both the total and the peak flow of surface water runoff from the development site. Changes of land use on previously developed land can also have significant downstream impacts where the existing drainage system may not have sufficient capacity for the additional drainage. This section considers the existing drainage system at the application site and potential impacts resulting from the development.
- 5.12 A surface water management strategy for the development will be required to manage and reduce the flood risk posed by the surface water runoff from the site. The developer will be required to ensure that any scheme for surface water should build in sufficient capacity for the entire site.
- 5.13 There are three possible options to discharge the surface water runoff in accordance with requirement H3 of the Building Regulations 2000⁶. Rainwater shall discharge to one of the following, listed in order of priority:
- an adequate soakaway or some other adequate infiltration system; or, where that is not reasonably practicable,
 - a watercourse; or where that is not reasonably practicable,
 - a sewer.
- 5.14 An assessment of the surface water runoff rates has been undertaken, in order to determine the surface water options and attenuation requirements for the site. The assessment considers the impact of the site compared to current conditions. Therefore, the surface water attenuation requirement for the developed site can be determined and reviewed against existing arrangements.
- 5.15 The surface water drainage arrangements for any development site should be such that the volumes and peak flow rates of surface water leaving a developed site are no greater than the rates prior to the proposed development, unless specific off-site arrangements are made and result in the same net effect.

5.2 Existing Drainage System

- 5.2.1 The current drainage at the site incorporates a sealed drainage system; surface water in the main process area is retained in the site bund until released through a penstock valve to an interceptor under supervision of the site operator. If any visible trace of oil is present, the penstock is closed and arrangements made to tanker the water offsite for disposal.
- 5.2.2 All recovered water is collected in the water storage tank for reinjection down the water injection well.
- 5.2.3 It is understood that the existing drainage infrastructure at the site efficiently and effectively manages surface water runoff generated at the site. As there is no history of surface water

⁶Office of the Deputy Prime Minister, The Building Regulations 2000.

flooding at the site it is likely that the current drainage system is sufficient for the current site use.

5.3 Current Runoff Rate

5.3.1 As noted in Section 3.2, the site is currently a sealed system. The majority of is re-injected into the wellhead system.

5.4 Post-Development Runoff Rate

5.4.1 As noted in Section 3.3, the application is for an extension of time. Therefore, the amount of impermeable surfaces will not increase compared to current conditions due to their being no built development.

5.5 Post-Development Site Drainage

5.5.1 As noted in Section 5.4, the surface water runoff from the developed site will be no different to present due to their being no built development. The proposed development of the application site will not increase in surface water runoff for all events.

5.5.2 The surface water drainage network will therefore manage the surface water runoff from the site and therefore, the flood risk from this source. There will be no increase in surface water run-off or exacerbation of off-site risk as a result of the development.

5.5.3 It is understood that the existing drainage infrastructure at the site efficiently and effectively manages surface water runoff generated at the development site. As there is no history of surface water flooding at the site it is likely that the current drainage system is sufficient for the proposed use.

6.0 Sequential Approach

6.1 Sequential Test

6.1.1 Applications for extension of time are not subject to the Sequential Test (see para. 104 of the NPPF).

6.2 Exception Test

6.2.1 Applications for extension of time are not subject to the Exception Test (see para. 104 of the NPPF) and the Exception Test is not applicable to applications for 'less vulnerable' developments such as this in Flood Zone 1 as confirmed within Table 4.4 of this report and Table 3 of the Technical Guidance to the NPPF.

7.0 Summary and Conclusions

7.1 Introduction

7.1.1 This report presents an FRA, in accordance with the NPPF, to support a planning application for an extension of time of working for the production of oil and gas at Storrington Oilfield until 31 December 2017. This has included an assessment of the surface water drainage requirements of the site.

7.1.2 This report details the flood risk at the site and how this could be managed and mitigated to allow the site to be developed in support of the enclosed planning application for an extension of time. The proposed scale of development may present risks of flooding on-site and/or off-site if flooding is not effectively managed.

