

Report for Mr. & Mrs M. Seymour

# **Environmental and Historical Research Report**

SITE REPORT VIA DESK BASED RESEARCH

Garry Winterton BSC (HONs. MB Eng.  
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## **Building Plot, Whaplode, Desk Study Report**

20 October 2020 FINAL REV0

Project 270755-MJS

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## **APPENDICES**

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Building Plots,  
Stockwell Gate,  
Whaplode.  
PE12 6UE

Our Ref No. 270755-MJS

Date: 20 October 2020

## Desk Study Report

### 1. INTRODUCTION, PURPOSE & OBJECTIVES

This report has been undertaken to its suitability for the proposed development.

The purpose of this report is to provide an overview of the environmental and historical context of the site via various desk-based searches and a walkover assessment.

### 2. SITE LOCATION & DESCRIPTION

The study area and location are presented in Appendix A. A walkover survey was undertaken in October 2020. The site is centered on O.S. Grid Reference 533266 - 325065. The plot has an approximate area of 0.27 hectares. (2775m<sup>2</sup>)

The site has been occupied by Mr. & Mrs. Seymour. The site has no buildings and has been used for agricultural purposes as far back as records show. The ground conditions consist of approximately 11.5m of medium density silt sand 183 to 204 million years ago in the Jurassic and Triassic periods with 600mm of topsoil. Local environmental previously dominated by shows this general make up of ground conditions.

The North West boundaries is Stockwell Gate. The South West boundary is adjacent to Whaplode River. This is maintained by the Internal Drainage Board who require a 9m access strip for maintaining the river. The site has open farmland to the South East. The North East boundary is adjacent to Beechfield House which is residential property.

It should be noted Mr. & Mrs. Seymour also own the land directly to the South West. Photographs were taken and are presented in Appendix B.

## DEVELOPMENT HISTORY

Many maps previously issued by the Ordnance Survey were examined however as no development on the site there has been little change.

Large scale maps are presented in the Appendices. Table 1 shows the main features:

| Date      | Onsite         | Offsite   | Comments |
|-----------|----------------|-----------|----------|
| 1889      | No development | No change |          |
| 1907      | No change      | No change |          |
| 1932      | No change      | No change |          |
| 1938      | No change      | No change |          |
| 1947/50   | No change      | No change |          |
| 1960/2020 | No change      | No change |          |

**TABLE 1: SUMMARY OF HISTORICAL & POTENTIAL LAND USE**

The site was used for farmland until purchased and proposed developed for new housing. There are some domestic buildings within this area. This is largely within the flood zone 3 area but all the land adjacent has been developed. It should be noted that there has been no flooding of the site since within living memory.

The area does not appear to fall within the Petroleum Exploration Development License (PEDL) block.

## 4. ENVIRONMENTAL DATABASE SEARCH

A Groundsure Report was acquired and environmental information are summarised as follows:

| Description                             | Onsite (Y/N) | Close to Site (Y/N) | Comments                                     |
|-----------------------------------------|--------------|---------------------|----------------------------------------------|
| Landfill Site                           | N            | N                   | No                                           |
| Waste Transfer and treatment            | N            | N                   | No                                           |
| Integrated Pollution                    | N            | N                   | No                                           |
| Control licensing                       | N            | N                   | No                                           |
| Radioactive Licensing                   | N            | N                   | No                                           |
| Hazardous substances                    | N            | N                   | No                                           |
| Dangerous Substances                    | N            | N                   | No                                           |
| Accident Hazards                        | N            | N                   | No                                           |
| Emissions to air                        | N            | N                   | No                                           |
| Contraventions groundwater or pollution | N            | N                   | No                                           |
| Contemporary Land uses                  | N            | N                   | No                                           |
| Flooding                                | Y            | Y                   | Pluvial and groundwater flood risk possible. |
| Other                                   | N            | N                   | No                                           |

## 5. GEOLOGY, MINING & PREVIOUS INVESTIGATIONS

### Geology

Reference to information published by the British Geological Survey (BGS) shows It overlies the expected to comprise variable clay and silt, often calcareous with hard sub-horizon.

### Mining & Mineral Workings

There are no records of historic or recent underground mining in the immediate area.

### Previous Investigations

There have been no previous site investigations carried out in this area.

## 6. RADON

Reference to the Indicative Atlas of Radon in England and Wales shows the study area as falling within an area where less than 1% of properties may be affected by radon. It is unlikely that radon measures will be required.

## 7. HYDROGEOLOGY

The silt and clay do have the potential to store water that may be of use for many purposes. The solid geology is not considered productive in terms of providing groundwater. There is no groundwater abstraction boreholes or wells near the site.

## 8. HYDROLOGY

This area of ground is poorly drained ground and soft wet ground was noted in the extreme south of the plot during the walkover. The Whaplode River to the South West does impact on maintaining the water table.

