

SITE CONDITION REPORT

Traditional Norfolk Poultry Ltd
April 2020

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Norfolk Traditional Poultry Ltd

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SITE CONDITION REPORT

Traditional Norfolk Poultry Ltd

1. SUMMARY

This report has been compiled on behalf of Traditional Norfolk Poultry Ltd to meet the requirements of a 'Site Condition Report'. This report is submitted as part of an application to the Environment Agency for a Permit to operate an Installation under the Environmental Permitting (England and Wales) Regulations 2016.

The site has previously had a Phase I Contamination Report undertaken. This, along with an Environment Agency screening assessment; appropriate BGS, geology, hydrology and hydrogeological records of the site and the surrounding areas have been gathered to present the assessment findings. Additionally, records of the site have been reviewed along with the operational site records in order to describe the condition of the site and, in particular, to identify any substance in, on or under the land that may constitute a pollution risk to the land. Pollution prevention measures have been identified and an assessment of pollution potential to land has been undertaken.

2. SUMMARY

2.1 Overview

The Application is made in support of a poultry slaughtering and processing facility in Shropham ("the site"); Traditional Norfolk Poultry Ltd (TNP). The site has been in operation since 2004. This Site Condition Report ("SCR") has been prepared in accordance with the Environment Agency Site Condition Report – Guidance and Templates (H5 – version 3, April 2013) document.

2.2 Site Location

The site is located on the north east side of the village of Shropham (approx. 7km south West of Attleborough in Norfolk). The entire site is within the ownership boundary of TNP. The buildings within the site boundary are utilised as a poultry processing plant and associated lairage.

The site address is Oak Tree Business Park, Hargham Road, Shropham, Norfolk, NR17 1DS and the site Grid coordinates are 598880, 293100. The site covers an area of approximately 1.67 Ha.

The existing uses of land surrounding the site are presented in Table 1. An aerial photograph of the site and the surrounding area is provided in Figure 1 below.

Figure 1 – Site Location

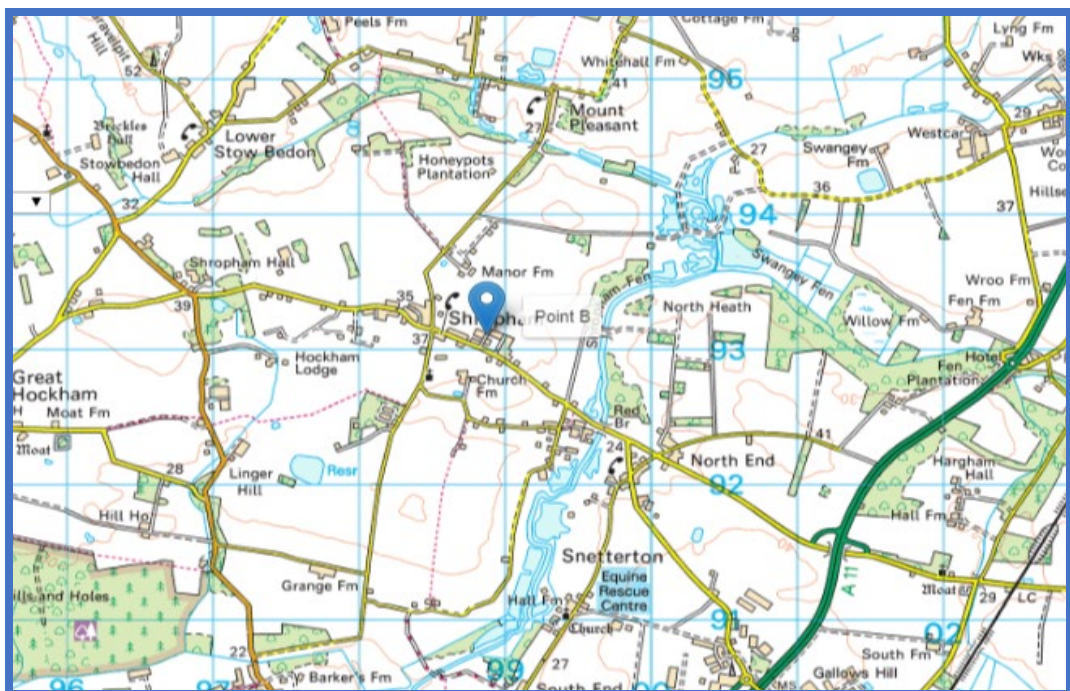


Table 1 – Surrounding Land Use

Direction	Feature
North	TNP agricultural land immediately to the North of the site. Further country beyond.
South	Residential properties (owned by TNP), Hargham Rd, countryside.
East	Amazon gym (41m), other small industrial units. Countryside. River Thet lies 750m away.
West	Greenfields garage (141m), Village hall (350m). Countryside beyond

2.3 Site Details

All of TNP relevant activities take place within the proposed Installation boundary (please see Appendix 1a of main document TNP_SID/042020).

The site currently employs 180 staff and is operational Mon – Fri. Some deliveries take place out of these hours during seasonal peaks. The relevant current planning permissions allow operations outside of these times.

The functions that take place at the site are poultry (both chicken and turkey) slaughtering and some value-added processing, prior to packaging. The stages comprise:

- Delivery and Inspection
- Stunning
- Bleeding
- Scalding
- De-feathering
- Secondary scalding
- Evisceration
- Chilling
- Cutting
- Packing
- Cleaning/Hygiene (present throughout all stages)

Supporting ancillary operations include one pellet fuelled biomass boiler, one Calor gas boiler (not in operation at the time this application is submitted), and refrigeration units.

3. Objectives

This report aims to satisfy the Environment Permit application requirements by:

- Identifying the environmental setting of the site
- Identify the land pollution history of the site
- Identifying activities that could potentially cause land pollution
- Identifying and assessing preventative measures to protect the land.

4. SITE SETTINGS AND DESK STUDY INFORMATION SOURCES

4.1 Introduction

The following sections detail the sources of desk study information used to describe the condition of the site, and more particularly, determine the potential for substances to be present in, on or under the land - associated with present and past uses of the site and its surrounding areas.

The following have been used as a source of the information.

- Landmark Information Group – Envirocheck © Report – 22nd October 2019
 - Environment Agency – Nature and Heritage Conservation Screening Report: Bespoke Installations.
 - Natural England Website
 - Joint Nature Conservation Committee
 - Multi-agency Geographical Information for the countryside website
 - Magic Maps
-

4.2 Existing Investigations and Site Assessment Reports

A Phase I contamination study was undertaken in July 2014 in support of the proposed planning developments on site (described in main document TNP_SID/042020). This report was compiled by A F Howland Associates Limited.

4.3 Discharge Consents, Licenses, Authorisations, Permits & Designations for the Site and Surrounding Area

There is no Trade Effluent consent in place for the site.

There is no Climate Change Agreement in place at the site.

There are no waste management activities carried out at the site.

