



Site Investigation

Pendeen Community Cemetery

04 July 2018

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Ref: SI19452

DOCUMENT CONTROL SHEET

Client	The Pendeen Community Cemetery Project Committee
Project Title	Pendeen Community Cemetery
Document Title	Site Investigation
Document No.	SI19452

Date	Status	Revision	Prepared By	Approved By
4 July 2018	Final	1	Bryony Halliday	Dan Jobson

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EXECUTIVE SUMMARY

Objectives

Wheal Jane Consultancy was commissioned by Mrs D Webb of The Pendeen Community Cemetery Project Committee to undertake an intrusive investigation on the site of a proposed Community Cemetery.

Site Investigation

Previous Investigations	Wheal Jane Consultancy completed a 'Preliminary Viability Investigation' at the site, which comprise of 15nr Trial Pits across the site.
Site Works	3nr Rotary Open Hole Boreholes were drilled to a depth of 10.0mbgl.
Ground Conditions	Lands End Intrusion [Granite]
Groundwater	No groundwater was encountered during the site investigation.

Conclusions

- No groundwater was encountered during the investigation.

Recommendations

- It is recommended that a program of groundwater monitoring is commissioned. Peak rainfall in Pendeen is between the months of November and January, therefore groundwater levels are likely to rise between these months.

1 INTRODUCTION

1.1 Instruction

- 1.1.1 Wheal Jane Consultancy (WJC) was commissioned by Pendeen Community Cemetery Project Committee to undertake a site Investigation at a site in Pendeen to assess the depth to groundwater across the site.
- 1.1.2 This report has been prepared by Wheal Jane Consultancy solely for the benefit of Pendeen Community Cemetery Project Committee. It shall not be relied upon or transferred to any third party without the prior written authorisation of WJC.

1.2 Scope and Objectives

- 1.2.1 The objective of this investigation is to determine the depth to groundwater across the site in order to assess the site's suitability for its intended use as a cemetery.

1.3 Limitations

- 1.3.1 Conditions of the ground at locations not included within the investigation may be different from the tested locations.
- 1.3.2 This report considers site conditions at the time of the ground investigation, but ground conditions may change with time. If future work discovers ground conditions that vary significantly from the findings available in this report, the conclusions should be reviewed in the context of the new information.
- 1.3.3 Findings were assessed in the context of standards and methodology current at the time of reporting.
- 1.3.4 Boreholes were terminated at a depth of 10.0mbgl in line with Environment Agency recommendations.
- 1.3.5 The findings and conclusions in this report are based upon information derived from a variety of sources. WJC cannot accept liability for the accuracy or completeness of any information derived from third party sources.

2 THE SITE

2.1 Site Location and Layout

2.1.1 The site is located at Pendeen, approximately 10.0km to the north west of the town centre of Penzance. The site is approximately centred on National Grid Reference SW 38039 34275.

2.1.2 The site is irregular in shape and covers an area of approximately 0.19ha.

2.1.3 The site layout can be seen in Figure 2.1 below:

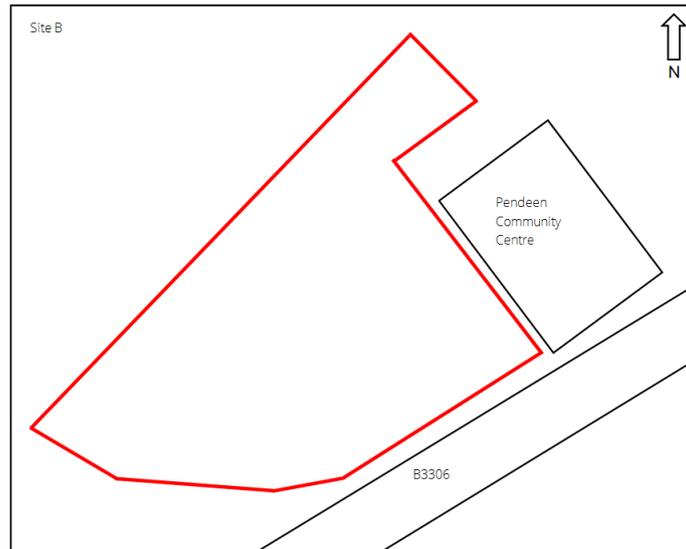


Figure 2.1: Current Site Layout for the preferred site option.