7.2 Assessment of Flood Risk

7.2.1 The FRA has demonstrated the following:

- The site is not at risk of fluvial and/or tidal flooding
- A number of secondary flooding sources have been identified in the Level 1 Screening Study which may pose a low risk to the site. These are:
 - Flooding from rising / high groundwater
 - Overland flow flooding
 - Flooding from Artificial Drainage Systems/Infrastructure Failure
- The secondary flooding source will only inundate the site to a relatively low water depth and water velocity, will only last a short period of time, in very extreme cases and will not have an impact on the whole of the proposed development site.
- The entire site has a 'low probability' of flooding as the site is located within Flood Zone 1 with less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%)
- The proposed development is classified as 'less vulnerable', 'less vulnerable' uses are appropriate within Flood Zone 1 after the completion of a satisfactory FRA.

7.2.2 Table 7.1 summarises the probability and consequence of flooding for the site with and without mitigation measures.

Table 7.1: Probability and consequences of all sources of flooding

Flooding Source	Potential Source	Probability	Consequence & Impact Without Mitigation	Consequence & Impact With Mitigation	Comment
Fluvial flooding	River Arun and Rother	Negligible	Negligible	Negligible	None
Tidal flooding	None	Negligible	Negligible	Negligible	None
Flooding from rising / high groundwater	Aquifer	Low	Low	Negligible	No below surface infrastructure/buildings are proposed
Overland flow flooding	Poor Permeability	Low	Low	Negligible	Will not affect the whole site area
Flooding from artificial drainage systems	Sewers	Low	Low	Negligible	Will not affect the whole site area
Flooding due to infrastructure failure	None	Negligible	Negligible	Negligible	None

Key:

Green - Negligible, Yellow - Low, Orange - Medium and Red - High.

7.3 Site Drainage

- 7.3.1 In addition, the FRA has considered the potential impact of the development on surface water runoff rates.
- 7.3.2 The surface water runoff from the developed site will be no different to present due to their being no built development. The proposed development of the application site will not increase in surface water runoff for all events.
- 7.3.3 The surface water drainage network will therefore manage the surface water runoff from the site and therefore, the flood risk from this source. There will be no increase in surface water run-off or exacerbation of off-site risk as a result of the development.
- 7.3.4 It is understood that the existing drainage infrastructure at the site efficiently and effectively manages surface water runoff generated at the development site. As there is no history of surface water flooding at the site it is likely that the current drainage system is sufficient for the proposed use.

7.4 Sequential Approach

Sequential Test

7.4.1 Applications for extension of time are not subject to the Sequential Test.

Exception Test

7.5.2 Applications for extension of time are not subject to the Exception Test and the Exception Test is not applicable to applications for “highly vulnerable” developments such as this in Flood Zone 1.

7.5 Conclusion

7.5.1 Therefore this FRA demonstrates that the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the NPPF.

7.5.2 The development should not therefore be precluded on the grounds of flood risk.

Site Location
(T006875/4800)