An Envirocheck© database search was requested from Landmark Information Group Ltd to provide records of any discharge consents, Environmental Permits and abstraction Licences within 1,000 metres of the site boundary. The Envirocheck© report is contained within Appendix A of

this report. This report has facilitated the assessment of likely activities and processes in the surrounding area that could affect the site and of any likely processes and activities conducted on site that may affect nearby sensitive receptors.

A summary of the environmental consents, licences, authorisations and environmental permits in the surrounding area are presented in Table 2 below.

Table 2 - Envirocheck© Summary

Data Type	On Site	0 to 250m	251 to 500m	501 to 1000m (* up to 2000m)
Agency & Hydrological				
BGS Groundwater Flooding Susceptibility	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices				
Discharge Consents			7	15
Prosecutions Relating to Controlled Waters		n/a	n/a	n/a
Enforcement and Prohibition Notices				
Integrated Pollution Controls				
Integrated Pollution Prevention And Control				1
Local Authority Integrated Pollution Prevention And Control				
Local Authority Pollution Prevention and Controls				
Local Authority Pollution Prevention and Control Enforcements				
Nearest Surface Water Feature		Yes		
Pollution Incidents to Controlled Waters			1	3
Prosecutions Relating to Authorised Processes				
River Quality				1
River Quality Biology Sampling Points				
River Quality Chemistry Sampling Points				
Substantiated Pollution Incident Register				3
Water Abstractions				31 (*52)
Groundwater Vulnerability Map	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk	1	n/a	n/a	n/a
Groundwater Vulnerability - Local Information		n/a	n/a	n/a
Bedrock Aquifer Designations	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	Yes	n/a	n/a	n/a
Source Protection Zones			2	1
Extreme Flooding from Rivers or Sea without Defences			n/a	n/a
Flooding from Rivers or Sea without Defences			n/a	n/a
Areas Benefiting from Flood Defences			n/a	n/a
Flood Water Storage Areas			n/a	n/a
OS Water Network Lines			10	70

Data Type	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste				
BGS Recorded Landfill Sites				
Historical Landfill Sites				
Integrated Pollution Control Registered Waste Sites				
Licensed Waste Management Facilities (Landfill Boundaries)				
Licensed Waste Management Facilities (Locations)				1
Local Authority Landfill Coverage	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites				
Potentially Infilled Land (Non-Water)		2	1	3
Potentially Infilled Land (Water)				2
Registered Landfill Sites				
Registered Waste Transfer Sites				
Registered Waste Treatment or Disposal Sites				
Hazardous Substances				
Control of Major Accident Hazards Sites (COMAH)				
Explosive Sites				
Notification of Installations Handling Hazardous Substances (NIHHS)				
Planning Hazardous Substance Consents				
Planning Hazardous Substance Enforcements				
Geological				
BGS 1:625,000 Solid Geology	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	Yes			Yes
BGS Recorded Mineral Sites		2	1	3
BGS Urban Soil Chemistry				
BGS Urban Soil Chemistry Averages				
CBSCB Compensation District		n/a	n/a	n/a
Coal Mining Affected Areas		n/a	n/a	n/a
Mining Instability		n/a	n/a	n/a
Man-Made Mining Cavities				
Natural Cavities				1
Non Coal Mining Areas of Great Britain	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards			n/a	n/a
Potential for Ground Dissolution Stability Hazards	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards		Yes	n/a	n/a
Radon Potential - Radon Affected Areas		n/a	n/a	n/a

Industrial Land Use

Contemporary Trade Directory Entries		2		3
Fuel Station Entries				
Points of Interest - Commercial Services		2		
Points of Interest - Education and Health				
Points of Interest - Manufacturing and Production	2		3	4
Points of Interest - Public Infrastructure				1
Points of Interest - Recreational and Environmental				
Gas Pipelines				
Underground Electrical Cables				

Sensitive Land Use

Ancient Woodland				1
Areas of Adopted Green Belt				
Areas of Unadopted Green Belt				
Areas of Outstanding Natural Beauty				
Environmentally Sensitive Areas				
Forest Parks				
Local Nature Reserves				
Marine Nature Reserves				
National Nature Reserves				
National Parks				
Nitrate Sensitive Areas				
Nitrate Vulnerable Zones	1			1
Ramsar Sites				
Sites of Special Scientific Interest				
Special Areas of Conservation				
Special Protection Areas				
World Heritage Sites				

4.4 Nature Conservation Designations

Details of the Conservation Designations for the site, and within 10 kilometres of the site boundary, were identified using the Environment Agency search - *Nature and Heritage Conservation Screening Report: Bespoke Installations (reference EPR/AP3402PK/A001)*. A copy of the full assessment, and associated maps are included in this document as Appendix 2.

The information notes the ecologically sensitive receptors within 10 kilometres of the site. The location of environmentally sensitive receptors within 10 kilometres of the site boundary, as well as details of each site, are provided in this report. The full citations are included in Appendix 3.

Special Areas Conservation (SACs) – within 10km.

- Breckland
- Norfolk Valley Fens

Special Protection Areas (SPA) – within 10km

- Breckland

Sites of Special Scientific Interest (SSSI) – within 2km

- Swangey Fen, Attleborough

Local Wildlife Sites (LWS) – within 2km

- East of Lower Stow Bedon Stafford's
- Meadow
- South of Shropham Hall
- Lake in Shropham
- Shropham Hall Grounds
- Lower Stow Bedon
- Thet Valley
- Lakes & River in Shropham
- Shropham Grove
- South of Mount Pleasant
- North of Red Bridge
- Shropham Fen
- Old Gravel Works

Ancient Woodland

- Unnamed woodland (within 2km)

Breckland SAC/SPA

Breckland SAC (EC Directive 92/93) has a designation since 1st April 2005. It covers an area of 7548 Ha and is made up of several SPA and SSSI designations. According to the citation listed on Natural England's website:

*Breckland in the heart of East Anglia is a gently undulating plateau underlain by bedrock of Cretaceous Chalk, covered by thin deposits of sand and flint. The conditions during the last glaciation have given rise to the patterned ground features and ice depressions (pingos) that we see today and that are of high geological and biological importance. The continental climate, with low rainfall and free-draining soils, has led to the development of dry heath and grassland communities. Relatively lush river valleys provide a gentle contrast to the drier harsher surroundings. Occasional woods with alder *Alnus glutinosa* and willow *Salix sp.* the most dominant trees occur beside rivers and streams in the floodplains. These woods rely on high water levels and sometimes surface flooding as both river flooding or spring flows can be very important.*

*The dry heaths of Breckland are of the *Calluna vulgaris* – *Festuca ovina* (heather – sheep’s-fescue) community. The sand sedge-dominated *Carex arenaria* sub-community is typical of areas of blown sand – a very unusual feature of this location. The highly variable soils of Breckland, with underlying chalk being largely covered with wind-blown sands, have resulted in mosaics of heather-dominated heathland, acidic grassland and calcareous grassland that are unlike those of any other site. In many places there is a linear or patterned distribution of heath and grassland, arising from fossilised soil patterns that formed under peri-glacial conditions.*