2.2 Surrounding area

2.2.1 The site is bound to the north by fields with residential property beyond, to the west by residential property, to the south by the B3306 with residential property beyond, and to the east the site is bound by the Pendeen Community Centre with residential and commercial property beyond.

2.3 Proposed Development

2.3.1 The proposed development is for a community cemetery for burials and memorial with visitor parking and associated landscaping. Pre-application reference: PA17/02828/PREAPP.

3 SITE INVESTIGATION

3.1 Site Works

3.1.1 A site Investigation was conducted on Tuesday 3rd July 2018. The investigation was overseen by a geotechnical engineer from Wheal Jane Consultancy. An exploratory hole location plan is presented as Figure 3.1.

3.1.2 The following table summaries the intrusive investigation techniques employed during the site investigation:

Table 3.1: Investigation Techniques

Exploratory Hole Type	Exploratory Hole ID	Hole Depths (mBGL)	Comments
Rotary Open Hole Borehole	BH01 – BH03	10.0	Excavated for site coverage

3.1.3 3nr rotary open hole boreholes, designated BH01 to BH03 were drilled to depths of 10.0mbgl using a Commachio 205 rotary drilling rig on the 3rd July 2018. Rotary open hole drilling does not return core samples, rather it rapidly bores through rock using a tungston studded drill bit which returns ‘chippings’ to the surface via an air flush.

3.1.4 Upon completion the boreholes were fitted with groundwater monitoring standpipes. The 50mm plastic standpipes allow water/gas ingress through small slots, as indicated in Figure 3.2. The slotted pipe is surrounded with permeable pea gravel. The uppermost section of pipe is comprised of plain pipe and encased in an impermeable bentonite seal. A rubber gas bung and tap is secured at the top of the pipe to enable has monitoring. The aperatus is then secured with a lockable cover.

