GroundSure FloodInsight

Address: Collyweston Quarry,

Dear Sir/Madam,

Thank you for placing your order with CENTREMAPS. Please find enclosed the GroundSure FloodInsight report as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.
GroundSure FloodInsight
GroundSure
FloodInsight

Address: Collyweston Quarry,

Date: 12 May 2013

Client Reference: 7395

Client: CENTREMAPS

Brought to you by CENTREMAPS
Site Name: Collyweston Quarry,

Grid Reference: 499332,300754

Size of Site: 16.11 ha
Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed.

<table>
<thead>
<tr>
<th>Report Section</th>
<th>1. Environment Agency Flood Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.1 Are there any Environment Agency indicative Zone 2 floodplains within 250m of the study site?</td>
</tr>
<tr>
<td></td>
<td>1.2 Are there any Environment Agency indicative Zone 3 floodplains within 250m of the study site?</td>
</tr>
<tr>
<td></td>
<td>1.3 Are there any Flood Defences within 250m of the study site?</td>
</tr>
<tr>
<td></td>
<td>1.4 Are there any areas benefiting from Flood Defences within 250m of the study site?</td>
</tr>
<tr>
<td></td>
<td>1.5 Are there any areas used for Flood Storage within 250m of the study site?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. National Flood Risk Assessment (NaFRA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 What is the National Flood Risk Assessment (NaFRA) Flood Rating for the study site?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Historic Flood Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Has the site been subject to past flooding as recorded by the Environment Agency?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Surface Water Floods</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Is the site or any area within 50m at risk of Surface Water (Pluvial) Flooding?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Groundwater Flooding</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?</td>
</tr>
<tr>
<td>5.2 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. BGS Geological Indicators of historic flooding</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Are there any geological indicators of historic flooding within 250m of the study site?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. JBA Reservoir failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Is the property located in an area identified as being at potential risk in the event of a reservoir failure?</td>
</tr>
</tbody>
</table>
### Riparian ownership
If your land abuts a river, stream or ditch, you may have responsibility to maintain this watercourse, even if Title Deeds show the property boundary to be adjacent to the watercourse. This includes the responsibility for clearing debris and obstructions which may impede the free passage of water and fish, and also includes the responsibilities to accept flood flows through your land, even if these are caused by inadequate capacity downstream. There is no duty in common law for a landowner to improve the drainage capacity of a watercourse. Please contact GroundSure if you need further advice on riparian ownership issues relating to this property.

### Sewerage Flooding
Extreme rainfall events may overwhelm sewerage systems and cause local flooding. The water and sewerage companies within the UK are required to maintain 'DG5 – At Risk Registers' which record properties that have flooded from sewers and/or are considered to be at risk of flooding from sewers in the future. If your property is on the 'At Risk' Register, this may be recorded within a standard CON29 Drainage and Water search.
Using this Report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between GroundSure and the Client.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.
1. River and Coastal Flood Map
1. Environment Agency Flood Zones

1.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency indicative Zone 2 floodplain? No

Zone 2 floodplain estimates the annual probability of flooding as one in one thousand (0.1%) or greater from rivers and the sea but less than 1% from rivers or 0.5% from the sea. Alternatively, where information is available they may show the highest known flood level. Any relevant data is represented on Map 1 – River and Coastal Flooding: Database searched and no data found.

1.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency indicative Zone 3 floodplain? No

Zone 3 estimates the annual probability of flooding as one in one hundred (1%) or greater from rivers and a one in two hundred (0.5%) or greater from the sea. Alternatively, where information is available they may show the highest known flood level. Any relevant data is represented on Map 1 – River and Coastal Flooding. Database searched and no data found.

1.3 River and Coastal Flood Defences

Are there any Flood Defences within 250m of the study site? No

Only flood defences constructed within the last five years to Environment Agency standards are likely to be shown within this dataset. Any relevant data is represented on Map 1 – River and Coastal Flooding.

1.4 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

Any relevant data is represented on Map 1 – River and Coastal Flooding.