*Breckland is the most extensive surviving area of the rare *Festuca ovina* – *Hieracium pilosella* – *Thymus praecox* (sheep’s-fescue – mouse-ear-hawkweed – wild thyme) grassland type. The grassland is rich in rare species typical of dry, winter-cold, continental areas, and approaches the features of grassland types in central Europe more than almost any other semi-natural dry grassland found in the UK.*

Norfolk Valley Fens SAC/SCI/SPA

Norfolk Valley Fens SAC (EC Directive 92/93) has a designation since April 2005. It covers an area of 616.5 Ha. According to the information included in Natura 2000 Standard data form (compiled by Joint Nature Conservation Committee):

*Northern Atlantic wet heaths with *Erica tetralix* for which the area is considered to support a significant presence. European dry heaths for which the area is considered to support a significant presence. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) for which the area is considered to support a significant presence. *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) for which the area is considered to support a significant presence. Calcareous fens with *Cladium mariscus* and species of the *Caricion davalliana* for which the area is considered to support a significant presence which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares.*

*Alkaline fens for which this is considered to be one of the best areas in the United Kingdom. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) for which the area is considered to support a significant presence. *Vertigo moulinsiana* for which this is considered to be one of the best areas in the United Kingdom. *Vertigo angustior* for which this is considered to be one of the best areas in the United Kingdom.*

Swangey Fen (SSSI)

Swangey Fen SSI has been notified under Section 28 of the Wildlife and Countryside Act 1981, since 1984. It covers an area of 82.3 Ha. The site contains an area of species-rich, spring-fed fen of a type that is otherwise largely restricted to the Norfolk Broads. According to the information included in the citation:

The site contains an area of species-rich, spring-fed fen of a type that is otherwise largely restricted to the Norfolk Broads. Wet woodland and grassland surround the fen, increasing the interest of the site and helping to maintain a high water-table. The River Thet passes through the site.

*The fen itself contains sizeable areas of Saw Sedge *Cladium mariscus* interspersed with areas of mixed Blunt-flowered Rush *Juncus subnodulosus* and Black Bog Rush *Schoenus nigricans*. These contain a good range of associated plants, many of them of a very localised distribution. Some of the more noticeable are plants such as Grass of Parnassus *Parnassia palustris*, Fragrant Orchid *Gymnadenia conopsea*, Milk Parsley *Peucedanum palustre*, Marsh Lousewort *Pedicularis palustris*, Marsh Helleborine *Epipactis palustris*, Early Marsh Orchid *Dactylorhiza incarnata* and Marsh Pea *Lathyrus palustris*. In addition there are several less spectacular plants, small sedges such as Slender Sedge *Carex lasiocarpa* and a number of rare mosses. Tussocks of *Sphagnum* moss have also developed in these areas.*

*Around the Southern and Eastern sides of the fen the vegetation changes. Reed *Phragmites australis*, Sweet Grass *Glyceria* sp. and Meadowsweet *Filipendula ulmaria* are dominant and there is much less variety of plant life. This vegetational change reflects the seasonal lowering of the water-table in these areas during the summer, which appears to have been caused by drainage channels on the margins of the fen. Scrub, mostly Sallow and Alder has invaded parts of the fen and around the margins grades into established wet woodland. Substantial blocks of wet woodland are also found to the south of the River Thet.*

*The grasslands within the site divide into two classes. On the south side of the river there is an area of unimproved grassland of considerable interest. The contains a variety of vegetation types ranging from dry acidic Bent Grass/Fescue *Agrostis/Festuca* grassland to wetter areas in which Meadowsweet, Blunt-flowered Rush and Marsh Pennywort *Hydrocotyle vulgaris* are abundant. The range of flowering plants includes Lesser Knapweed *Centaurea nigra*, Bird'sfoot Trefoil *Lotus corniculatus*, Ladies Bedstraw *Galium verum*, Ragged Robin *Lychnis flos-cuculi* and Greater Bird'sfoot Trefoil *Lotus uliginosus*. This area has been ungrazed for some time and patches of thistles and nettles have established themselves.*

On the north side of the river there is a substantial area of cattle-grazed meadowland. This is less species-rich but is important in maintaining the water-table within Swangey Fen itself. The dykes that divide the meadows contain a range of common water plants. The section of the River Thet that runs through the site has been extensively modified and deepened and is of little intrinsic interest. It does however determine the summer water level over a considerable proportion of the site.

4.5 Geology, Hydrological and Hydrogeology Data

Geological and Hydrogeological information for the site was obtained from

- Landmark Information Group – Envirocheck© Report – 22nd October 2019. This includes Geological map extracts taken from the British Geological Survey Digital Geographical map of Great Britain at 1:50,000 Scale 4.

Geological mapping (British Geological Survey digital maps 1:50,000) indicates the site to be underlain by superficial deposits of the Croxton Sands and Gravel member overlying solid geology of chalk known in this region as the Lewes Nodular Chalk, Seaford Chalk, Newhaven Chalk and Culver Chalk formations.

The nearest significant surface water feature is the River Thet located within an area known as Shropham Fen approximately 730m to the east of the site. Minor drainage ditches are located on the perimeter of the surrounding fields (these are not significant enough to be mentioned within the Agency & Hydrological section of the Envirocheck). The site is not identified as being at risk from flooding from rivers, the sea, reservoirs or surface water. Groundwater is anticipated to be at an elevation of 20m AOD, approximately 15m below ground level. Groundwater flow is assumed to be towards the river Thet to the East.

The superficial deposits are classified as a secondary A aquifer (Landmark Information Group Groundwater Vulnerability map 1:100,000) whilst the underlying solid geology is classified as a principal aquifer. The site is not located within a safeguard zone or a groundwater source protection zone (SPZ) but a SPZ level 1 is located 729m to the South East of the site.

The nearest groundwater abstraction license is 666m to the East of the site. It is an abstraction from the River Thet and is for agricultural purposes. There is a further abstraction point 785m to the South-East of the site. This abstraction is a borehole from groundwater and is for industrial purposes. All further abstraction details are beyond 1000m to the site and are included in the Envirocheck report (Appendix 1) but are not discussed further in this report.

The Envirocheck Site Sensitivity Map 1:10,000 shows there is recorded BGS mineral site and an area of potentially infilled land, immediately to the south of the site. It is known from the historical mapping that the area had open cast mineral mines.

The soils classification is as follows (taken from Landis[®] Land Information Services – ‘Soil Portal’): Freely draining slightly acidic but base-rich soil. The whole site and immediate surrounding area is covered by the same soil classification.

The site is located within a surface Nitrate Vulnerable Zone

4.6 Operational Records, Emergency Response Records and Land Pollution Incident Records in the Site vicinity

Operational records from the site have been reviewed and a visual inspection made of the site during site reconnaissance visits on 20th November 2019, 11th February 2020 and 18th March 2020. The visits were undertaken by Alica Thomas of Green Sustain UK Ltd.

There are no records of pollution incidents at the site since it was commissioned and there was no visual evidence of pollution incidents/history. There was a fire prior to 2010. It is not known how the firewater was managed. It is understood (anecdotally; verbally with existing management) that the fire was left to burn out; due to the firewater containment issues and the relatively low risk of the blaze.