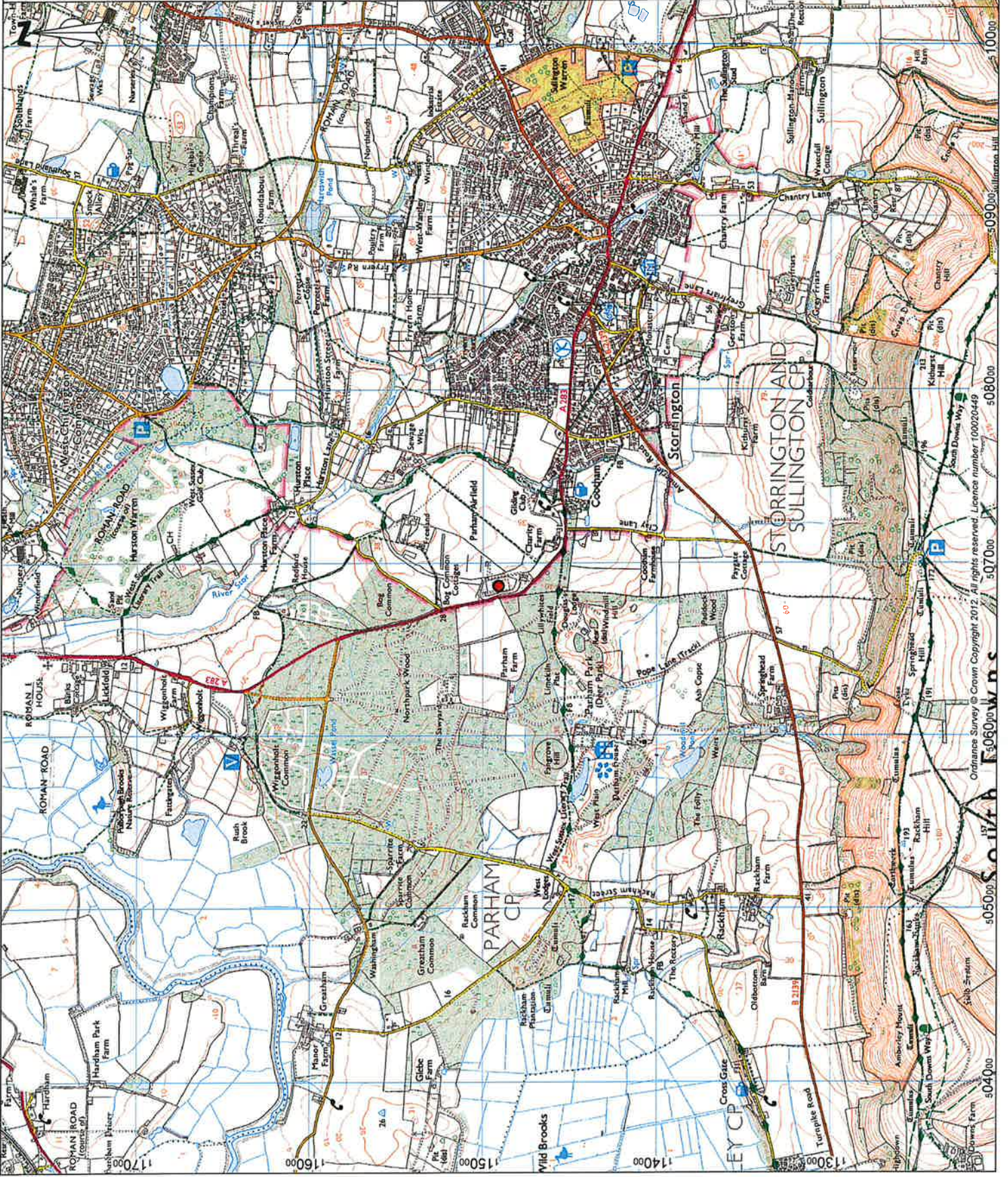


Key

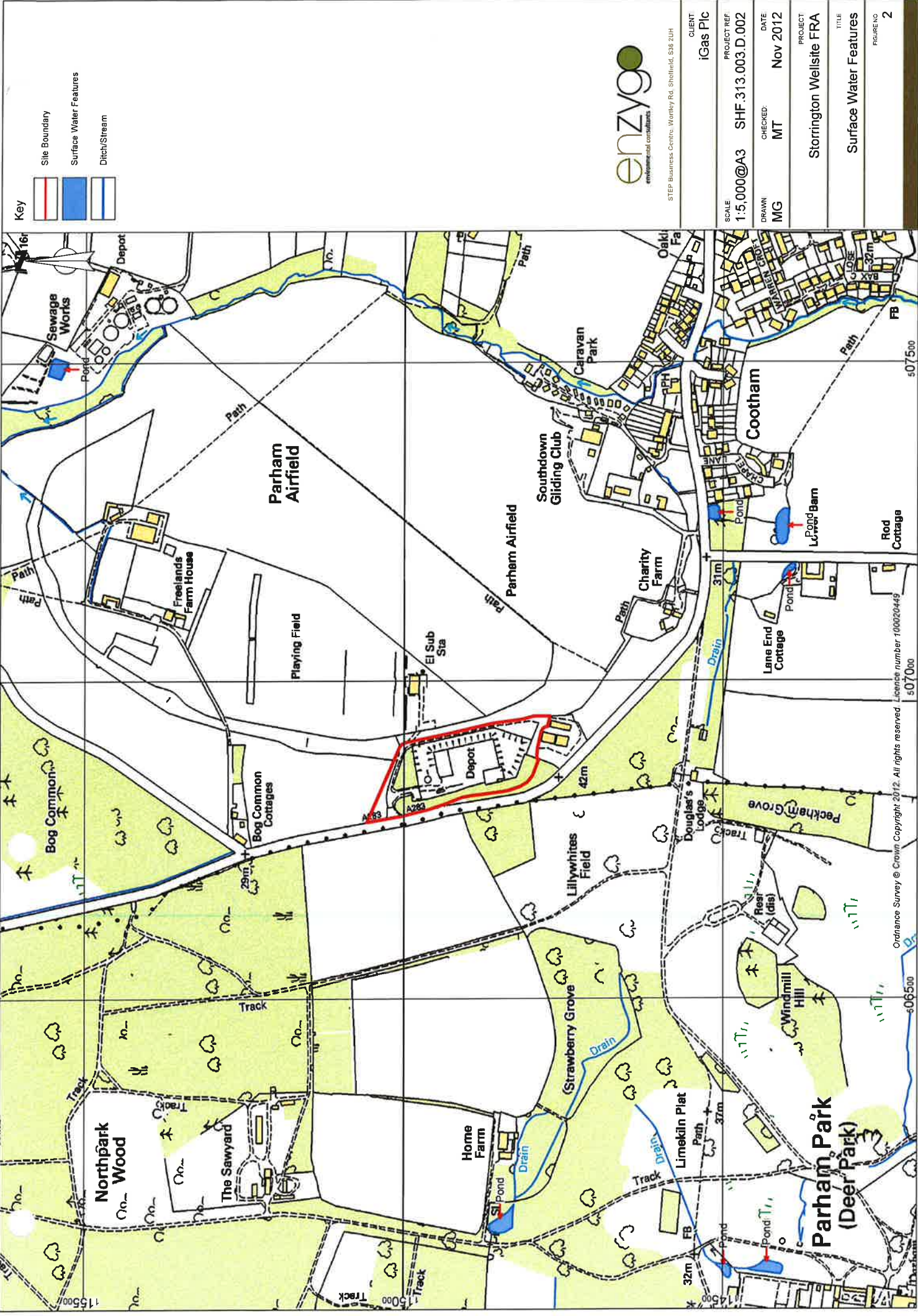


STEP Business Centre, Worley, R0, Shillield, S36 2UH

CLIENT	iGas Plc
PROJECT REF	1:20,000@A3 SHF.313.003.D.001
CHECKED	MT
DATE	Nov 2012
PROJECT	Storrington Welliste FRA
TITLE	Site Location Plan
FIGURE NO	1



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Key

	Site Boundary
	Surface Water Features
	Ditch/Stream



CLIENT	iGas Plc
PROJECT REF	SHF.313.003.D.002
DATE	Nov 2012
CHECKED:	MT
PROJECT	Storrington Welisite FRA
TITLE	Surface Water Features
FIGURE NO	2