1.5 Areas used for Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

Flood Storage Areas are considered part of the functional floodplain, and are areas where water has to flow or be stored in times of flood. Planning Policy Statement (PPS) 25: Development and Flood Risk states that only water-compatible development and essential infrastructure should be permitted within flood storage areas, and existing development within this area should be relocated to an area with a lower risk of flooding. Any relevant data is represented on Map 1 – River and Coastal Flooding.

Notes on Flood Zone Data:

This data relates solely to flooding from rivers or the sea. The Environment Agency estimate that over 2.5 million properties are at risk of flooding within England and Wales. River flooding occurs when a watercourse cannot cope with the water draining into it from the surrounding land. This can happen, for example, when heavy rain falls on an already waterlogged catchment. Coastal flooding results from a combination of high tides and stormy conditions. If low atmospheric pressure coincides with a high tide, a tidal surge may happen which can cause serious flooding.

The GroundSure FloodInsight Report comments upon whether a property lies in proximity to Environment Agency Zone 2 and Zone 3 floodplains. The Government’s Planning Policy Statement 25 on Development and Flood Risk

Report Reference: CMAPS-CM-228622-7395-120513 Brought to you by CENTREMAPS

If you would like any further assistance regarding this report then please contact CENTREMAPS on (T) 01886 832972, (F) 01883 833485, email: groundsure@centremaps.co.uk
(PPS25) explains how flood risk should be considered at all stages of the planning and development process in order to reduce future damage to property and potential loss of life. The Government looks to planning authorities to ensure that flood risk is properly taken into account in the planning of developments to reduce the risk of flooding and the damage which floods cause.

The Environment Agency Flood Mapping Strategy covers a five-year period from 2003 to 2008 and sets out to improve the quality and coverage of data and information on actual and potential flood risk. One of the key outputs of the strategy is the production of the flood zones, to enable planning authorities to apply the sequential test (see Annex D of PPS25) for development proposals and prevent inappropriate development.

PPS25 defines the flood zones as:

- Zone 1 – little or no risk with an annual probability of flooding from rivers and the sea of less than 0.1%
- Zone 2 – low to medium risk with an annual probability of flooding of 0.1-1.0% from rivers and 0.1-0.5% from the sea.
- Zone 3 – high risk with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea.
- Flood Zone 3b/Flood Storage Areas - very high risk with the site being used as part of the functional flood plain or as a Flood Storage Area.

The flood zones provide more accurate and consistent information on flood risk using the definitions detailed in PPS25 than the previous Indicative Floodplain Map (IFM). The flood zones are the main constraint map underpinning decisions on development and flood risk.

Flood Defences

Flood defences seek to reduce the risk of flooding and to safeguard life, protect property, sustain economic activity and the natural environment. Flood defences are designed to protect against flood events of a particular magnitude, expressed as risk in any one year. For example, defences in urban areas may be built to provide protection against flood events of a size which might occur on average once in one hundred years or less.

All flood defences constructed during the last five years have a standard of protection equal to or better than 1% for rivers and 0.5% from the sea. Some additional defences, which may be older or may have been designed to provide a lower standard of protection, are also shown within the data GroundSure provides.

Flood Storage Areas

Flood Storage Areas may also act as flood defences. A flood storage area may also be referred to as a balancing reservoir, storage basin or balancing pond. Its purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval.

A flood storage area may take the form of a wet or dry reservoir. A wet reservoir is a water storage facility in which storage can be effected by allowing water levels to rise during flood times. A dry reservoir is typically adjacent to a river and comprises an enclosed area that accepts water only at peak times. These areas are also referred to as Zone 3b or ‘the functional floodplain’ and has a 5% or greater chance of flooding in any given year, or is designed to flood in the event of an extreme (0.1%) flood or another probability which may be agreed between the Local Planning Authority and the Environment Agency, including water conveyance routes. Development within Flood Storage Areas is severely restricted.
2.1 National Flood Risk Assessment (NaFRA 2008) Flood Rating (River and Coastal)

What is the highest risk of flooding onsite? Negligible

The Environment Agency NaFRA database provides an indication of flood river and coastal risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach, and the distance from the river or the sea.