A detailed Envirocheck© Report was requested from Landmark, full details of which are presented

in **Appendix A** of this report.

The Envirocheck © report states that no contaminated land register entries and notices have been recorded on site. However, the Environment Agency has recorded two pollution incidents on its substantiated pollution incident register within 1000m of the site. These are detailed below (both incidents relating to an accidental emission to water).

Table 3 – Recorded incident of on the Environment Agency’s substantiated pollution incident register.

Description	Distance /Direction	Date	Pollutant
Water impact: Category 2 – Significant Air impact : Category 4 – No impact Land impact: Category 4 – No impact	676 (E)	18th November 2006	Oils – Diesel spill
Water impact: Category 2 – Significant Air impact : Category 4 – No impact Land impact: Category 4 – No impact	966 (SE)	25th March 2009	Contaminated Water: Veg washings

4.7 Historical Land Use

A review of historical maps has been undertaken. The maps are appended in Appendix 1 A summary of details are provided below:

Source	Date	Detail
OS Mapping	1883	The site was undeveloped and comprised open fields located off Hargam Road. The surrounding area was dominated by open fields with some isolated ponds. Old marl pits were present around 155m to the S and 200m to the SE.
OS Mapping	1906	There was little or no change to the site or surrounding area when compared to the 1883 edition.
OS Mapping	1978	The general site area was occupied by several buildings annotated as Grange Farm. The area of the site proposed for development was partially occupied by three buildings adjacent to one another. The surrounding area was still largely dominated by open fields although several residential dwellings had been constructed to the SW of the site.
OS Mapping	1995	There was little or no change to the site and surrounding area when compared to the 1978 map edition
OS Mapping	2012	The buildings occupying the proposed area of development were no longer mapped. The buildings occupying the remainder of the wider site area cover an increased footprint and are assumed to be the modern steel framed buildings currently present on site. The surrounding area remained mostly unchanged with the exception of a group of industrial buildings to the E and residential dwellings to the S.

**This mapping summary has been largely taken from Phase I Contamination review undertaken in 2014. All maps referred to have been cross-referenced with the undated 2019 information provided by Landmark and included in Appendix 1; (aside from 2012 map which is referred to above).

5 SITE RECONASSANCE

5.1 Introduction

Site reconnaissance visits were undertaken on 20th November 2019, 11th February 2020 and 18th March 2020. The visits were undertaken by Alica Thomas of Green Sustain UK Ltd in the presence of Steve Allan (Technical Manager – Responsible for Environmental Management at TNP), Lloyd Nembhard (Engineering Manager), Kealey Margetts (Asst Technical Manager). Meetings and discussions were held with Senior management (Director Mark Gorton).

The purpose of the visits was to inspect the site and the surrounding area for indicators of potential land pollution. Site infrastructure was visually inspected to assess its competence and potential to cause or have caused releases to land.

The features in this section detailed below were inspected, and no evidence of potential land pollution relating to existing activities on site was identified.

5.2 Hardstanding and Bunds

The majority of the site is covered with concrete with areas of unmade/rough ground in non-processing areas. The site is surrounded by an earth bund for acoustic protection.

All tanks or containers with the potential to cause pollution are located on hard standings (some waste containers are not. Please see Section 5.5) or provided with appropriate secondary containment provided by by-pass facility etc. Aside from diesel and effluent, there are no bulk storage tanks on site.

5.3 Chemical Storage/Handling

Chemicals are stored in one dedicated storage area; split between two bunded, lockable units. This is located to the western side of the site. The location of the chemical storage area can be viewed in Appendix 5 of the main application document TNP_SID/042020.

All liquid chemical delivery operations are supervised by relevant, trained TNP staff. Chemicals can only be moved on site by nominated operatives. The site has a chemical delivery procedure in place and all relevant persons are required to undergo required training with chemical supplier.

5.4 Nature of the Storage and Handling of Raw Materials

Poultry is unloaded in a specified area and transferred to lairage prior to processing. There is only process water drainage within these areas.

Washing activities are strictly controlled within these areas. Cleaning/hygiene chemical application in these areas is a weak solution of disinfectant ('Perbac').

5.5 Waste Storage

Within internal areas, all animal waste (equipment, floors, rejects) are put into designated lockable bins.

Externally, all site waste is stored across three areas: Please refer to Drawing in Appendix 5 of the permit application document – 'Emission Points and Relevant Storage Areas. The relevant areas are coloured brown.

- W1 marks the Cat 2 and Cat 3 waste storage areas
- W2 marks the dry waste(s) storage
- W3 marks the General Waste and Recycling area.

Some improvements have been identified for the existing waste storage marked as 'W1' (skips stored upon rough, unmade ground). During the reconnaissance visits, there was no visible evidence of leaching or release to ground. It must be noted that the Environment Agency has attended site several times and inspected these areas. Please refer to Section 5.9 for further information relating to these activities.

5.6 Bulk Effluent Storage

Most of all site areas are serviced by a contained drainage system. Effluent produced in internal processing areas, and rainwater and wash-down effluent in relevant external areas, are discharged to the 'process effluent' drainage system, which in turn is directed to four large containment tanks. These consist of three heavy duty plastic black 30m³ tanks, to serve as one 'bank' and one stainless steel 50m³ tank located in a separate area (Black tanks are annotated as S1 and silver tank S2 on drawing attached with main document TNP_SID/042020). The black tanks are hydraulically linked and have a high-level indicator. The area is monitored by CCTV and is in an area in constant use. Any overflow from these tanks would route back into the system (collection sumps). All tanks are emptied several times a day by a specialist waste management company.

The tanks are not bunded, however, the secondary containment (overflow re-route) controls have historically sufficiently protected any accidental release.

5.7 Diesel / Support Fuel Storage

There are two red diesel tanks at the Installation, both with a capacity of 1100 litres. They are double skinned with the filling point within the first skin. These tanks have recently been fitted with crash barriers for vehicle collision protection (on advice from the local Environment Agency). Situated on concrete with no access to drains.

Additionally, there is back up Diesel generator fuel tank (**D2** – orange, on plan); 1000 litre fuel oil, in a bunded tank. Back up fuel for generator for fridge plant, gas stunner and EV line. This tank is filled infrequently from the site fuel supplier, via tanker.

5.8 Site Drainage

There are two main routes for drainage on site, process and foul sewer drains. There are no surface water drains on the site. Effluent produced in internal processing areas, and rainwater and wash-down effluent in relevant external areas, are discharged to the 'process effluent' drainage system, which in turn is directed to four large containment tanks.

There are two cesspits on site **C1** and **C2**. C1 is located at the perimeter boundary, is underground and has a capacity of 4,000 litres. C2 is near the toilet facilities and has a capacity of 6,000 litres. There are no historical records of leaks from either of these tanks.

The site has not recorded any accidental release(s) from the process water effluent system.

5.9 Other Observations

Spill kits are strategically placed around the site and will be utilised in the event of a spillage onsite, in accordance with the site spill response procedures. All relevant operators have received spill response training.

