PHASE 1 ENVIRONMENTAL ASSESSMENT
FOR A PROPOSED EXTENSION TO
TODBER CARAVAN PARK, BURNLEY ROAD, GISBURN

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1.0 INTRODUCTION

1.01 Following instructions from Bilfinger GVA on behalf of Park Resorts Ltd on 26 February 2014, CoDA Structures have undertaken an appraisal of a proposed caravan park extension at Todber Caravan Park, Burnley Road, Gisburn.

1.02 The land to the north of the site is occupied by the existing caravan park.

1.03 It is proposed to extend the existing caravan park on an area of land to the south of the existing site.

1.04 Sections 2.0 – 7.0 of this report undertake a desk based assessment to determine the environmental quality of the land at the site and to identify the potential for any environmental risks as follows:-

- to establish the likely extent of any potential contamination at the site as a result of its current and previous use;

- to establish the sensitivity of the site in relation to the site's geology, hydrogeology and hydrology;

- to assess the significance of any potential contamination at the site with respect to possible harm to the surrounding environment and site end users;

- to provide recommendations for further works as appropriate.

1.05 The interpretation provided in this report is based upon information gathered from public data sources.

1.06 The local authority is Ribble Valley Borough Council (RVBC).

2.0 LOCATION, TOPOGRAPHY & CURRENT CONDITION

2.01 The site is located to the east of Burnley Road (A682) and is approximately 10 miles to the northeast of Clitheroe Town Centre. A site location plan (Fig. 1) is attached in Appendix B.

2.02 The Ordnance Survey co-ordinates for the centre of the site are 383310mE, 446540mN.

2.03 The site is approximately 2.8 hectares in area.

2.04 The boundaries of the site are defined as follows:-

- Northern boundary : Undefined line to the existing caravan park;

- South eastern boundary :

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Project No: 7486
Date: 08 June 2015
2.05 The site can be accessed from the existing caravan park.

2.06 A site walk-over was undertaken during April 2015 and the following noted:-
- there are no obvious visual signs of contamination on the site.
- the site is undeveloped but a new sewage treatment plant to serve the existing caravan park has been recently constructed.
- reed beds from the former sewage treatment plant are still present.

2.07 The general fall of the site is to the west. Site levels vary as follows:-

<table>
<thead>
<tr>
<th>Location</th>
<th>Level (mAOD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern boundary</td>
<td>186.20 – 191.61</td>
</tr>
<tr>
<td>South eastern boundary</td>
<td>189.51 – 195.56</td>
</tr>
<tr>
<td>South western boundaries</td>
<td>185.04 – 190.25</td>
</tr>
<tr>
<td>Eastern boundary</td>
<td>189.20 – 195.56</td>
</tr>
</tbody>
</table>

2.08 A site topographical survey (Fig. 2) is attached in Appendix C.

2.09 A site aerial photograph is attached in Appendix D.
### 3.0 HISTORIC SITE USAGE

3.01 Extracts from Ordnance Survey Sheets dating back to 1853 have been examined and the following constitutes a brief history of the entire site and the surrounding land:

<table>
<thead>
<tr>
<th>Map date &amp; Scale</th>
<th>On-site Features</th>
<th>Features within 250m of site</th>
<th>Features within 1000m of site</th>
</tr>
</thead>
<tbody>
<tr>
<td>1853 1:10,000</td>
<td>- the site is undeveloped.</td>
<td>- the surrounding area is predominantly undeveloped; - nursery to the east; - small quarry adjacent the north western sector of the site.</td>
<td>- the surrounding area is predominantly undeveloped; - quarries to the north and northeast; - village of Howgill to the southwest; - mill to the southwest.</td>
</tr>
<tr>
<td>1894 1:2,500</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
<td>- not applicable (N/A);</td>
</tr>
<tr>
<td>1896 1:10,000</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
</tr>
<tr>
<td>1909 1:2,500</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
<td>- N/A</td>
</tr>
<tr>
<td>1909/11 sheets 1:10,000</td>
<td>- no significant change noted.</td>
<td>- small development adjacent the western boundary.</td>
<td>- no significant change noted.</td>
</tr>
<tr>
<td>1914 1:10,000 map incomplete</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
</tr>
<tr>
<td>1955 1:10,000</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
</tr>
<tr>
<td>1972 1:2,500</td>
<td>- no significant change noted.</td>
<td>- Todber Caravan Park to the north.</td>
<td>- N/A</td>
</tr>
<tr>
<td>1975 1:10,000</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
<td>- caravan park to the northwest.</td>
</tr>
<tr>
<td>1994 1:2,500</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
<td>- N/A</td>
</tr>
<tr>
<td>2006 1:10,000</td>
<td>- no significant change noted.</td>
<td>- expansion of the existing caravan park to the northwest.</td>
<td>- no significant change noted.</td>
</tr>
<tr>
<td>2015 1:10,000</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
<td>- no significant change noted.</td>
</tr>
</tbody>
</table>

