Ruddlesden geotechnical ltd

Phase 2: Geotechnical Investigation and Contamination Assessment Report

Wey Valley, Dorchester Road, Weymouth, Dorset

C.G. Fry & Son Ltd

May 2013

SR/JF/DT/13107/GICAR

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EXECUTIVE SUMMARY

It is proposed to develop land at Wey Valley, Dorchester Road, Weymouth, Dorset, for residential purposes. Twenty-nine trial pits and six windowless sample boreholes typically encountered ground conditions of topsoil and/ or made ground, to depths of between 0.20m and 1.00m, underlain by firm silty clay, underlain by firm or stiff silty clay (with occasional cobbles and/ or boulders of limestone), underlain by stiff dark silty clay with some very weak mudstone lithorelics, underlain by stiff or very stiff silty clay with some very weak mudstone lithorelics, to the base of the trial pits and boreholes.

Foundation recommendations are traditional strip or trench-fill foundations at a minimum depth of 1.00m below existing or proposed ground levels, whichever is deepest. In the absence of more intensive testing, where building near trees, foundations should be deepened for soils of high volume change potential in accordance with NHBC Standards.

Water level monitoring of borehole installations indicated groundwater to be at surface level in WSs 1 and 5. Therefore, some de-watering (sumping and pumping) of excavations will likely be required.

The results of in-situ soakaway testing indicated that the ground is not sufficiently permeable for the use of soakaways as a means of surface water drainage at this site. The preferable drainage solution would be a combination of on-site attenuation and off-site discharge.

A contamination assessment has shown that elevated levels of contamination are present in the far northwest of the site, in an area previously used by the military in WWII, which could be harmful to human health given the proposed end use but not to the water environment. Additional sampling and testing is recommended to determine the extent of the contamination and to enable detailed remediation recommendations to be made.

No radon protective measures are required and no ground gas protective measures are considered to be necessary.

1.0 INTRODUCTION

1.1 General

In April 2013, a Phase 2: Geotechnical Investigation and Contamination Assessment was undertaken by Ruddlesden geotechnical ltd on behalf of C.G. Fry & Son Ltd for the proposed residential development of land at Wey Valley, Dorchester Road, Weymouth, Dorset.

The investigation was undertaken to determine subsurface ground conditions, to provide recommendations for foundations and associated structures, and to assess the extent of any contamination at the site.

The investigation comprised the excavation of twenty-nine trial pits and six window sample boreholes with in-situ testing, including soakaway and CBR (TRL DCP Method) testing, and laboratory testing.

1.2 Scope of Investigation

This Phase 2 investigation has been undertaken following a Phase 1 Desk Study report produced by Ruddlesden geotechnical ltd (Report Ref. SR/JW/DT/13107/PGCAR, dated March 2013), which should be read in conjunction with this report.

The investigation covers geotechnical and contamination aspects relating to the development. The brief was understood to comprise the following:

- Undertake exploratory holes.
- Schedule geotechnical and contamination laboratory testing.
- Establish the ground conditions across the site.
- Make recommendations for foundation design.
- Carry out in-situ soakaway testing and provide recommendations for soakaway design.
- Carry out CBR testing (DCP TRL method) to obtain information for use in road pavement design.

- Make recommendations covering other geotechnical aspects, including excavations and groundwater.
- Undertake a contamination risk assessment.
- Provide details of any contamination remedial measure requirements.

1.3 Scope of Report

The report is presented as a description of the procedures employed and the data obtained. This is followed by a thorough description of the ground and groundwater conditions, together with an assessment of material and mass ground parameters. The final part of the report comprises analysis, recommendations, and conclusions, which are provided in two separate parts: geotechnical and contamination.

2.0 THE SITE

2.1 Site Location

The site is located at land at Wey Valley, Dorchester Road, Weymouth, Dorset. The British National Grid Reference of the site is 366607, 082486, and the postcode for the site is DT3 5BN.

The site is located within a rural/ residential area, approximately 3.75km to the northwest of Weymouth town centre, and approximately 500m east of Nottington village centre. The surrounding topography is moderately hilly.

2.2 Site Description

The walkover survey revealed the site to be irregular in shape, measuring approximately 470m x 430m. The site slopes variably and this is covered in further detail below. However, the site's topography is centred around a dry valley feature that runs approximately north to south, and roughly bisects the east of the site.

Access to the site is via a gateway in the northeast of the site. The gateway opens on to a large short-grassed field, which makes up the eastern part of the site. The field slopes gently from the east down to the west, and is boggy/ marshy in parts. This part of the site is bounded to the east by residential housing (Dorchester Road), to the north by Nottington Lane, to the south by fields (south of the site), and to the west by fields and woodland (part of the site). The western boundary of the field marks the centre of the dry valley which bisects the site; in parts this morphological feature is utilised as a drainage ditch, with a pond situated at the northern end (northwest corner of the field).