Most insurance companies providing cover for flood risk use this data as the basis of their risk model, although they may also utilise additional information such as claims histories, which may further influence their decision. Where a significant risk of flooding is identified flood risk insurance may be difficult to obtain without further work being undertaken. Property owners of sites within Low and Moderate risk areas are still considered to be at risk of flooding and insurance premiums may be increased as a result. Owners of properties within Low, Moderate and Significant risk areas, as well as areas yet to receive a full assessment are advised to sign up to the Environment Agency’s Floodline Warning scheme.

NaFRA data for the study site indicates the property has a negligible (less than 1 in 1000) chance of flooding in any given year.

Notes on NaFRA data:

This information is based on the very latest Environment Agency National Flood Risk Assessment (NaFRA 2008) data. This data has been created by dividing the flood plain into 50m squares, or smaller areas where a square if intersected by a river or coastline. These are called impact cells. The method then calculates the likelihood that the centre of each impact cell will start to flood using a number of different flood scenarios.

Most insurance companies providing cover for flood risk use this data as the basis of their risk model, although they may also utilise additional information such as claims histories, which may further influence their decision. Where a significant risk of flooding is identified flood risk insurance may be difficult to obtain without further work being undertaken. Property owners of sites within Low and Moderate risk areas are still considered to be at risk of flooding and insurance premiums may be increased as a result. Owners of properties within Low, Moderate and Significant risk areas are advised to sign up to the Environment Agency’s Floodline Warning scheme. The probability estimates for NaFRA risk bands are as follows:

- Negligible – the chance of flooding from rivers or the sea is considered to be less than 0.1% (1 in 1000)
- Low – the chance of flooding from rivers or the sea is greater than 0.1% (1 in 1000) but less than 0.5% (1 in 200)
- Moderate - the chance of flooding from rivers or the sea is greater than 0.5% (1 in 200) but less than 1.3% (1 in 75)
- Significant – the chance of flooding from rivers or the sea is greater than 1.3% (1 in 75)

Additionally, a site may fall within an area not yet fully assessed within NaFRA – noted as ‘No data available’ or ‘No Result’. These areas tend to fall within existing floodplains, and hence a cautionary approach is taken and these areas are treated as though they have the potential to lie within areas considered to be at Significant risk of flooding.
3. Historic Flooding Events

Historic Flooding Legend

- Site Outline
- Historic Flood Events
- Search Buffers (m)

Report Reference: CMAPS-CM-228622-7395-120513

If you would like any further assistance regarding this report then please contact CENTREMAPS on (T) 01886 832972, (F) 01883 833485, email: groundsure@centremaps.co.uk
3.1 Historic Flood Outlines

Has the site or any area within 250m been subject to historic flooding as recorded by the Environment Agency? No

This database shows the individual footprint of every flood event recorded by the Environment Agency and previous bodies.

Any records found within the search radius are displayed on Map 3 – Historic Flooding Events.

Notes on Historic Flooding data:

Over 21,000 separate events are recorded within this database, dating back to 1947. This data is used to understand where flooding has occurred in the past and provides details as available. Absence of a historic flood event for an area does not mean that the area has never flooded, but only that the Environment Agency do not currently have records of flooding within the area. Equally, a record of a flood footprint in previous years does not mean that an area will flood again, and this information does not take account of flood management schemes and improved flood defences.
4. JBA Surface Water (Pluvial) Flood Map

Surface Water (Pluvial) Flood Legend

4.1 JBA Surface (Pluvial) Water Flooding

Surface Water (pluvial) flooding is defined as flooding caused by rainfall-generated overland flow before the runoff enters a watercourse or sewer. In such events, sewerage and drainage systems and surface watercourses may be entirely overwhelmed.

Surface Water (pluvial) flooding will usually be a result of extreme rainfall events, though may also occur when lesser amounts of rain falls on land which has low permeability and/or is already saturated, frozen or developed. In such cases overland flow and 'ponding' in topographical depressions may occur.

What is the risk of pluvial flooding at the study site? Negligible

Guidance: No guidance required.