The site is currently developing the area (W1 and W2 – Appendix 5 of main document: *Emission Points and Relevant Storage Areas*) along with the extension works, to cover the area with appropriate impermeable covering. There will be no drain access in this area, and no potential of run-off to unmade ground.

6 ASSESSMENT OF LAND POLLUTION

6.1 Assessment of the Likelihood of Pollution

The site has undertaken an assessment of the likelihood of a pollution incident from the activities undertaken on site. The results of the assessment are documented both through a comprehensive environmental aspects and impacts register: ENVR-002, issued November 2019 (this has been undertaken as part of the site's EMS); and the risk assessment process undertaken for the site Accident Management Plan: ENVR-003. A copy of this is included in Appendix 2 of the main supporting document TNP_SID/042020.

(It is noted that the accident identification process addresses all potential releases to the environment, whilst the focus of a SCR is identifying potential current or previous land, ground or groundwater contamination. The holistic site review ensured all practices were investigated. Evidence of historical practices/areas of operation that may have changed; were assessed also).

The AMP assesses the risks from site wide issues, details the prevention and mitigation measures and provides specific control procedures where required. The areas assessed are:

- Fire (and associated firewater containment);
- Refrigerant release;
- Flood;
- Loss of mains electricity;
- Storage of liquid materials;
- Hazardous waste storage (N/A at TNP, but assessed in information collection)
- Mass release of effluent collection tanks
- Releases to air (planned and fugitive)
- Accidental release to ground from contaminated surface water
- Vandalism

6.2 Pollution Risk Methodology

In accordance with EA guidance on appropriate pollution risk assessment methodology; the following have been assessed:

- *likelihood of the accident happening*
- *consequences of the accident happening*
- *measures you'll take to avoid the accident happening*
- *measures you'll take to minimise the impact if the accident does happen*

Those activities at the Installation where accidents or abnormal operations could result in releases to the environment are identified (Appendix A of Accident Management Plan ENVR-003). For each type of relevant operational activity at the Installation, the associated hazards have been identified, together with an assessment of the risk posed by the hazard.

The risk assessment has been based on the likely frequency of occurrence of the event, what substance(s) could be released to the environment, the quantities of any such substances, the environmental fate of any substances (taking into account possible pathways and receptors), the effects of any such releases on the receptors identified and the risk reduction and control measures in place. In all cases, the scale and nature of the operations at the Installation have been taken into consideration.

For each hazard so identified, the associated contingency and mitigation measures in place at the Installation are also described below. There were also some findings upon completion of the assessment process. These improvements are mentioned also.

6.3 Preventative Measures

The relevant risk assessment process identified some potential gaps in written relevant operating procedures (updating spill procedure, recording PPMs etc). These have been formalised into written environmental procedures and will be externally audited from Autumn 2020. The site PPM schedule was assessed as appropriate.

6.4 Land Pollution History

Historically the site was undeveloped until 1978. There have been no records of any significant pollution event, and the nature of activities and materials stored upon the site, it is believed that no significant potential sources of contamination have historically taken place on the site, or within the immediate surroundings.

Maps of historic land-use for the site can be viewed in Appendix 1 of this report.

6.5 Findings

Please refer to the following Preliminary Conceptual Model (PCM) collated from the evidence gained throughout the assessment process. This PCM aims to establish any potential links that may exist under the principle of source-pathway-receptor. This is presented in Table 4 below.

Table 4 – Conceptual Site Model

Source of Contamination	Pathway	Receptor	Probability and Reasoning	Consequence and Information	Risk Classification
Potentially contaminated Soils (current and previous)	Direct contact (inhalation/ ingestion)	Human end-users.	Unlikely - Good management practices evident, no significant potential sources identified and little opportunity for human exposure to contaminants	Minor – Contaminants are unlikely to be present at concentrations exceeding generic assessment criteria (GAC) and pathways mostly blocked by hardstanding	Very Low Risk
	Percolation of leachate/mobile contaminants	Ground water and surface water	Unlikely - Minor potential sources identified but good management practices in operation.	Minor - Contaminants are unlikely to be present at concentrations exceeding acceptable levels, site not in a source protection zone or drinking water safeguard zone. Nearest significant surface water is 750 m away, nearby drainage ditches unlikely to be impacted	Very Low Risk
Unidentified Potentially infilled land	Migration through permeable strata, ingress and accumulation into temp excavations.	Human End Users	Unlikely - No on or off-site potential sources identified. Atmospheric ventilation through granular soils, most likely pathway.	Severe - Acute risk to potential end users.	Low Risk
		Structures			Low Risk

7 STATEMENT OF SITE CONDITION

Groundwater and surface water are assessed to be at very low risk of contamination, originating from historical or current site activities.

As described in the evidence presented; no significant potential sources of contamination have been identified on the site or in the immediate surrounding area.

APPENDIX 1

Envirocheck © Information

(attached separately in email attachment).

APPENDIX 2

Environment Agency Screening Assessment *(Nature and Heritage Conservation Screening Report)*

Nature and Heritage Conservation

Screening Report: Bespoke installations

Reference	EPR/AP3402PK/A001
NGR	TL 98944 93160
Buffer (m)	30
Date report produced	21 February 2020
Number of maps enclosed	5

The nature conservation sites identified in the table below must be considered in your application.

Nature and heritage conservation sites	Screening distance (km)	Further information
Special Areas of Conservation (sSAC or SAC) Breckland (SAC) Norfolk Valley Fens (SAC)	10	Joint Nature Conservation Committee
Special Protection Area (pSPA or SPA) Breckland (SPA)	10	Joint Nature Conservation Committee
Sites of Special Scientific Interest (SSSI) Swangay Fen, Attleborough (SSSI)	2	Natural England
Local Wildlife Sites (LWS) East of Lower Stow Bedon Stafford's Meadow South of Shropham Hall Lake in Shropham Shropham Hall Grounds Lower Stow Bedon The Valley Lakes & River in Shropham Shropham Grove South of Mount Pleasant North of Red Bridge	2	Appropriate Local Record Centre (LRC)



Shropham Fen
Old Gravel Works

Ancient Woodland
Unnamed woodland

2

[Woodland Trust](#)

[Forestry Commission](#)

[Natural England](#)

The relevant Local Records Centre must be contacted for information on the features within local wildlife sites. A small administration charge may also be incurred for this service.


Please note we have screened this application for protected and priority sites, habitats and species for which we have information. It is however your responsibility to comply with all environmental and planning legislation, this information does not imply that no other checks or permissions will be required.