The land to the south of this field is accessed via a gateway on the southern field boundary. Of the two fields that comprise the south of the site, one of the fields is currently used for keeping horses, with a stable block and a caravan located in the far southeast corner. Both fields, like the first field are well

grassed. The axis of the dry valley continues through these fields. There is no clear surface expression, but the land to the immediate east and west of the dry valley slope gently inward. In the northwest of this area, there is a gate leading to the largest field, which makes up the remaining part of the proposed development site.

Upon entering this field, the land slopes moderately down to the north, east, and west radially. Areas of woodland are present in the northeast, south, and eastern parts of the site, and Nottington Court lies to the northwest. Of note are two concrete bases in the far west of the site amongst the trees, and a part-buried, filled, concrete-brick bunker in the central west of the site.

Beyond the concrete platforms to the north, and west of the bunker, is an area of terraced and un-naturally level ground. Anecdotal information provided by the existing land owner suggested that this area was once part of Nottington Court, with the levelled areas marking the positions of former tennis courts. Additionally, the farmer believed that the bunker marked the line of an old sewer.

In the north of this field was an area of bare disturbed/ trampled ground, and a number of metal cow sheds. Information from the farmer suggested that some of the cow sheds may have formerly been used by the American army during World War 2.

With the exception of the most southerly field, the site is currently used as grazing land for cattle.

The proposed development area is bordered to the north, south and west by fields, and to the east by residential dwellings (Dorchester Road).

Photographs of the site are presented in Appendix A of the Phase 1 report.

3.0 DESK STUDY

A comprehensive desk study was undertaken by Ruddlesden geotechnical ltd as part of the Phase 1: Preliminary Geotechnical and Contamination Assessment Report (Report Ref. SR/JF/DT/13107/PGCAR, dated March 2013). For clarity, the executive summary is detailed below.

Old maps show that the site has largely remained undeveloped until the present day.

The geological map of the area indicates the majority of the site to be underlain by the Forest Marble Formation, Cornbrash Formation, Kellaways Formation and Peterborough Member of the Oxford Clay Formation, predominantly comprising mudstone.

Based on the anticipated ground conditions, it is considered that traditional strip or trench-fill foundations are likely to be suitable to support the proposed structures. However, these recommendations should be confirmed with in-situ strength testing and laboratory testing.

Given the bedrock geology of the site, the drains and issues shown on historical and contemporary maps, site observations and the unproductive aquifer classification, it is considered that the majority of the site is unlikely to be suitable for soakaway drainage, and that on-site attenuation combined with off-site discharge is likely to be the most suitable drainage solution.

The preliminary contamination risk assessment indicates that although widespread contamination of the ground is unlikely, there is a potential source of contamination at this site (made ground) and that some sampling and testing of the near surface soils is required to ascertain the levels of contamination, so that a full contamination risk assessment can be undertaken.

British Geological Survey (BGS) information, obtained as part of the desk study, indicates no radon protective measures are required. No ground gas protective measures are currently considered to be necessary.

An intrusive investigation comprising machine-excavated trial pits and windowless sample boreholes with in-situ shear vane, SPT, CBR and soakaway testing, and laboratory testing, combined with water level monitoring installations, is required to confirm both the geotechnical and environmental recommendations.

4.0 FIELDWORK

4.1 General

All fieldwork was undertaken between 09 and 11 April 2013. The siting and setting out of all the exploratory holes was the responsibility of Ruddlesden geotechnical ltd, who also determined the extent of testing and sampling. The boreholes were located so as to provide a reasonable spread of information and an accurate representation of subsurface ground conditions.

All fieldwork was undertaken in accordance with BS5930 (1999): British Standard Code of Practice for Site Investigation and British Standard BS10175 (2011): Investigation of Potentially Contaminated Sites – Code of Practice.

4.2 Trial Pits

Twenty-nine trial pits were excavated to depths of between 1.20m and 3.40m using a JCB 3CX (seven tonne wheeled digger).

Samples and observations were made from inside the pit to a depth of 1.20m, where safe to do so, from the surface and from samples recovered from the excavator bucket. The supervising geologist provided a detailed description of the ground conditions, groundwater and stability and also obtained samples at representative locations, which were placed into suitable containers. The trial pits were not shored.

In-situ shear vane testing was undertaken in suitable cohesive soils to obtain an estimate of undrained shear strength.

Details of ground and groundwater conditions encountered can be found on the trial pit logs (Appendix A) and photographs (Appendix B). The trial pit locations are shown on the exploratory hole location plan (Dwg. No. 13107/03, Appendix D).

4.3 Windowless Sample Boreholes

Six windowless sample boreholes were formed to depths of between 2.20m and 3.00m using a Competitor Dart (percussive soil sampling rig).

Observations and samples were taken from the recovered soil cores. The supervising geologist provided a detailed description of the ground and groundwater conditions and also obtained samples at representative locations, which were placed into suitable containers.

At regular intervals, Standard Penetration Tests (SPTs) were carried out using either a split spoon sampler or a solid 60° cone. The results of these tests are given as a Standard Penetration N-value or as a blow count for a given penetration at the appropriate position on the borehole logs.