3.02 Historic Ordnance Survey plans are attached in Appendix E.
4.0 GEOLGY AND HYDROGEOLOGY

4.01 Geology:

1:50,000 British Geological Survey (BGS) Sheet 68 Clitheroe indicates the following:-

- The site is overlain with glacial boulder clay.
- The site is underlain by Limestone of the Dinantian Age.
- No faults lie within 1000m of the site.

4.02 Mining & Minerals:

A mining report has not been obtained for the site as the site is not in a coal measures geological area.

There are 3 no. recorded BGS mineral sites within 1000m of the site and details are summarised as follows:-

Location : Rimington Clitheroe  17m to the west
Type : Opencast
Status : Ceased
Commodity: Limestone

Location : Rimington Clitheroe  433m to the north
Type : Opencast
Status : Ceased
Commodity: Limestone

Location : Barndelswick  879m to the northeast
Type : Opencast
Status : Ceased
Commodity: Limestone

4.03 Hydrogeology:

An open watercourse lies on the eastern boundary of the site and flows through the existing caravan park to the north. Sections of the watercourse have been piped through the existing caravan park. The source of the watercourse appears to be a groundwater issue in the southeast corner of the site.

There are other watercourses in the surrounding area (within 500m) of the site as follows:-

- Widow Hill Beck approximately 140m to the north.
- Skell Banks Dyke approximately 150m to the south.
- Unnamed watercourse approximately 150m to the west.
- Unnamed watercourse approximately 275m to the east.
- Unnamed watercourse approximately 375m to the west.
- Unnamed watercourse approximately 425m to the southwest.
- Unnamed watercourse approximately 425m to the east.
- Unnamed watercourse approximately 450m to the south.
- Crag Clough approximately 475m to the south.
- Unnamed watercourse approximately 500m to the southeast.

There are a number of groundwater issues in the surrounding area (within 500m) of the site. One groundwater issue is on the existing caravan park to the north of the site.

The site is not believed to be prone to flooding and is located within Flood Zone 1 on the Environmental Agency (EA) flood map. This zone comprises land assessed as having less than a 1:1000 (<0.1%) annual probability of river flooding or flooding from the sea in any year.

The overlying soils are classified as having a low leaching potential.

There is 1 no. discharge consent within 1000m of the site. It is within 500m of the site and details are summarised as follows:-

- treated effluent 240m to the northwest.

The discharge is in relation to the existing caravan park to the north of the site.

There has been 6 no. pollution incidents within 1000m of the site. Of these 2 no. have been within 500m of the site and details are summarised as follows:-

1 no. Category 2 significant incident involving:-

- silage liquor 433m to the north

1 no. Category 3 minor incident involving:-

- sewage 83m to the northwest

Whilst it would appear that the incidents were not associated with any activities on the site. However, the incident involving sewage appears to be associated with the existing caravan park to the north.

There are 6 no. water abstraction licenses held within 1000m of the site and the details are summarised as follows:-

- groundwater abstraction for general use 400m to the east.
- groundwater abstraction for general use 706m to the northeast.
- surface water abstraction for household water supply (2 no.) 802m to the southwest.
- groundwater abstraction for general use 847m to the northeast.
- surface water abstraction for household water supply (2 no.) 943m to the southwest.

However, there has been a small quarry adjacent the north western sector of the site which possibly encroached onto the site. The quarry appears to have been infilled in the mid 1970's.

The site does not lie within a Source Protection Zone.

There have been no prosecutions relating to controlled waters within 1000m of the site.