This data is provided by JBA Consulting, © Jeremy Benn Associates Limited 2008/2009

The following pluvial (surface water) flood risk records within 50m of the study site are shown on the JBA Surface Water Flooding Map:

<table>
<thead>
<tr>
<th>Distance</th>
<th>Direction</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>SE</td>
<td>Significant</td>
</tr>
<tr>
<td>15.0</td>
<td>SE</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>23.0</td>
<td>E</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>29.0</td>
<td>E</td>
<td>Low</td>
</tr>
<tr>
<td>33.0</td>
<td>E</td>
<td>Significant</td>
</tr>
<tr>
<td>33.0</td>
<td>SE</td>
<td>Significant</td>
</tr>
<tr>
<td>34.0</td>
<td>N</td>
<td>Low</td>
</tr>
<tr>
<td>35.0</td>
<td>N</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>36.0</td>
<td>SE</td>
<td>Significant</td>
</tr>
<tr>
<td>37.0</td>
<td>N</td>
<td>Low</td>
</tr>
<tr>
<td>38.0</td>
<td>N</td>
<td>Low</td>
</tr>
<tr>
<td>39.0</td>
<td>E</td>
<td>Low</td>
</tr>
<tr>
<td>39.0</td>
<td>SE</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>39.0</td>
<td>N</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>40.0</td>
<td>N</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>41.0</td>
<td>N</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>41.0</td>
<td>E</td>
<td>Significant</td>
</tr>
<tr>
<td>42.0</td>
<td>N</td>
<td>Low</td>
</tr>
<tr>
<td>44.0</td>
<td>N</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>44.0</td>
<td>N</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>45.0</td>
<td>N</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>46.0</td>
<td>E</td>
<td>Significant</td>
</tr>
<tr>
<td>47.0</td>
<td>E</td>
<td>Low</td>
</tr>
<tr>
<td>47.0</td>
<td>E</td>
<td>Low</td>
</tr>
<tr>
<td>48.0</td>
<td>NW</td>
<td>Low</td>
</tr>
<tr>
<td>48.0</td>
<td>E</td>
<td>Significant</td>
</tr>
<tr>
<td>49.0</td>
<td>E</td>
<td>Low</td>
</tr>
<tr>
<td>50.0</td>
<td>E</td>
<td>Low to Moderate</td>
</tr>
</tbody>
</table>

Notes on Surface water (Pluvial) Flooding data:

JBA Consulting surface water flood map identifies areas likely to flood following extreme rainfall events, i.e. land naturally vulnerable to surface water or “pluvial” flooding. This data set was produced by simulating 1 in 75 year, 1 in 200 year and 1 in 1000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though older ones may even flood in a 1 in 5 year rainstorm event.

The model provides the maximum depth of flooding in each 5m "cell" of topographical mapping coverage. The maps include 5 bands indicating areas of increasing natural vulnerability to surface water flooding. These are:

- 0.1m or greater in a 1 in 1,000 year rainfall event - Low
- Between 0.1m and 0.3m in a 1 in 200 year rainfall event – Low to Moderate
- Between 0.3m and 1.0m in a 1 in 200 year rainfall event - Moderate
- Greater than 1.0m in a 1 in 200 year rainfall event – High
- Greater than 0.1m in a 1 in 75 year rainfall event – Significant

Report Reference: CMAPS-CM-228622-7395-120513  Brought to you by CENTREMAPS

If you would like any further assistance regarding this report then please contact CENTREMAPS on (T) 01886 832972, (F) 01883 833485, email: groundsure@centremaps.co.uk
5. Groundwater Flooding Map

BGS Groundwater Flood Legend

5.1 Groundwater Flooding Susceptibility Areas

Are there any British Geological Survey groundwater flooding susceptibility flood areas within 50m of the boundary of the study site?  Yes

What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?  High

Where high groundwater flooding susceptibility is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

5.2 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result?  High

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

Notes on Groundwater Flooding data:

The British Geological Survey (BGS) Susceptibility to Groundwater Flooding hazard dataset identifies areas where geological conditions could potentially enable groundwater flooding to occur and where groundwater may come close to the ground surface. The dataset is supplied with confidence information which provides an indication of the resolution and quality of the data behind the susceptibility assessment.

The susceptibility data is suitable for use for regional or national planning purposes where the groundwater flooding information will be used along with a range of other relevant information to inform land-use planning decisions. It might also be used in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information, to establish relative, but not absolute, risk of groundwater flooding at a resolution of greater than a few hundred metres. It should be noted that the susceptibility data is based entirely upon geological data, and does not take into account topography, actual depths of water tables etc.