## 9. HISTORIC CONTAMINATING LAND USES

Based on an assessment of the historical maps and environmental information provided, the site has been exposed to the following:

|                                  |            |
|----------------------------------|------------|
| <b>Major Contaminative use</b>   | None noted |
| <b>Onsite</b>                    |            |
| <b>Minor Contaminative use</b>   | None noted |
| <b>Onsite</b>                    |            |
| <b>Offsite Contaminative use</b> | None noted |
| <b>(immediate vicinity)</b>      | None noted |
| <b>Offsite Contaminative use</b> | None noted |

(wider area)

None noted

## 10. DESK BASED STUDY ASSESSMENT

The data collated from site has been assessed and the following possible receptors have been considered within a '*conceptual model*'. This is a summarised assessment which outlines the potential issues within or near the site that may impact the proposed development.

### Ground Model

Desk Study information supplemented by site investigations over a wider area suggest that there is no obvious history of potentially contaminating land, more recently, as a result of work where land was used for construction related activity associated with the development of the shallow groundwater is present within the site.

### Potential Sources

In general, potential sources of contamination relate to determinants within the made ground which may contain toxic or phytotoxic substances which may be viewed as a potential hazard. Potential sources are as follows:

➤ Ground impacted by farming activities

### Potential Pathways

These are the means by which sources of contamination may reach sensitive receptors. This may comprise:

- Dermal contact
- Ingestion
- Inhalation
- Migration in dust
- Migration in vapor's
- Groundwater
- Surface water

### Potential Receptors

There are a number of potential receptors to be considered when re-development is planned.

These may comprise:

- Construction
- Workers
- End Users
- The Public and users of adjoining land
- Property (concrete and utilities)
- Vegetation
- Controlled Waters

For a potential hazard to be present there must be a relationship between the source and the receptors (or those at risk from contamination). This is termed the *source-pathway-receptor* relationship. Assuming all 3 elements are present, there are various combinations which may appear to be relevant to this site, albeit remote. A number of these are or may be perceived to be either likely (in terms of occurrence) or unlikely and a risk rating (in terms of potential effects or impact) has been assigned accordingly. The Conceptual Model provides information on relevant relationships that are thought possible or likely based on the site's current use.

| Receptor                                 | Pathway                                  | Effects                                                 | Risk                 |
|------------------------------------------|------------------------------------------|---------------------------------------------------------|----------------------|
| Shallow Ground water from offsite source | Percolation through ground               | Contamination of perched water and drainage             | <b>LOW- MODERATE</b> |
| Shallow Groundwater from site source     | Contact with made ground or migration    | Contamination of perched Water and drainage             | <b>LOW</b>           |
| Groundwater in Bedrock                   | Percolation from perched water           | Contamination groundwater                               | <b>LOW</b>           |
| Construction Workers Site Operatives     | Dermal Contact Ingestion                 | Health Effects                                          | <b>LOW</b>           |
| Public & Neighbor's                      | Inhalation & Ingestion to Public         | Health Effects                                          | <b>LOW</b>           |
| Ingestion to Public                      | Inhalation, dermal contact and ingestion | Contamination from previous development                 | <b>LOW</b>           |
| Surface Water                            | Migration via perched water              | Contamination from drainage and perched water migration | <b>LOW</b>           |
| Property                                 | Direct Contact                           | Aggressive ground conditions                            | <b>LOW</b>           |
| Wildlife (Burrowing Mammals)             | Dermal Contact Ingestion<br>Inhalation   | Health Effects                                          | <b>LOW</b>           |

**TABLE 3: CONCEPTUAL MODEL & PRELIMINARY RISK ASSESSMENT**

## **(PERCEIVED RISK)**

This investigation has generally identified a 'Low' risk category for elements related to soil contamination within the site.

The following factors were considered in the preliminary risk assessment:

### **Contributory factors (-ve)**

- Presence of surrounding impacted sites – chemicals from crop spraying
- Permeable drift allows migration.
- High groundwater table acts as migration pathway from offsite pathways

### **Mitigating factors (+ve)**

- +Commercial development proposed is robust
- +Previous knowledge of the vicinity has not revealed any substantial detrimental impact

Substantial or significant soils contamination is not anticipated on this plot. Any raised risk from a 'low' to 'moderate' category is as a result of surrounding land uses and largely related to mineral workings and subsequent landfilling and by any residue migrating from an offsite source into the plot.

## **11. SITE INVESTIGATION REQUIREMENTS**

There have been no previous ground investigations and as there is a proposal to erect only 2 properties on the site it is not proposed to carry one out.

Geotechnical conditions will, in any case, require assessment such that foundations and pavement design can be undertaken with confidence for the re-development future proposed development. Assessment is also required to satisfy Building Regulations, for building insurance purposes.

Where the details of specific development are known in terms of structural layout and loadings, investigations should be sufficiently detailed to identify construction risks and enable any supplementary work to be planned.

The need for water analysis will depend on what is found and the results of leaching tests. However, liaison is recommended with the Local Authority.

A combination of trial pits and cable percussion boring is recommended:

- Trial Pits: enable a wide area of ground to be inspected, will enable coarse and suspect materials to be identified and to assess the stability of excavations and speed of water inflow.
- Mini rig boreholes may be used to supplement geotechnical information.

The scope of the analysis will be determined to some degree by what is found.