5.0 POLLUTION CONTROLS & WASTE

5.01 Pollution Controls:

There are no Integrated Pollution Control Permits held within 1000m of the site.

There are no Integrated Pollution Prevention and Control Permits held within 1000m of the site.

There are no Local Authority Pollution Prevention and Control Permits held within 1000m of the site.

There are no Local Authority Integrated Pollution Prevention and Control Permits held within 1000m of the site.

There are no registered radio active substance licences held within 1000m of the site.

There have been no prosecution relating to authorised processes within 1000m of the site.

There are no Control of Major Asbestos Hazards Site (COMAH) within 1000m of the site.

5.02 Waste:

There are no registered landfill sites within 1000m of the site.

There are no British Geological Survey recorded landfill sites within 1000m of the site.

There are no Local Authority recorded landfill sites within 1000m of the site.

There are no historic landfill sites within 1000m of the site.

There are no waste treatment/disposal site within 1000m of the site.

There are no waste management facilities within 1000m of the site.
There are no waste transfer sites within 1000m of the site.

6.0 IDENTIFIED POSSIBLE SOURCES OF CONTAMINATION

The past history of the site would indicate no obvious sources of contamination.

6.01 Soil Contamination:

It does not appear that the site has been filled or artificially raised in level. Any fill that has been imported onto the site may have elevated levels of contamination, depending upon the source and nature of the material used.

The site has not been previously developed although there are redundant reed beds associated with the former sewage treatment plant that served the existing caravan park.

Potentially contaminative activities in the vicinity (within 250m) of the site have included:

- a quarry

Potentially contaminative activities in the surrounding area (250 to 1000m) of the site have included:

- quarries - a mill

There are no Contempory Trade Directory entries in the vicinity of the site (within 500m).

There are no fuel station entries in the vicinity (within 500m) of the site.

Whilst a ground investigation is not considered necessary on the site a watching brief is recommended particularly in the north western sector. If suspected made ground is encountered on the site, soil sampling should be undertaken for contamination testing and associated risk assessment.

6.02 Pollution of Controlled Waters:

The possibility of leachate contamination if any uncontrolled filling that has taken place on the site, may need to be investigated to assess the potential for pollution to controlled waters (aquifer and watercourses). However, such material is very unlikely to be present.

6.03 Gas Contamination:

The development does not appear to be at risk from the migration of landfill gas onto the site as there are no known landfill sites within 250m of the development.
The development may be at risk from the migration of landfill gas on to the site and adjacent back filled quarry if the fill materials used are potential source of landfill gas. However, this risk is considered to be low as the quarry was very small.

Therefore it is considered that gas monitoring does not need to be undertaken on the site.

Database information indicates that the site is in an area where Radon protection measures are not required in the construction of extensions or new dwellings.

7.0 RISK ASSESSMENT

70.1 The following contaminated land risk assessment methodology is based on CIRIA C552 (2001) Contaminated Land Risk Assessment – ‘A Guide to Good Practice’, in order to quantify potential risk via risk estimation and risk evaluation, which can be adopted at the Phase 1 stage. This will then determine an overall risk category which can be used to identify likely actions. This methodology uses qualitative descriptors and is therefore a qualitative approach.

The methodology requires the classification of:

- the magnitude of the consequence (severity of risk occurring), and
- the magnitude of the probability (likelihood) of a risk occurring.

7.02 The potential consequences of contamination risks occurring at this site are classified in accordance with table 7.1, which is adapted from the CIRIA guidance.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition of Consequence</th>
</tr>
</thead>
</table>
| Severe         | Short term (acute risks to human health).  
|                | Short term risk of pollution of sensitive water resource or ecosystem.  
|                | Catastrophic damage crops/buildings/property/infrastructure, including off-site soils.  |
| Medium         | Medium/long term (chronic) risks to human health.  
|                | Medium/long term risk of pollution of sensitive water resource or ecosystem.  
|                | Significant damage to crops/buildings/property/infrastructure (on or off-site).  
|                | Contamination of off-site soils.  |
| Mild           | Easily preventable, permanent health effects on humans.  
|                | Pollution of non-sensitive water resources.  
|                | Localised damage to crops/buildings/property/infrastructure (on or off site).  |
| Minor          | Easily preventable non-permanent health effects on humans, or no effects.  
|                | Minor, low level and localised contamination of on-site soils.  
|                | Easily repairable damage to crops, buildings/property/infrastructure.  |