In all cases it is strongly recommended that the confidence data is used in conjunction with the groundwater flooding susceptibility data. The susceptibility data should not be used on its own to make planning decisions at any scale, and, in particular, should not be used to inform planning decisions at the site scale. The susceptibility data cannot be used on its own to indicate risk of groundwater flooding and is merely an indication of the susceptibility of certain geological deposits to groundwater flooding, not an indication of likelihood of such flooding occurring.

The susceptibility to groundwater flooding is calibrated on a fivefold scale by the BGS:-

- Where susceptibility is not applicable, this means that you need take no further action in relation to groundwater hazard in this area.
- Where low susceptibility is indicated, this means that, given the geological conditions, there may be a groundwater flooding hazard. Unless other relevant information, e.g., records of previous flooding suggests groundwater flooding has occurred before in this area, you need take no further action in relation to groundwater flooding hazard. If there are records of previous incidences of groundwater flooding, then is recommended that other information e.g. rainfall history, property type, and land drainage information in addition to previous records of flooding be investigated in order to establish relative, but not absolute, risk of groundwater flooding.
- Where moderate susceptibility is indicated, this means that, given the geological conditions, there may be a groundwater flooding hazard. Unless other relevant information, e.g., records of previous flooding suggests groundwater flooding has occurred before in this area, you need take no further action in relation to groundwater flooding hazard. If there are records of previous incidences of groundwater flooding, then is recommended that other information e.g. rainfall history, property type, and land drainage information in addition to previous records of flooding be investigated in order to establish relative, but not absolute, risk of groundwater flooding.
- Where moderately high susceptibility is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other
relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

- Where high susceptibility is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

The confidence rating is also measured on a fivefold scale - Low, Moderately Low, Moderate, Moderately High and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.
6. BGS Geological Indicators of Flooding

Are there any geological indicators of flooding within 250m of the study site?  

No

This dataset identifies the presence of superficial geological deposits which indicate that the site may be, or have been in the past, vulnerable to inland and/or coastal flooding. This assessment does not take account of any man-made factors such as flood protection schemes, and the data behind the report are purely geological.

Notes on BGS Geological Indicators of Flooding data:

The BGS Geological Indicators of Flooding (GIF) data set is a digital map based on the BGS Digital Geological Map of Great Britain at the 1:50,000 scale (DiGMapGB-50). It was produced by characterising Superficial (Drift) Deposits on DiGMapGB-50 in terms of their likely vulnerability to flooding, either from coastal or inland water flow. These Superficial Deposits are considered ‘recent’ in geological terms, most having been formed in the later parts of the Quaternary geological period (i.e. within the last few tens of thousands of years). Observations made during recent major inland and coastal flooding events have demonstrated that the erosion and deposition of these recent geological sediments have produced subtle topographical variations, resulting in landforms such as fluvial and coastal floodplains. The mapping of these landforms, in conjunction with the fluvial and/or coastal deposits that underlie them, has in turn determined the extent of previous coastal and inland flooding.

On this basis, the floodplains which are at greatest risk from flooding can be both visualised and defined by Superficial Deposits as depicted on geological maps. These include deposits such as river alluvium and lacustrine (lake) alluvium, as well as the First River Terrace or ‘Floodplain terrace’ (raised flat areas adjacent to or within floodplains, which represent the level of the floodplain prior to the most recent episode of down-cutting). Older and higher river terraces have been excluded as they lie outside the geologically defined floodplain. Areas at risk from coastal inundation are similarly characterised by a range of estuarine or marine deposits that include, for example, tidal flats.
7. JBA Reservoir Failure Impact Modelling

Is the property located in an area identified as being at potential risk in the event of a reservoir failure?  No

JBA consulting have modelled the flooding impact from 1,700 reservoirs in England and Wales, should there be a catastrophic failure of a reservoir wall or embankment.