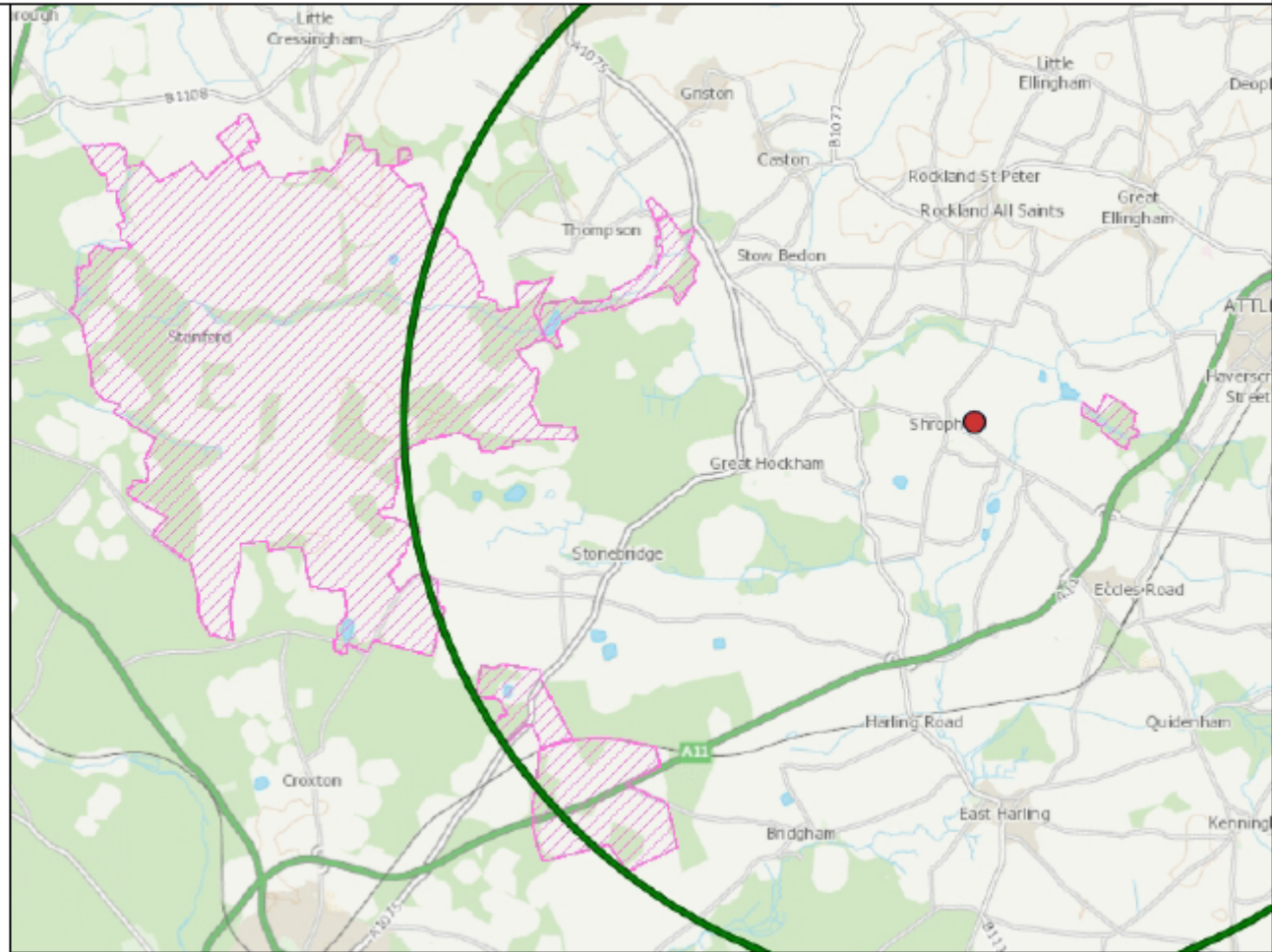
Please note, the enclosed pre-application map(s) is valid for a period of 6 months. If you plan to submit your application more than 6 months after the map(s) was generated, you must request that the screen is re-run. This will ensure that you have used the most current information on heritage and nature conservation interests in your application.

Special Areas of Conservation



Legend


 SAC (England)

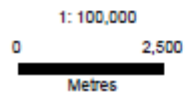
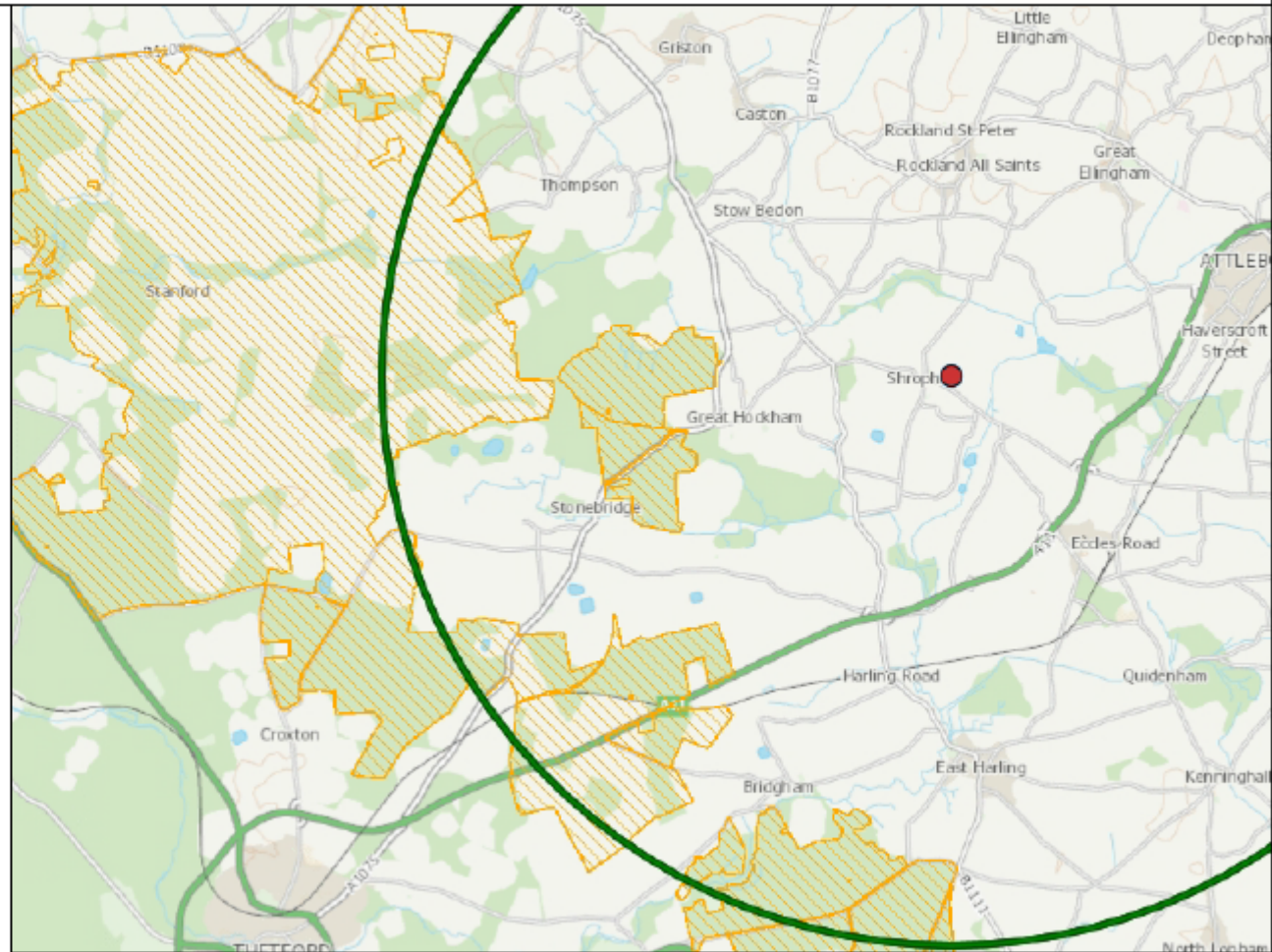