7.03 The probability of contamination risks occurring at this site will be classified in accordance with Table 7.2, which is also adapted from the CIRIA guidance. Note that for each category it is assumed that a pollution linkage exists. Where a pollution linkage does not exist the likelihood is zero, as is the risk.
Table 7.2 – Classification of Probability:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition of Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Likelihood</td>
<td>Circumstances are such that an event appears very likely in the short term, or almost inevitable in the long term; or there is already evidence that such an event has occurred.</td>
</tr>
<tr>
<td>Likely</td>
<td>Circumstances are such that an event is not inevitable, but is possible in the short term, and is likely over the long term.</td>
</tr>
<tr>
<td>Low Likelihood</td>
<td>Circumstances are such that it is by no means certain that an event will occur even over along period, and it is less likely in the short term.</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Circumstances are such that it is improbable that an event would occur even in the long term.</td>
</tr>
</tbody>
</table>

7.04 For each possible pollution linkage (source-pathway-receptor) identified the potential risk can be evaluated. Based upon this CIRIA C552 presents definitions of the risk categories, together with the investigatory and remedial actions that are likely to be necessary in each case, as indicated in Table 7.3. These risk categories apply to each pollutant linkage, not simply to each hazard or receptor.

Table 7.3 – Definition of Risk Categories and Likely Actions required:

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Definition of Likely Actions Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>Severe harm to a defined receptor is very likely, or has already occurred. The risk is likely to result in a substantial liability. Urgent investigation (if not already undertaken) is likely to be required. Urgent remediation is likely to be required.</td>
</tr>
<tr>
<td>High</td>
<td>Harm to a defined receptor is likely. The risk, if realised, may result in a substantial liability. Urgent investigation (if not already undertaken) is likely to be required. Remediation is likely to be required in the long term, possibly sooner.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Harm to a defined receptor is possible, but severe harm is unlikely. Investigation is likely to be required to clarify the level of potential liability and risk. Some remediation may be required in the long term.</td>
</tr>
<tr>
<td>Low</td>
<td>Harm to a defined receptor is possible, but is likely to be mild at worst. Liabilities could theoretically arise, but are unlikely. Further investigation is not required at this stage. Remediation is unlikely to be required.</td>
</tr>
<tr>
<td>Very low</td>
<td>Harm to a defined receptor is unlikely and would be minor at worst. No liabilities are likely to arise. Further investigation is not required at this stage. Remediation is unlikely to be required.</td>
</tr>
</tbody>
</table>

7.05 This relationship can also be represented as a matrix, as indicated in Table 7.4.

Table 7.4 – Probability / Consequence Matrix:

<table>
<thead>
<tr>
<th>Probability</th>
<th>Severe</th>
<th>Medium</th>
<th>Mild</th>
<th>Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Likelihood</td>
<td>Very High Risk</td>
<td>High Risk</td>
<td>Moderate Risk</td>
<td>Low Risk</td>
</tr>
<tr>
<td>Likely</td>
<td>High Risk</td>
<td>Moderate Risk</td>
<td>Moderate Risk</td>
<td>Low Risk</td>
</tr>
<tr>
<td>Low Likelihood</td>
<td>Moderate Risk</td>
<td>Moderate Risk</td>
<td>Low Risk</td>
<td>Very Low Risk</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Low Risk</td>
<td>Low Risk</td>
<td>Very Low Risk</td>
<td>Very Low Risk</td>
</tr>
</tbody>
</table>
7.06 The following potential contamination pathways have been identified on the site:-

Horizontal and vertical migration pathways of leachate through the potentially permeable soils and geological formations.

Human Uptake Pathways (derived from CLEA model and LQA for residential use with plant uptake):

- Ingestion of soil
- Ingestion of indoor dust
- Dermal contact with soil
- Contact with indoor dust
- Inhalation of vapours outside
- Inhalation of vapours inside
- Vertical and lateral migration of volatile vapours and ground gas
- Indirect ingestion
- Airborne hazardous fibres
- Plant root uptake.

7.07 The following environmental receptors have been identified on site:-

- Aquifer
- Watercourses
- North Sea
- Drainage ditch
- Buildings / structures
- Flora / Fauna
- Underground services
- Third party land.