Guidance: None required

Notes on Reservoir Failure Impact data:

This dataset identified area that are most likely to flood following the sudden catastrophic failure of a reservoir and is provided by JBA Consulting. JBA has identified over 1,700 reservoirs that pose a risk to people and property. These maps identify properties that would flood in the unlikely event of the failure of the reservoir’s dam or embankment. Empirical methods were used to predict the flow that would result from the failure which was then modelled onto high resolution Digital Terrain Models (DTM) using JBA’s advanced 2D hydraulic modelling techniques. The model provides the maximum depth of flooding in each cell of the DTM.
8. Contacts

CENTREMAPS
Telephone: 01886 832972
groundsure@centremaps.co.uk

Directors: M C Walker, MInst C.E.S., C M Walker, S J Hawkins BSc (Hons), S E Stewart BSc (Hons)
Registered No. 1890261 Registered in England and Wales
Registered Company: Laser Surveys Limited
Brockamin House, Leigh, Worcester, WR6 5JU.

British Geological Survey (England & Wales)
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143. Fax: 0115 936 3276. Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk
British Geological Survey Reports and general geological enquiries

Environment Agency
Floodline tel: 0845 988 1188
General enquiry tel: 0870 506 506
Web: www.environment-agency.gov.uk
Email: enquiries@environment-agency.gov.uk

JBA Consulting
South Barn,
Broughton Hall,
Skipton
BD23 3AE
01756 799919

Ordnance Survey
Romsey Road
Southampton SO16 4GU
Tel: 08456 050505

Local Authority
Authority: East Northamptonshire District Council
Phone: 01832 742000
Web: www.east-northamptonshire.gov.uk
Address: East Northamptonshire House, Cedar Drive, Thrapston, Northants, NN14 4LZ

Get Mapping PLC
Virginia Villas, High Street, Hartley Witney, Hampshire RG27 8NW
Tel: 01252 845444

Acknowledgements

Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028].

This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.
6.4 The Client acknowledges that the proprietary rights subsisting in copyright, database rights and any other intellectual property rights in respect of any data and information contained in any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.3.

6.5 The Client shall (and shall procure that any recipients of the Report as permitted under clause 4.2 shall):

3.4 The Client shall not and shall not knowingly permit the Beneficiary to, save as expressly permitted by these terms and conditions, re-sell, alter, add to, amend or use out of context the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.3.

3.1 The Client shall ensure the Beneficiary complies with and is bound by the terms and conditions set out in the Contract and shall provide that Groundsure may in its own right enforce any terms and conditions against the Beneficiary pursuant to the Contracts (Rights of Third parties) Act 1999, for all purposes of the Contract.

2.2 GroundSure shall exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services.

2.5 If a Client/Beneficiary requests insurance in conjunction with or as a result of the Services, GroundSure shall use reasonable endeavours to procure such insurance, but makes no warranty that such insurance shall be available from insurers or offered on reasonable terms. GroundSure does not endorse or recommend any particular insurance product, policy or insurer. Any insurance purchased shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. The Client/Beneficiary shall be solely responsible for ensuring that the insurance policy requested and/or obtained is suitable for its requirements and has not been procured by the Client/Beneficiary in reliance on any statement or representation made by GroundSure.

5.2 Unless GroundSure requires prepayment, the Client shall promptly pay all fees disbursements and other monies due to GroundSure in full without deduction, counterclaim or set off together with such value added tax or other tax as may be required within 30 days from the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client/Beneficiary. For the avoidance of doubt, Groundsure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or any third party.

5.1 GroundSure shall charge the Client fees at the rate and frequency specified in the Contract. In the case of Consultancy Services, with all proper disbursements incurred by GroundSure in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services and the Client/Beneficiary. For the avoidance of doubt, Groundsure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or any third party.

3.3 Where Client/Beneficiary approval or decision is required, such approval or decision shall be given or procured in reasonable time as not to delay or disrupt the performance of any other part of the Services.

4.6 Notwithstanding clause 4.5, if the Client acts in a professional capacity, it may make reasonable use of a Report and/or findings made as a result of Consultancy Services to advise or assist their clients or any other part of the Services.

3.2 The Client shall (or shall procure that the Beneficiary shall) supply to GroundSure as soon as practicable and without charge all information necessary and accurate relevant data including any specific and/or unusual environmental information relating to the Site known to the Client/Beneficiary and agrees that it shall notify GroundSure of any changes in the information which the Client/Beneficiary shall inform GroundSure who shall at all times and in keeping with and in accordance with clause 6.3. Any insurance purchased shall be subject solely to the terms of the policy issued by insurers and GroundSure will have no liability therefor. The Client/Beneficiary shall be solely responsible for ensuring that the insurance policy requested and/or obtained is suitable for its requirements and has not been procured by the Client/Beneficiary in reliance on any statement or representation made by GroundSure.