Special Protection Areas



Legend


 SPA (England)

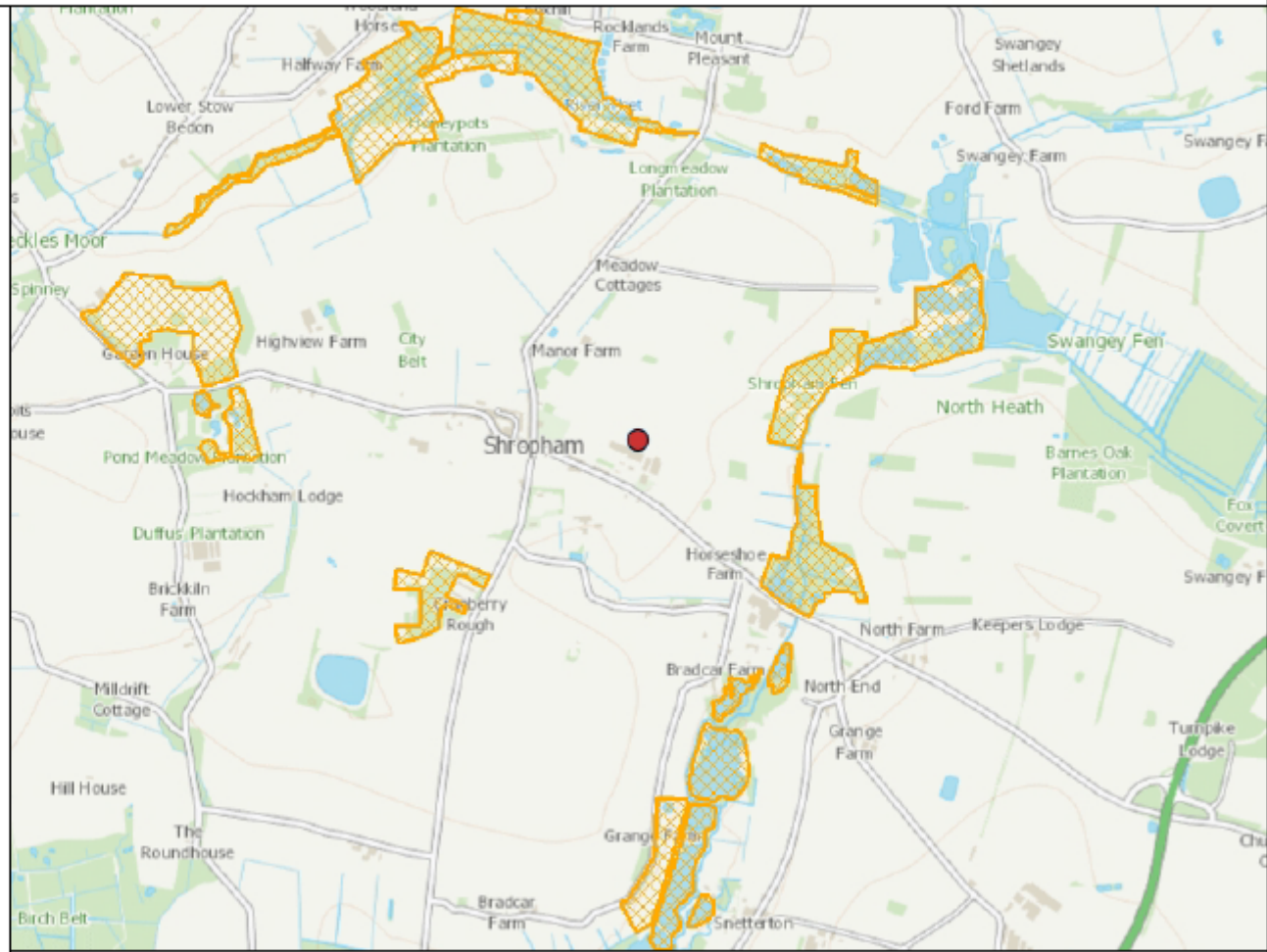


Local Wildlife Sites



Legend

-  Local Wildlife Sites



APPENDIX 3

SAC/SPAs/SSSI Citations

**EC Directive 92/43 on the Conservation of Natural Habitats and of Wild
Fauna and Flora**

Citation for Special Area of Conservation (SAC)

Name:	Breckland
Unitary Authority/County:	Norfolk, Suffolk
SAC status:	Designated on 1 April 2005
Grid reference:	TL862948
SAC EU code:	UK0019865
Area (ha):	7548.06
Component SSSI:	Barnhamcross Common SSSI, Berner's Heath, Icklingham SSSI, Bridgham and Brettenham Heaths SSSI, Cavenham - Icklingham Heaths SSSI, Cranwich Camp SSSI, Deadman's Grave, Icklingham SSSI, East Wretham Heath SSSI, Field Barn Heaths, Hilborough SSSI, Foxhole Heath, Eriswell SSSI, Gooderstone Warren SSSI, Grime's Graves SSSI, Lakenheath Warren SSSI, RAF Lakenheath SSSI, Stanford Training Area SSSI, Thetford Golf Course and Marsh SSSI, Thetford Heaths SSSI, Wangford Warren and Carr SSSI, Weather and Horn Heaths, Eriswell SSSI, Weeting Heath SSSI

Site description:

Breckland in the heart of East Anglia is a gently undulating plateau underlain by bedrock of Cretaceous Chalk, covered by thin deposits of sand and flint. The conditions during the last glaciation have given rise to the patterned ground features and ice depressions (pingos) that we see today and that are of high geological and biological importance. The continental climate, with low rainfall and free-draining soils, has led to the development of dry heath and grassland communities. Relatively lush river valleys provide a gentle contrast to the drier harsher surroundings. Occasional woods with alder *Alnus glutinosa* and willow *Salix* sp. the most dominant trees occur beside rivers and streams in the floodplains. These woods rely on high water levels and sometimes surface flooding as both river flooding or spring flows can be very important.

The dry heaths of Breckland are of the *Calluna vulgaris* – *Festuca ovina* (heather – sheep's-fescue) community. The sand sedge-dominated *Carex arenaria* sub-community is typical of areas of blown sand – a very unusual feature of this location. The highly variable soils of Breckland, with underlying chalk being largely covered with wind-blown sands, have resulted in mosaics of heather-dominated heathland, acidic grassland and calcareous grassland that are unlike those of any other site. In many places there is a linear or patterned distribution of heath and grassland, arising from fossilised soil patterns that formed under peri-glacial conditions.