7.08 The following human receptors have been identified on the site:-

- Construction workers
- Maintenance workers
- End users.
### 7.09 Summary – Earthworks and Construction Phase:

A Risk Assessment of the site is summarised in the table below:-

<table>
<thead>
<tr>
<th>Source</th>
<th>Receptor</th>
<th>Pathway</th>
<th>Consequence</th>
<th>Probability</th>
<th>Risk Category</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1: Contamination in made ground if present on the site.</td>
<td>R1: Controlled waters (aquifer and watercourses).</td>
<td>P1: Horizontal and Vertical migration of leachate through potentially permeable soils and service trenches.</td>
<td>Medium</td>
<td>Unlikely</td>
<td>Low</td>
<td>If suspected made ground is encountered on the site soil sampling and contamination testing and associated risk assessment should be undertaken.</td>
</tr>
<tr>
<td>S1: Contamination in made ground if present on the site.</td>
<td>R2: Buildings and structures.</td>
<td>P1: Horizontal and Vertical migration of leachate through potentially permeable soils and service trenches.</td>
<td>Medium</td>
<td>Unlikely</td>
<td>Low</td>
<td>Made ground if present, may contain elevated sulphate levels which could result in corrosion of buried concrete structures. However, sulphate resisting cement can be used in concrete.</td>
</tr>
<tr>
<td>S1: Contamination in made ground if present on the site.</td>
<td>R3: Construction workers.</td>
<td>P2: Human uptake pathways (see 7.06). P3: Vertical migration of volatile vapours and ground gas.</td>
<td>Severe</td>
<td>Unlikely</td>
<td>Low</td>
<td>The risk to workers who do not use the appropriate PPE is likely to be significant. If suspected made ground is encountered on the site soil sampling and contamination testing and associated risk assessment should be undertaken.</td>
</tr>
<tr>
<td>S2: Gas Generation in landfill sites within 250m of the site. S3: Possible gas generation in fill material to adjacent small quarry.</td>
<td>R3: Construction workers.</td>
<td>P3: Vertical migration of volatile vapours and ground gas.</td>
<td>Severe</td>
<td>Unlikely</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>S1: Contamination in made ground if present on the site.</td>
<td>R4: Neighbouring Sites.</td>
<td>P1: Horizontal and Vertical migration of leachate through potentially permeable soils and service trenches.</td>
<td>Medium</td>
<td>Unlikely</td>
<td>Low</td>
<td>If suspected made ground is encountered on the site soil sampling and contamination testing and associated risk assessment should be undertaken.</td>
</tr>
</tbody>
</table>
### 7.10 Site Risk Assessment Summary Post Development:

<table>
<thead>
<tr>
<th>Source</th>
<th>Receptor</th>
<th>Pathway</th>
<th>Consequence</th>
<th>Probability</th>
<th>Risk Category</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1: Contamination in made ground if present on the site.</td>
<td>R5: Maintenance Workers.</td>
<td>P2: Human uptake pathways. P3: Vertical migration of volatile vapours and ground gas.</td>
<td>Severe</td>
<td>Unlikely</td>
<td>Low</td>
<td>If suspected made ground is encountered on the site soil sampling and contamination testing and associated risk assessment should be undertaken. Site remediation works, such as hot spot removal or provision of an inert capping will reduce the risk to Low. However, such works are unlikely to be required. The risk to maintenance workers who do not use the appropriate PPE is likely to be significant.</td>
</tr>
<tr>
<td>S2: Gas generation in landfill sites within 250m of the site. S3: Possible gas generation in fill material to adjacent small quarry.</td>
<td>R5: Maintenance Workers.</td>
<td>P3: Vertical migration of volatile vapours and ground gas.</td>
<td>Severe</td>
<td>Unlikely</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>S1: Contamination in made ground if present on the site.</td>
<td>R6: Site end users.</td>
<td>P2: Human uptake pathways. P3: Vertical migration of volatile vapours and ground gas.</td>
<td>Severe</td>
<td>Unlikely</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>S2: Gas generation in landfill sites within 250m of the site. S3: Possible gas generation</td>
<td>R6: Site end users.</td>
<td>P3: Vertical migration of volatile vapours and ground gas.</td>
<td>Severe</td>
<td>Unlikely</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

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Date: 08 June 2015
in fill material to adjacent small quarry.
S4: Radon generation in underlying geology.