3.1.5 Borehole logs which detail the installation depths are presented as Appendix A.

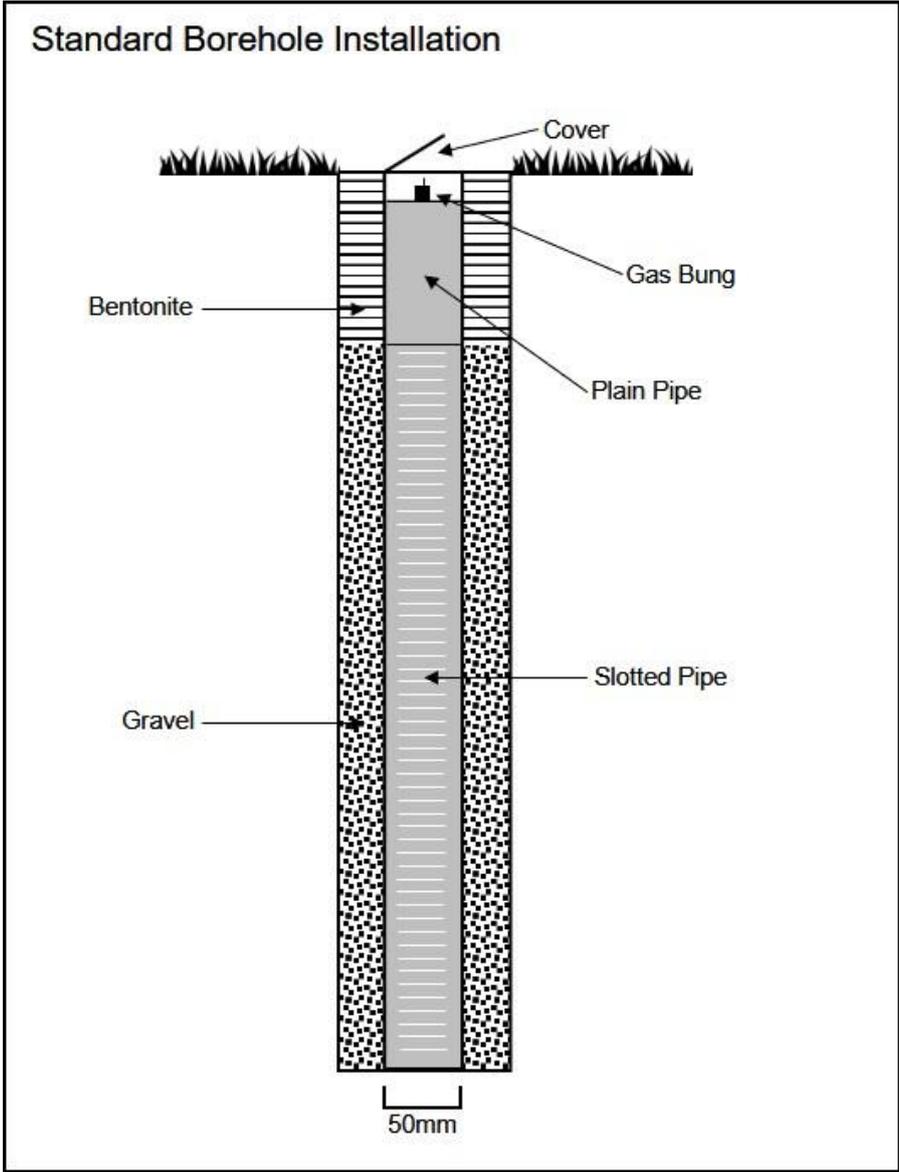


Figure 3.2: Standard Borehole Installation

4 GROUND CONDITIONS

4.1 General

4.1.1 The BGS 1:50,000-scale bedrock geological map [Sheet 351] of Land's End shows the site to be underlain by the Land's End Intrusion comprising of Granite.

4.1.2 The following table represents a summary of the strata encountered beneath the site:

Table 4.1: Strata Encountered

Strata	Depth Encountered (mBGL)		Typical Thickness (m)	Brief Description & Comments
	From	To		
Land's End Intrusion	0.00	10.00	Unproven	Granite, recovered as light grey chippings/powder

4.2 Strata Encountered

Land's End Intrusion

4.2.1 Material described as The Land's End Intrusion was encountered across the site to depths of up to 10.0m.

4.2.2 The drilling method employed prevented detailed logging of the material, however the chipping returns and observable reaction of the rig confirmed the presence of the Granite.

4.3 Groundwater

4.3.1 No groundwater was encountered during the site investigation.

4.4 Contamination Indications

4.4.1 No olfactory evidence of contamination was encountered during the site investigation.

5 CONCLUSIONS

5.1.1 No groundwater was encountered during the investigation.

6 RECOMMENDATIONS

6.1.1 Following from a brief telephone conversation with Jason Lees of the Environment Agency (call log: 04/07/2018 - 13:50), it is recommended that a program of groundwater monitoring is commissioned. Peak rainfall in Pendeen is between the months of November and January, therefore groundwater levels are likely to rise between these months.