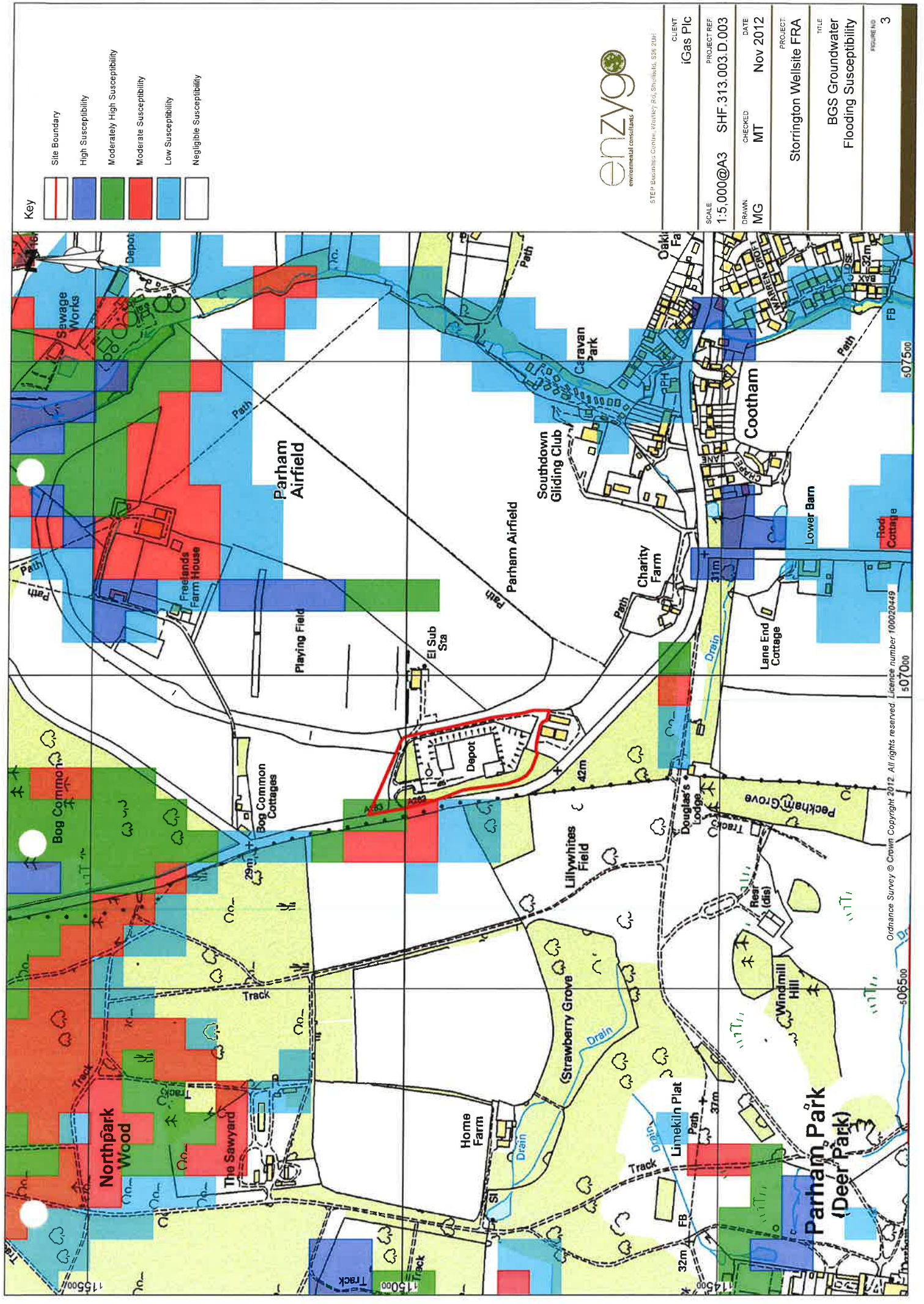
STEP Business Centre, Wortley Rd, Sheffield, S38 2UH

SCALE	1:5,000@A3
DRAWN	MG

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Key





[Red line]	Site Boundary
[Dark Blue]	High Susceptibility
[Green]	Moderately High Susceptibility
[Red]	Moderate Susceptibility
[Light Blue]	Low Susceptibility
[White]	Negligible Susceptibility



CLIENT	iGas Plc
PROJECT REF	SHF.313.003.D.003
DATE	Nov 2012
CHECKED	MT
DRAWN	MG
PROJECT	Storrington Wellsite FRA
TITLE	BGS Groundwater Flooding Susceptibility
FIGURE NO	3