<table>
<thead>
<tr>
<th>S1: Contamination in made ground if present on the site.</th>
<th>R7: Flora and Fauna.</th>
<th>P4: Plant root uptake.</th>
<th>Medium</th>
<th>Unlikely</th>
<th>Low</th>
</tr>
</thead>
</table>

If suspected made ground is encountered on the site soil sampling and contamination testing and associated risk assessment should be undertaken. Site remediation works, such as hot spot removal or provision of an inert capping will reduce the risk to Low. However, such works are unlikely to be required.

<table>
<thead>
<tr>
<th>S1: Contamination in made ground if present on the site.</th>
<th>R8: Services.</th>
<th>P1: Horizontal and Vertical migration of leachate through potentially permeable soils and service trenches.</th>
<th>Medium</th>
<th>Unlikely</th>
<th>Low</th>
</tr>
</thead>
</table>

If suspected made ground is encountered on the site soil sampling and contamination testing and associated risk assessment should be undertaken. Site remediation works, such as hot spot removal will reduce risk to Low. However, such works are unlikely to be required. Service trenches to be back filled with inert materials. ‘Protector Line’ water pipes can be used if necessary.

A site conceptual section has not been shown on the site topographical survey (Fig. 2) attached in Appendix C as there are no obvious environmental risks on the site.
8.0 DISCUSSION

8.01 Contamination:

It is considered very unlikely that contamination is present on the site due to past activities on the site. It is also unlikely that made ground is present on the site. However, if made ground is present it may contain elevated levels of contamination, depending on the source and nature of any fill materials used. Therefore if suspected made ground is encountered on the site, soil sampling for contamination testing and associated risk assessment should be undertaken.

The following 'standard' testing suite should be adopted on the site if made ground is encountered:

- arsenic
- boron (ws)
- copper
- sulphate (ws)
- cadmium
- nickel
- lead
- pH
- chromium
- zinc
- mercury
- PAH speciated

It is not envisaged at this stage that any remediation works will be required on the site.

However, the redundant reed beds should be dug out and the soils/silt disposed of at a suitably licensed tip.

8.02 Mining:

The site is not affected by shallow coal workings or mine entries.

8.03 Flooding:

See CoDA Structures Flooding and Drainage Assessment Report.

8.04 Gas:

The development does not appear to be at risk from the migration of landfill gas onto the site as there are no known landfill sites within 250m of the development.

The development may be at risk from the migration of landfill gas on to the site and adjacent back filled quarry if the fill materials used are potential source of landfill gas. However, this risk is considered to be low as the quarry was very small.

Therefore it is considered that gas monitoring does not need to be undertaken on the site.

Database information indicates that the site is in an area where Radon protection measures are not required in the construction of extensions or new dwellings.
9.0 INVESTIGATION WORKS REQUIRED

9.0.1 Ground Investigation:

- If suspected made ground is encountered on the site, soil sampling for contamination testing and associated risk assessment should be undertaken.