7 NOTES

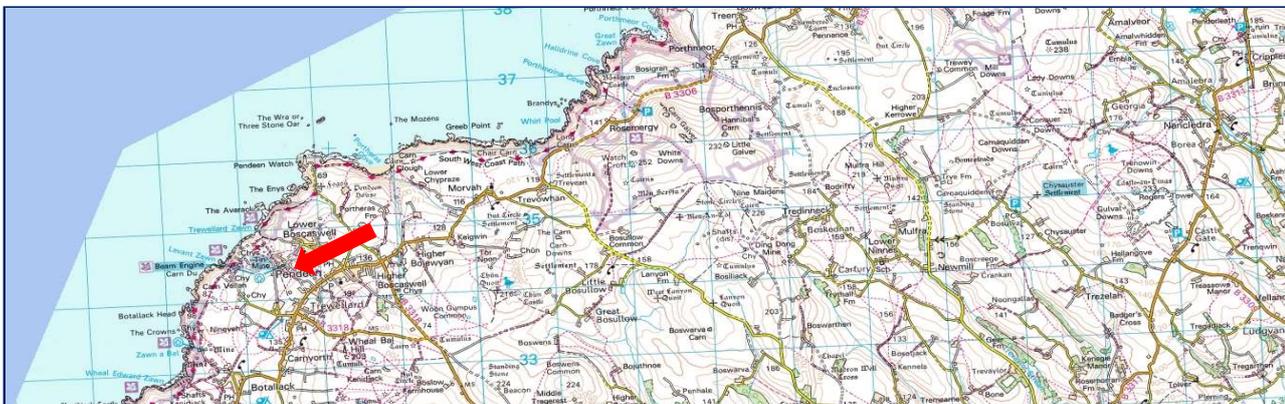
- *This report is concerned solely with the property, as defined by this report, or parts thereof examined.*
- *The report should not be used in connection with adjacent properties.*
- *In respect of site works, Wheal Jane Consultancy cannot accept any liabilities for any additional mine workings found outside the limits of any areas examined.*
- *The information supplied by third parties which has been used in compiling this Phase 2 ground investigation report, is derived from a number of statutory and non-statutory sources. While every effort is made by the supplier to ensure accuracy, the supplier cannot guarantee the accuracy or completeness of such information or data, nor to identify all the factors that may be relevant.*
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- *This report is not an asbestos inspection that may fall within the control of Control of Asbestos Regulations 2006*

FIGURES

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Environment & mining services



Pendeen Community Cemetery

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Site Investigation

Site Location Plan



Fig 2.1

Pendeen Community Cemetery Project Committee

04/07/2018



Pendeen Community Cemetery

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Fig 3.1

Exploratory Hole Location Plan

Pendeen Community Cemetery Project Committee

04/07/2018

Appendix A

Borehole Logs

Machine : Commachio 205 Flush : Air Method : Rotary Open Hole	Casing Diameter No Casing Required	Ground Level (mOD) 127.00	Client Pendeen Community Cemetry Committee	Job Number 19452
	Location (Estimated) SW 38084 34324	Dates 01/07/2018	Engineer Bryony Halliday	Sheet 1/1

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						125.00	2.00	Sandy GRAVEL and TOPSOIL recovered as brown chippings.			
						117.00	8.00	Granite [LANDS END INTRUSION] Recovered as grey chippings.			

Remarks No Groundwater Encountered.	Scale (approx)	Logged By
	1:50	BH
	Figure No. 19452.BH01	

Machine : Commachio 205 Flush : Air Method : Rotary Open Hole	Casing Diameter No Casing Required	Ground Level (mOD) 128.00	Client Pendeen Community Cemetry Committee	Job Number 19452
	Location (Estimated) SW 38134 34367	Dates 01/07/2018	Engineer Bryony Halliday	Sheet 1/1

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						125.50	(2.50)	Sandy GRAVEL and TOPSOIL recovered as brown chippings.			
						118.00	(7.50)	Granite [LANDS END INTRUSION] Recovered as grey chippings.			

Remarks No Groundwater Required.	Scale (approx) 1:50	Logged By BH
	Figure No. 19452.BH02	



Site
Pendeen Community Cemetry

Borehole Number
BH03

Machine : Commachio 205
Flush : Air
Method : Rotary Open Hole

Casing Diameter
No Casing Required

Location (Estimated)
SW 38142 34327

Ground Level (mOD)
130.00

Dates
01/07/2018

Client
Pendeen Community Cemetry Committee

Engineer
Bryony Halliday

Job Number
19452

Sheet
1/1

Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						128.00	2.00	Sandy GRAVEL and TOPSOIL recovered as brown chippings.			
						120.00	10.00	Granite [LANDS END INTRUSION] Recovered as grey chippings.			

Remarks
No Groundwater Encountered.

Scale (approx)
1:50

Logged By
BH

Figure No.
19452.BH03



Wheal Jane Consultancy

Wheal Jane Group

-Mine Search Reports-

-Mine Site Investigations-

-Mundic Analysis-

-Contaminated Land Assessments-

-Laboratory Testing of Soils and Water-