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein. The Client and Beneficiary shall ensure that the information supplied to GroundSure is complete and accurate.

4.4 GroundSure's quotations/proposals are valid for a period of 30 days only. GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or where GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

3.5 The Client is responsible for maintaining the confidentiality of its user name and password if using GroundSure's internet ordering service and accepts responsibility for all activity that occurs under such account and password.

2.4 Terms and conditions appearing on a Client's order form, printed stationary or other communication, including invoices, to GroundSure, its employees, servants, agents or any person or firm or company which any person or company, its employees, servants, agents or any person or firm or company acting in any capacity or for dealing shall be of no effect and these terms and conditions shall prevail over all others.

4.3 GroundSure's written proposal or Order Website or Order shall not be construed as an offer to supply the Services but only as an invitation to treat and GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or where GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

3.6 The Client may at any time and from time to time require GroundSure to provide or perform additional services not contemplated in the Contract.

4.5 The Client shall not and shall not knowingly permit any person (including the Beneficiary) who is provided with a copy of any Report, (except as permitted herein or by separate agreement with GroundSure) to use or disclose the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.3.

6.1 Subject to the provisions of clause 4.1, the Client and the Beneficiary hereby acknowledge that all Intellectual Property in the Services and Content are and shall remain owned by GroundSure.

2.3 It is the Client's responsibility to ensure that any insurance which the Client/Beneficiary may procure and maintain in respect of the Site is adequate and sufficient to cover the Client/Beneficiary in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services and the Client/Beneficiary. For the avoidance of doubt, Groundsure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or any third party.

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein. The Client and Beneficiary shall ensure that the information supplied to GroundSure is complete and accurate.
8.1 In the event that GroundSure reasonably believes that the Client or Beneficiary as applicable has not provided the information or assistance required to enable the proper

7.8 Nothing in these terms and conditions:

7.5 Any claim under the Contract in relation to Data Reports, Mapping and Risk Screening Reports, must be brought within six years from the date when the Beneficiary became aware

7.4 For the duration of the liability periods set out in clauses 7.5 and 7.6 below, GroundSure shall maintain professional indemnity insurance in respect of its liability under these terms

11.6 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:

11.4 Save as expressly provided in clauses 4.2, 4.3, 6.3 and 11.5, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act

11.2 GroundSure reserves the right to amend these terms and conditions. No variation to these terms shall be valid unless signed by an authorised representative of GroundSure.

11.1 The mapping contained in the Services is protected by Crown copyright and must not be used for any purpose outside the context of the Services or as specifically provided in

10.2 In the event of termination/suspension of the Contract under clauses 8 or 9, the Client shall pay to GroundSure all and any fees payable in respect of the performance of the Services until such time as any such deficiency has been made good.

8. GroundSure right to suspend or terminate

7.1 THE CLIENT'S ATTENTION IS DRAWN TO THIS PROVISION

6.8 Save as otherwise set out in these terms and conditions, any information provided by one party ("Disclosing Party") to the other party ("Receiving Party") shall be treated as confidential and only used for the purposes of these terms and conditions, except in so far as the Receiving Party is authorised by the Disclosing Party to provide such information in whole or in part to a third party.

7 Liability

9. Client’s Right to Terminate and Suspend

9.1 Subject to clause 10.2, the Client may at any time after commencement of the Services by notice in writing to GroundSure require GroundSure to terminate or suspend immediately

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination or any suspension of the Services, GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed

4 Not combine the Services with or incorporate such Services into any other information data or service; and

3 always state whether or not the data has been modified, added to or enhanced.