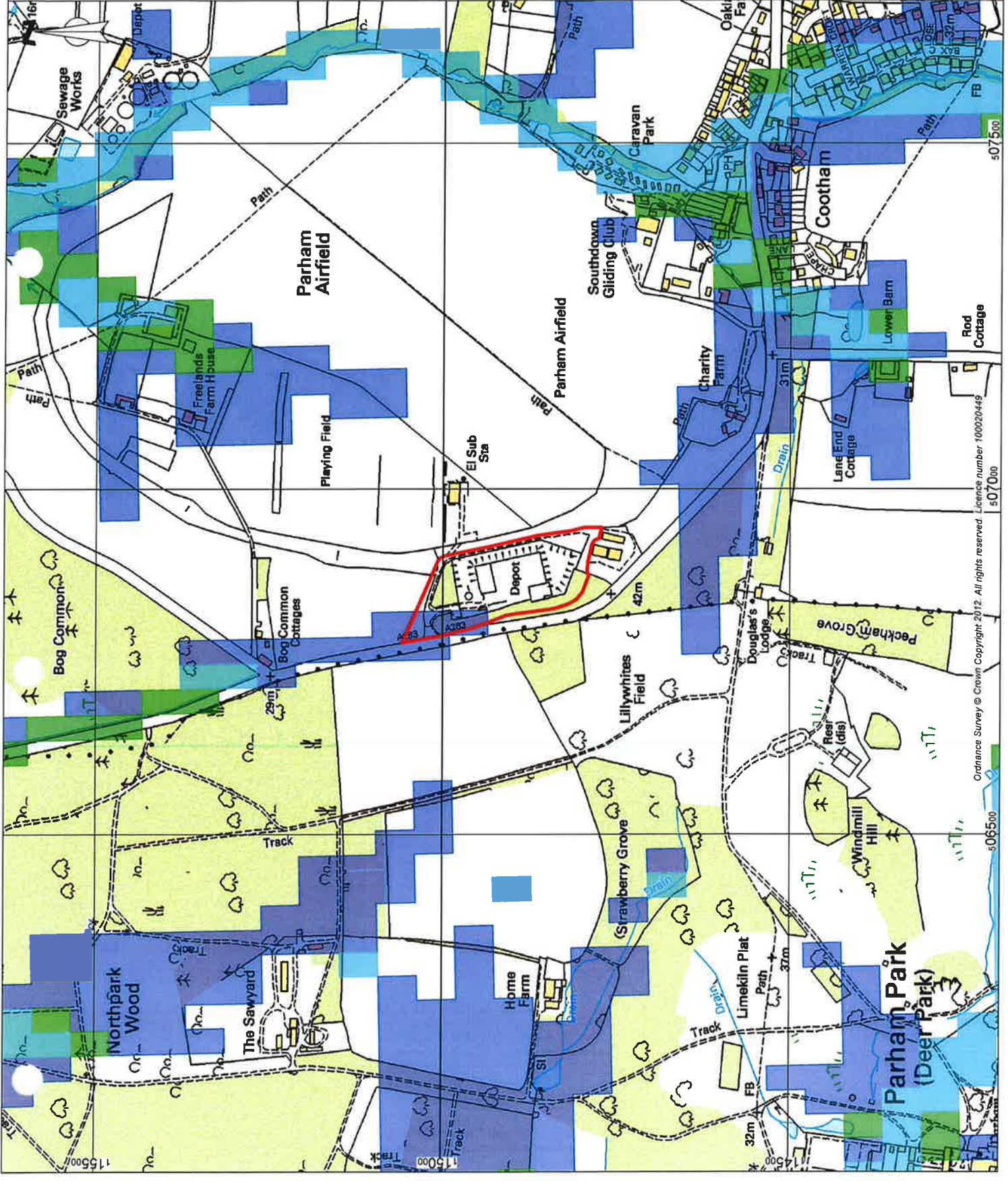
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Key