The Local Authority may be expected to be consulted and both the Local Authority and Environment Agency have standards which may require to be met where the conditions dictate.

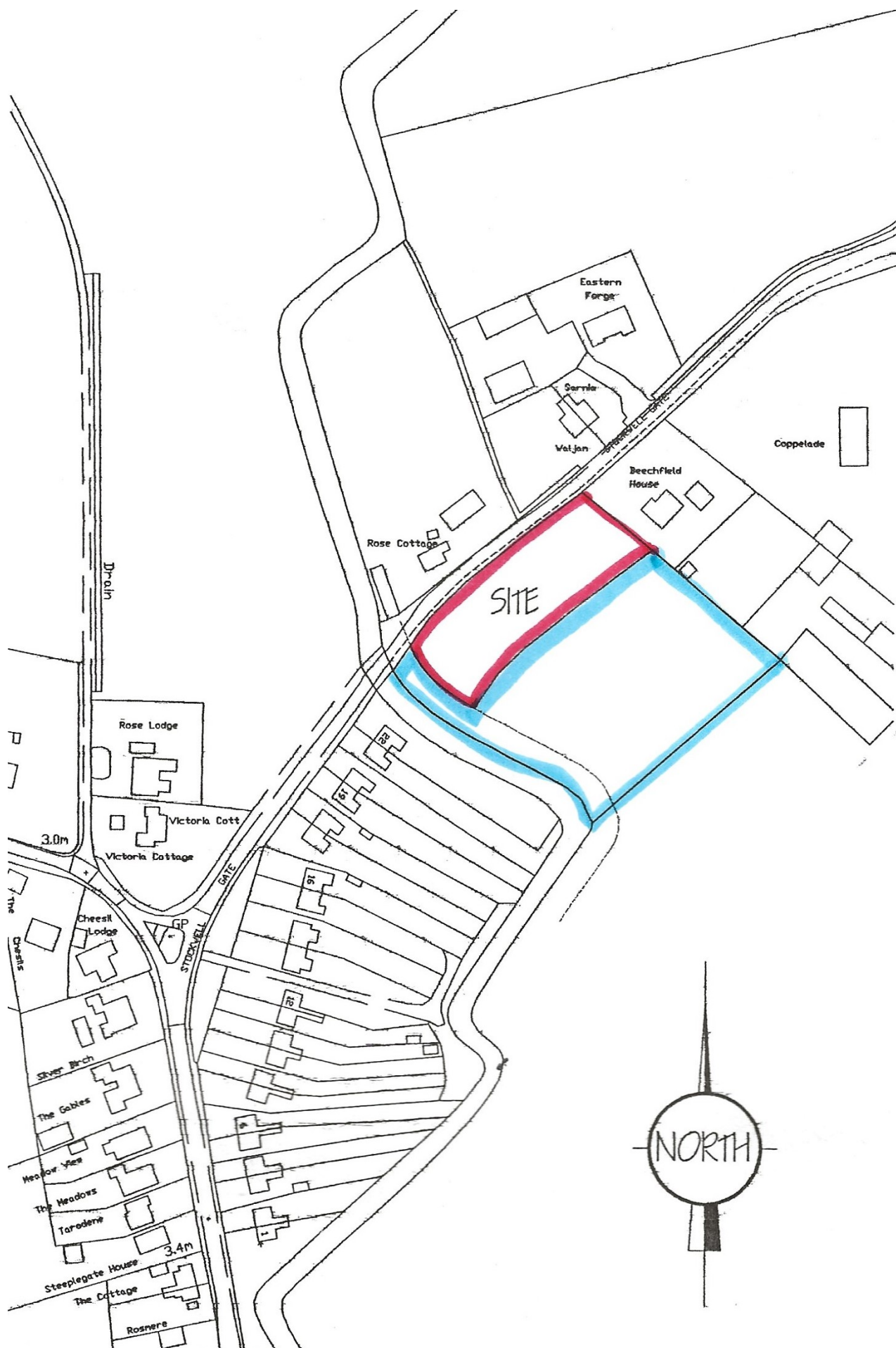
## 12. SUMMARY & CONCLUSIONS

The owner has instigated this desk study of its existing site which is currently used as its agricultural land. The following summary is provided:

- The site is currently used by the landowner.
- It is proposed to build two properties.
- All the required infer-structure would be new including the septic tank and the introduction of rainwater harvesting.
- Groundwater is believed to be close to the surface.
- The site is within zone 3 in respect of flooding. The design of the building would take account of this potential and allow for rapid clean up and reoccupation of the building.
- The Whaplode River is within 50m meters of the site.
- The site is not being exposed to underground mining. Radon is not considered an issue on this site.
- The underlying solid geology is considered non-productive and of little interest in terms of potential as a groundwater resource.
- The site is considered generally 'low risk' in terms of its potential for soils and groundwater contamination.
- Should the planned development receive the necessary planning consent, a soils investigation if necessary, will provide the necessary information to assist in the construction process and with Building Regulation approval.

Maps & Historical Maps of the Area 1888





Appendix B All Photos taken from Stockwell Gate