2 Beneficiary shall not be in breach of this clause 6.5(v) where such reformatting is in the normal course of providing advice based upon the Services,

1.3 Any data included in the Client's possession that is not in the public domain or otherwise available to the public at the date of delivery to the Beneficiary. Any proprietary rights to

1.2 Any data included in the Client's possession that is not in the public domain or otherwise available to the public at the date of delivery to the Beneficiary. Any proprietary rights to

1.1 Any data included in the Client's possession that is not in the public domain or otherwise available to the public at the date of delivery to the Beneficiary. Any proprietary rights to

© GroundSure Limited January 2012

© CENTREMAPS on (T) 01886 832972, (F) 01883 833485, email: groundsure@centremaps.co.uk
Customer services line: 03708 506 506
Calls to 03 numbers cost the same as calls to standard geographic numbers (i.e. numbers beginning with 01 or 02).

Northamptonshire County Council
Planning Services, Floor 3
Guildhall Road Block
County Hall
Northampton
NN1 1DN

Our ref: AN/2013/117886/01-L01
Your ref: L01
Date: 25 September 2013

FAO Mark Laurenson

Dear Sir

Proposed extension to Collyweston Quarry Duddington Northamptonshire

Thank you for referring the above pre-application enquiry, which was received on 04 September 2013.

We have considered the Flood Risk Assessment (FRA) (reference CMAPS-CM-228622-7395-120513) dated 12 May 2013, Water Management Report (reference WEL085) dated 20 June 2013 and Environmental Statement dated August 2013 and provide the following comments:

**Flood Risk Management**

We have assessed the FRA and Water Management Report against the requirements set out in paragraph 9 of the Technical Guidance to the National Planning Policy Framework and are currently unable to accurately assess the potential flood risks arising from the proposed development at this location.

We therefore recommend that the following changes are made to the FRA and Water Management Report before being submitted in support of any future planning application:

**Clarification on the restoration work.**

1. Further information needs to be provided in relation to pre and post restoration levels because changes to levels may impact upon run-off. Section 3.3 of the Water Management Report states that ‘no increase in run-off potential is envisaged with no consequent impacts arising from surface water run-off likely to occur west of the site’.

2. Further information needs to be provided in relation to how existing surface water drainage rates will be restored throughout the site. Specifically, a detailed surface water strategy should be provided.

Details regarding post restoration soil type should be provided because this may impact upon run-off rates. Any increase in surface water run-off should be attenuated for up to the 1% AEP with climate change and cut-off swales or French drains may be required to intercept overland flows to ensure that flood risk is not increased to the surrounding...
area and third parties.

If the FRA and Water Management Reports are updated to include the points highlighted above, we would have no objection to any planning application for the proposed development at this location from a flood risk perspective. We would secure the implementation of the FRA by way of a planning condition on any planning permission.

Should the applicant or agent wish to discuss the above points with us, they should contact Rebecca Bristow (Partnership and Strategic Overview) on number 01536 385228.

**Groundwater**
The Water Management Report indicates that groundwater will be located below the base of the quarrying activity. We therefore consider the proposed development at this location to pose a low risk to groundwater.

*Please note that our advice has been given in good faith on the basis of the information supplied with your request. The advice is given without prejudice to any further consultation, information or examination that might arise through the Environment Agency’s duties or statutory roles leading to formal advice in the planning process, or our decision making on permits and consents.*

Specifically, you have asked us to comment on the issue of flood risk and groundwater only. In respect of this, we have not considered wider planning issues for example land contamination, pollution or foul drainage. All of these factors might have the potential to alter our advice on the suitability of the development and operations proposed through your enquiry.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me on the number below.

Yours faithfully

**Jennifer Moffatt**  
Sustainable Places - Planning Advisor

Direct dial 01536 385165  
Direct e-mail jennifer.moffatt@environment-agency.gov.uk

Awarded to the Environment, Planning & Engagement Department, Anglian Region, Northern Area
Dear Mr Harper

Proposed extension to Collyweston Quarry
Collyweston Quarry, Peterborough Road, Duddington, Northamptonshire, PE9 3QA

Thank you for your email (dated 07 November 2013) and providing confirmation of the update to the flood risk assessment (FRA).

We confirm that the survey data is adequate and the revised wording appropriate.

We look forward to seeing the revised FRA through consultation from your local Authority.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me on the number below.

Yours sincerely

Mrs Sharon Nolan
Planning Liaison Officer

Direct dial 01536 385229
Direct fax 01536 411354
Direct e-mail sharon.nolan@environment-agency.gov.uk