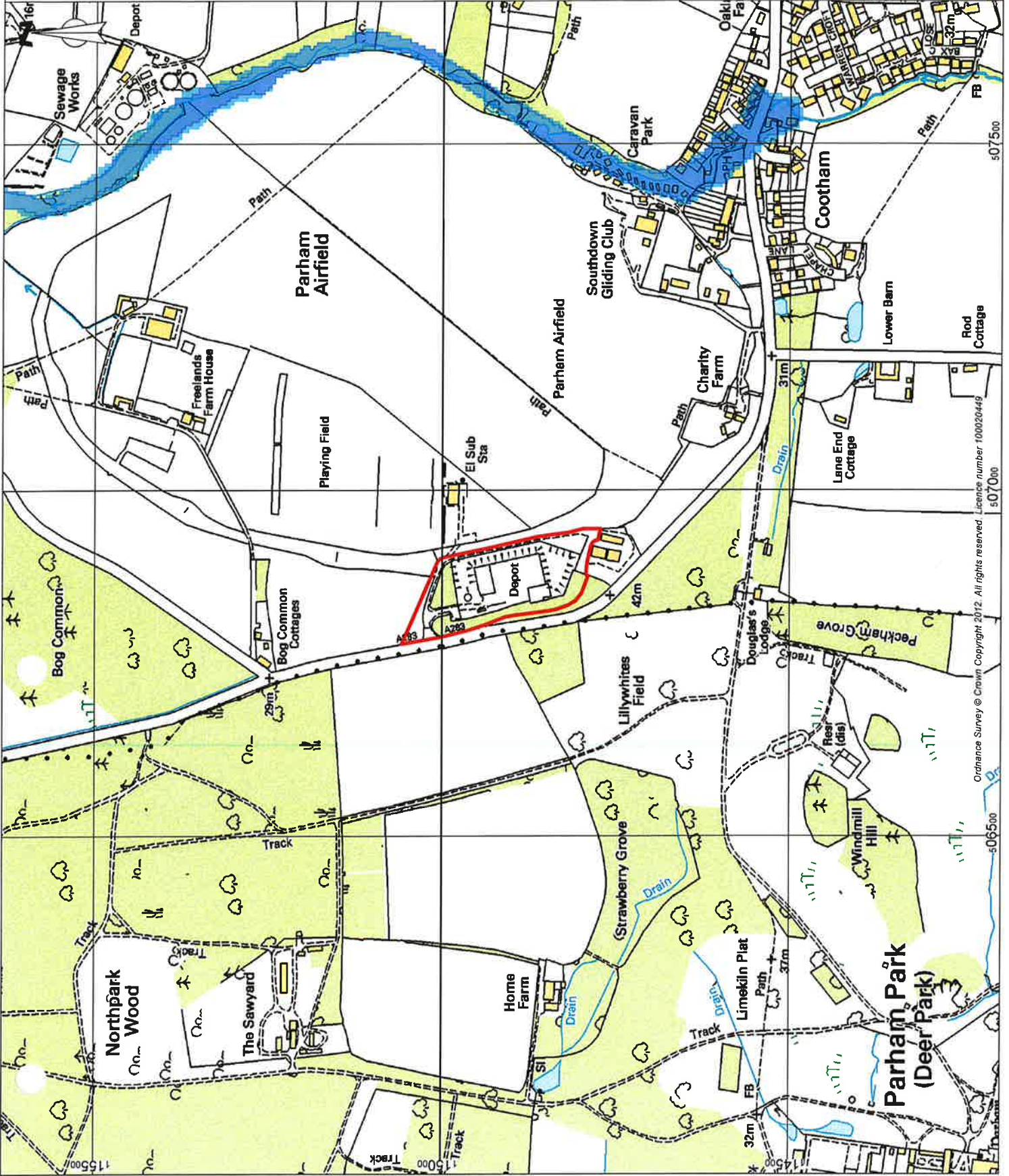
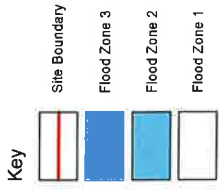
	Site Boundary
	1 in 75 Year Flood Event
	1 in 100 Year Flood Event
	1 in 1000 Year Flood Event



CLIENT:	iGas Plc
PROJECT REF:	SHF.313.003.D.004
DATE:	Nov 2012
CHECKED:	MT
DRAWN:	MG
PROJECT:	Storrington Wellsite FRA
TITLE:	RMS Overland Flow Flooding
FIGURE NO:	4