Breckland is the most extensive surviving area of the rare *Festuca ovina* – *Hieracium pilosella* – *Thymus praecox* (sheep's-fescue – mouse-ear-hawkweed – wild thyme) grassland type. The grassland is rich in rare species typical of dry, winter-cold, continental areas, and approaches the features of grassland types in central Europe more than almost any other semi-natural dry grassland found in the UK.

Wangford Warren and adjoining parts of RAF Lakenheath have one of the best-preserved systems of active inland sand dunes in the UK. The habitat type, which is in part characterised

by the nationally rare grey hair-grass *Corynephorus canescens* occurring here at its only inland station, is associated with open conditions with active sand movement. The site shows the colonisation sequence from open sand to acidic grass-heath.

The Breckland meres are examples of hollows within glacial outwash deposits and are fed by water from the underlying chalk aquifer. Natural fluctuations in groundwater tables mean that these lakes occasionally dry out. The flora is dominated by stonewort – pondweed *Characeae* – *Potamogetonaceae* associations. A number of the water bodies within the site support populations of amphibians, including great crested newts *Triturus cristatus*.

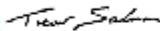
Qualifying habitats: The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*). (Alder woodland on floodplains)*
- European dry heaths
- Inland dunes with open *Corynephorus* and *Agrostis* grasslands. (Open grassland with grey-hair grass and common bent grass of inland dunes)
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation. (Naturally nutrient-rich lakes or lochs which are often dominated by pondweed)
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). (Dry grasslands and scrublands on chalk or limestone)

Qualifying species: The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Great crested newt *Triturus cristatus*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0019865
Date of registration: 14 June 2005
Signed: 
On behalf of the Secretary of State for Environment, Food and Rural Affairs



NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE UK0012892
SITENAME Norfolk Valley Fens

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1. SITE IDENTIFICATION

1.1 Type B	1.2 Site code UK0012892	Back to top
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1.3 Site name

Norfolk Valley Fens

1.4 First Compilation date 1995-05	1.6 Update date 2015-12
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1.8 Respondent:

Name/Organisation: Joint Nature Conservation Committee
Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:

Date site proposed as SCI:	1995-05
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.856111111	52.52666667

2.2 Area [ha]:

616.48

2.3 Marine area [%]

0.0

2.4 Site length [km]:

0.0

2.6 Administrative region code and name

4.2 Quality and importance

Northern Atlantic wet heaths with *Erica tetralix* for which the area is considered to support a significant presence. European dry heaths for which the area is considered to support a significant presence. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) for which the area is considered to support a significant presence. Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) for which the area is considered to support a significant presence. Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* for which the area is considered to support a significant presence, which is considered to be rare as its total extent in the United Kingdom is estimated to be less than 1000 hectares. Alkaline fens for which this is considered to be one of the best areas in the United Kingdom. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) for which the area is considered to support a significant presence. *Vertigo moulinsiana* for which this is considered to be one of the best areas in the United Kingdom. *Vertigo angustior* for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i o b]
H	K02		i
H	A03		i
H	J02		B
H	H02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]
H	A02		i
H	A04		i
H	B02		i

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,

T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

COUNTY: Norfolk

SITE NAME: SWANGEY FEN

DISTRICT: Breckland

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: Breckland District Council

National Grid Reference: TM 015932 Area: 82.3 (ha) 203.3 (ac)

Ordnance Survey Sheet 1:50,000: 144 1:10,000: TM 09 SW

Date Notified (Under 1949 Act): 1964 Date of Last Revision: –

Date Notified (Under 1981 Act): 1984 Date of Last Revision: –

Other Information:

The area of this site has been reduced. Part of the site is owned by the Otter Trust.

Reasons for Notification:

The site contains an area of species-rich, spring-fed fen of a type that is otherwise largely restricted to the Norfolk Broads. Wet woodland and grassland surround the fen, increasing the interest of the site and helping to maintain a high water-table. The River Thet passes through the site.

The fen itself contains sizeable areas of Saw Sedge *Cladium mariscus* interspersed with areas of mixed Blunt-flowered Rush *Juncus subnodulosus* and Black Bog Rush *Schoenus nigricans*. These contain a good range of associated plants, many of them of a very localised distribution. Some of the more noticeable are plants such as Grass of Parnassus *Parnassia palustris*, Fragrant Orchid *Gymnadenia conopsea*, Milk Parsley *Peucedanum palustre*, Marsh Lousewort *Pedicularis palustris*, Marsh Helleborine *Epipactis palustris*, Early Marsh Orchid *Diptychorhiza incarnata* and Marsh Pea *Lathyrus palustris*. In addition there are several less spectacular plants, small sedges such as Slender Sedge *Carex lasiocarpa* and a number of rare mosses. Tussocks of *Sphagnum* moss have also developed in these areas.

Around the Southern and Eastern sides of the fen the vegetation changes. Reed *Phragmites australis*, Sweet Grass *Glyceria* sp. and Meadowsweet *Filipendula ulmaria* are dominant and there is much less variety of plant life. This vegetational change reflects the seasonal lowering of the water-table in these areas during the summer, which appears to have been caused by drainage channels on the margins of the fen.

Scrub, mostly Sallow and Alder has invaded parts of the fen and around the margins grades into established wet woodland. Substantial blocks of wet woodland are also found to the south of the River Thet. Alder dominates the tree layer of this woodland whilst the ground vegetation consists of a mixture of wood and fen species, plants such as Enchanter's Nightshade *Circaea lutetiana*, Marsh Marigold *Caltha palustris*, Hedge Woundwort *Stachys sylvatica*, Gipsywort *Lycopus europaeus*, Hemp Agrimony *Eupatorium cannabinum* and Yellow Flag *Iris pseudacorus*.

On the higher margins of the site, this type of woodland grades into mixed Alder, Oak, Ash woodland with some Sycamore and Willow. In places there is a well-developed understorey of Hazel, Redcurrant and regenerating tree saplings. The ground vegetation contains more woodland species, including plants such as Dog's Mercury *Mercurialis perennis* that are not tolerant of flooding.

The grasslands within the site divide into two classes. On the south side of the river there is an area of unimproved grassland of considerable interest. It contains a variety of vegetation types ranging from dry acidic Bent Grass/Fescue *Agrostis/Festuca* grassland to wetter areas in which Meadowsweet, Blunt-flowered Rush and Marsh Pennywort *Hydrocotyle vulgaris* are abundant. The range of flowering plants includes Lesser Knapweed *Centaurea nigra*, Bird's-foot Trefoil *Lotus corniculatus*, Ladies Bedstraw *Galium verum*, Ragged Robin *Lycalis flor-cuculi* and Greater Bird's-foot Trefoil *Lotus uliginosus*. This area has been ungrazed for some time and patches of thistles and nettles have established themselves.

On the north side of the river there is a substantial area of cattle-grazed meadowland. This is less species-rich but is important in maintaining the water-table within Swangey Fen itself. The dykes that divide the meadows contain a range of common water plants.

The section of the River Thet that runs through the site has been extensively modified and deepened and is of little intrinsic interest. It does however determine the summer water level over a considerable proportion of the site.