10.0 SUMMARY

<table>
<thead>
<tr>
<th>Site Name &amp; Location</th>
<th>Extension to Todber Caravan Park, Burnley Road, Gisburn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal</td>
<td>Extension to the existing caravan park.</td>
</tr>
<tr>
<td>Local Authority</td>
<td>Ribble Valley Borough Council.</td>
</tr>
<tr>
<td>Site History</td>
<td>Whilst the site has not been previously developed the sewage treatment plant for the existing caravan park is located on the site. In addition the reed beds from the former sewage treatment plant are still present. Potentially contaminative activities in the vicinity (within 250m) of the site have included a quarry. Potentially contaminative activities in the surrounding area (250 – 1000m) of the site have included quarries and a mill.</td>
</tr>
</tbody>
</table>
| Geology              | 1:50,000 British Geological Survey (BGS) Sheet 68 Clitheroe indicates the following:-  
  - The site is overlain with glacial boulder clay.  
  - The site is underlain by Limestone of the Dinantian Age.  
  - No faults lie within 1000m of the site. |
| Hydrogeology         | The site is in a relatively high hydrogeological area as there is a watercourse on the site.  
  In addition there is groundwater abstraction within 400m of the site. However, the site is not in a Source Protection Zone. |
| Flooding             | See CoDa Structure Flooding and Drainage Assessment. |
| Coal Mining          | The site is not affected by shallow coal workings or mine entries. |
| Gas Contamination    | The development does not appear to be at risk from the migration of landfill gas onto the site as there are no known landfill sites within 250m of the development.  
  The development may be at risk from the migration of landfill gas on to the site and adjacent back filled quarry if the fill materials used are potential source of landfill gas.  
  However, this risk is considered to be low as the quarry was very small.  
  Therefore it is considered that gas monitoring does not need to be undertaken on the site. |
| Radon                | No protection measures required.                     |
| Ground Conditions    | Subject to ground investigation but it is unlikely that made ground is present on the site. |
| Contamination Assessment | It is unlikely that contamination is present on the site. |
| Remediation Works    | Not envisaged                                        |
| Further Investigation Work | Ground Investigation:  
  If suspected made ground is encountered on the site, soil sampling for contamination testing and associated risk assessment should be undertaken. |
11.0 CAVEATS

11.01 The comments given in this report and recommendations made are based on the information that could be obtained from reasonably accessible sources. Discussions have not yet been held with statutory bodies and the local authority.

11.02 This report has been prepared for the sole use of Park Resorts Ltd and their development funders, unless agreed otherwise in writing by CoDA Structures.

Signed: ..................................  

J Lawrence B Eng C Eng M I Struct E
APPENDIX ‘A’

LIST OF DOCUMENTS REFERRED TO:

- 1:50,000 British Geological Survey (BGS) sheet 68 Clitheroe
- Ordnance Survey Sheets:

<table>
<thead>
<tr>
<th>Year</th>
<th>Scale</th>
<th>Year</th>
<th>Scale</th>
<th>Year</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
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<td>1:10,000</td>
<td>1909/11</td>
<td>1:10,000</td>
<td>1975</td>
<td>1:10,000</td>
</tr>
<tr>
<td>1894</td>
<td>1:2,500</td>
<td>1914</td>
<td>1:10,000</td>
<td>1994</td>
<td>1:2,500</td>
</tr>
<tr>
<td>1896</td>
<td>1:10,000</td>
<td>1955</td>
<td>1:10,000</td>
<td>2006</td>
<td>1:10,000</td>
</tr>
<tr>
<td>1909</td>
<td>1:2,500</td>
<td>1972</td>
<td>1:2,500</td>
<td>2015</td>
<td>1:10,000</td>
</tr>
</tbody>
</table>

- Envirocheck Report.
- CIRIA C552 (2001) Contaminated Land Risk Assessment
APPENDIX B

SITE LOCATION PLAN - FIG. 1
APPENDIX C

SITE TOPOGRAPHICAL SURVEY – FIG. 2
APPENDIX D

SITE AERIAL PHOTOGRAPH
APPENDIX E
HISTORIC ORDNANCE SURVEY PLANS
Lancashire And Furness
Published 1914

Source map scale - 1:10,560

The historical maps in use were produced from maps predominantly held at the scale adopted by England, Wales and Scotland in the mid-1940s. In 1954 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1939, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in isolining areas. In the late 1940s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially superimposed with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

Historical Map - Slice A

Order Details
Order Number: 65936431_1_1
Customer Ref: 7486
National Grid Reference: 383310, 446540
Slice: A
Site Area (Ha): 2.81
Search Buffer (m): 1000

Site Details
Todd Caravan Park, Bumley Road, Gilsthorpe, CLITHEROE, Lancashire, BB7 4JJ
Large-Scale National Grid Data
Published 1994

Source map scale - 1:2,500

Large-scale National Grid data superimposed on DWA maps (Ordnance Survey's Survey of Information on Microfilm 1:5000, 2000) for local authorities and to provide detailed information on houses and roads. The maps were produced to show selected geotopic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Order Details
Order Number: 65936043_1.1
Customer Ref: 7498
National Grid Reference: 330310, 446540
Slice: A
Site Area (Ha): 2.8
Search Buffer (m): 100

Site Details
Todbar Caravan Park, Burnley Road, Gilstead, CLITHEROE, Lancashire, BB7 4JH