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CLIENT	iGas Plc
PROJECT REF	SHF.313.003.D.005
CHECKED	MT
DATE	Nov 2012
PROJECT	Storrington Welliste FRA
TITLE	Environment Agency Flood Zones
FIGURE NO	5

STEP Business Centre, Wortley Rd, Sheffield, S38 2UH

SCALE:	1:5,000@A3
DRAWN	MG

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Appendix 1 – Environment Agency Correspondence

Mr Matt Travis
Enzygo
Step Business Centre (Unit 33)
Wortley Road
Deepcar
Sheffield
S36 2UH

Our ref: HA/2012/113646/01-L01
Your ref: iGas Plc
Date: 03 December 2012

Dear Mr Travis

STORRINGTON WELLSITE, COOTHAM SURREY

Thank you for your pre planning enquiry regarding the above which was received on 28 November.

In this instance, we have taken a risk based approach and will not be providing bespoke comments.

According to the National Planning Policy Framework (NPPF) paragraph 103 (note 20) sites of one hectare and greater in Flood Zone 1 require a Flood Risk Assessment (FRA).

We would recommend that the FRA demonstrates the following as a minimum:

1. That it will be feasible to balance surface water run-off to the pre-developed run-off rate for all events up to the 1 in 100 year storm (including additional climate change allowance*) and set out how this will be achieved, or achieve betterment in the surface water runoff regime; ensuring that surface water runoff will not increase flood risk to the development or third parties.
2. How sustainable drainage system techniques (SUDs) will be used with any obstacles to their use clearly justified. (This should include, where appropriate, provision for the adoption of drainage infrastructure and maintenance contribution to that party).

* *Climate Change* - An allowance for climate change needs to be incorporated, which means adding an extra amount to peak rainfall (20% for commercial development, 30% for residential).

3. The residual risk of flooding can be managed safely should any drainage features fail or if they are subjected to an extreme flood event. Surface water may be managed above ground in designated open areas and at shallow depths for events with a return period in excess of 30 years, but this should not put people and property at unacceptable risk. Raising of ground or floor levels could be proposed to manage risk, where appropriate.
4. An assessment of flood risk associated with 'ordinary watercourses' may also be necessary as our Flood Zone Maps primarily show flooding from main rivers, not ordinary watercourses with a catchment of less than 3km².

Further guidance on site specific FRA's can be found in the Planning Policy Statement 25 (PPC25) Practice Guide, which has been retained despite the cancellation of PPS25.

For further information on Sustainable Drainage Systems (SuDS) 'dry islands' and situations where disposal to a public sewer is proposed, please refer to the Environment Agency Flood Risk Standing Advice at: <http://www.environment-agency.gov.uk/research/planning/82584.aspx>

Helpful sources of information on SuDS include:

- the CIRIA C697 document SuDS manual
- HR Wallingford SR 666 Use of SuDs in high density developments
- CIRIA C635 Designing for exceedance in urban drainage – good practice
- the Interim Code of Practice for Sustainable Drainage Systems. The Interim Code of Practice provides advice on design, adoption and maintenance issues and a full overview of other technical guidance on SuDS.

The Interim Code of Practice is available on our website at: www.environment-agency.gov.uk and CIRIA's website at www.ciria.org.uk

The NPPF paragraph 109 states that the planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Government policy also states that planning policies and decisions should ensure that adequate site investigation information, prepared by a competent person, is presented (NPPF, paragraph 121).

Please note that the view expressed in this letter by the Environment Agency is a response to a pre application enquiry only and does not represent our final view in relation to any future planning application made in relation to this site. We reserve the right to change our position in relation to any such application.

You should seek your own expert advice in relation to technical matters relevant to any planning application before submission

I hope the above comments are satisfactory but if you require any further information please contact me.

Cont/d..

Yours sincerely

Helen Tier

**Environment Agency
Sustainable Places Planning Adviser**

Direct dial 01903 703862

Direct e-mail PlanningSSD@environment-agency.gov.uk

End

3



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Please visit our website for more information.

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