Details of ground and groundwater conditions encountered can be found in the borehole logs (Appendix A). The borehole locations are shown on the exploratory hole location plan (Dwg. 13107/03, Appendix D).

4.4 Soakaway Testing

Eight soakaway tests were undertaken in general accordance with BRE 365 “Soakaway Design”.

The trial pit was excavated to a depth deemed sufficient to represent a section of the design soakaway. The vertical sides were trimmed square. A 1600-gallon water bowser was used to supply the large volumes of water required at a quick rate.

The pit was filled with water and allowed to drain. The fall in water level was recorded with time.

4.5 Dynamic Cone Penetrometer (DCP) Testing

In-situ Dynamic Cone Penetrometer (DCP) testing was undertaken at five locations, as indicated on the exploratory hole location plan (Dwg. No. 13107/03).

The Transport Research Laboratory (TRL) DCP uses an 8kg hammer dropping through a height of 575mm and a 60° cone having a maximum diameter of 20mm. The penetration and number of blows are recorded up to a maximum depth of 1.00m BGL. The penetration rate is recorded as the cone is driven into the subgrade and is used to calculate the strength of the material (CBR value) through which the cone is passing. A change in penetration rate indicates a change in strength between materials, thus allowing layers to be identified and the thickness and strength of each to be determined.

4.6 Installations

A 50mm diameter HDPE tube was installed into all six of the boreholes located across the site. The tubing was slotted from the base of the borehole to a level of 1.00m below ground level. The slotted section was surrounded by pea gravel and the upper 1.00m was surrounded by a bentonite seal. A rubber bung was placed into each tube and a metal stopcock cover cemented into place on each of the installations to facilitate long-term water level monitoring.

5.0 LABORATORY TESTING

5.1 General

All laboratory testing was scheduled by Ruddlesden geotechnical ltd and the results are presented in Appendix C of this report.

5.2 Sample Selection Criteria

Samples were selected for testing to provide an accurate representation of ground conditions encountered.

Samples were taken for geotechnical testing from across the site and from a range of depths.

Samples were selected for contamination testing from fifteen of the trial pits from a range of depths within the top 1m, as, in accordance with the CLEA model, for most exposure pathways the contamination is assumed to be within one metre of the surface.

5.3 Geotechnical Testing

The programme of laboratory testing was carried out in accordance with BS 1377 (1990) “Methods of Test for Soils for Civil Engineering Purposes”.

The following tests were carried out on fifteen samples:

- Moisture Content
- Plasticity Index
- pH Value
- Sulphate Content

5.4 Contamination Testing

In order to test the conceptual model of the site (see Phase 1 report), fifteen soil samples were tested for the following suites of tests; the testing was MCERT accredited:

Ruddlesden Soil Suite 1

Arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, total PAH, soluble sulphate, pH, boron, phenols.

Speciated Polyaromatic Hydrocarbons

Acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h) anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene.

Total Petroleum Hydrocarbons

Total TPH.

Soil Organic Matter (SOM)

Where detectable levels of total TPH were recorded, samples were also tested for the following suite:

Speciated Total Petroleum Hydrocarbons (TPH)

TPH aliphatic >C5-C6; TPH aliphatic >C6-C8; TPH aliphatic >C8-C10; TPH aliphatic >C10-C12; TPH aliphatic >C12-C16; TPH aliphatic >C16-C21; TPH aliphatic >C21-C35; TPH aromatic >C5-C7; TPH aromatic >C7-C8; TPH aromatic >C8-C10; TPH aromatic >C10-C12; TPH aromatic >C12-C16; TPH aromatic >C16-C21; TPH aromatic >C21-C35.

As part of the contamination laboratory protocols, all samples are screened for potential asbestos. Should potential asbestos containing materials (ACM) be suspected during this initial screen, a formal asbestos identification is undertaken.

6.0 RESULTS OF THE INVESTIGATION

6.1 General

The following sections provide a summary of ground conditions encountered, groundwater and laboratory testing. Further details are provided in the Appendices of this report.

The results of this investigation broadly concur with the predicted conceptual model.

6.2 Ground Conditions Encountered

6.2.1 Topsoil

Brown silty clay with frequent (roots and) rootlets (and occasional pieces of brick, pottery, unidentified white material and/ or black carbonaceous material) was encountered in all twenty-nine trial pits and six boreholes to depths of between 0.20m and 0.30m below existing ground levels.

6.2.2 Made Ground

In TPs 02, 13 and 15, and WS2, brown silty (slightly gravelly) clay with occasional rootlets or pieces of brick and/ or black carbonaceous material was encountered to depths of between 0.40m and 1.00m.

In TP09, brown and grey very clayey silty gravelly cobbles with occasional ceramic pipe and rootlets was encountered to a depth of 0.80m.

6.2.3 Natural Geology

Beneath the topsoil and/ or made ground, firm brown silty (slightly sandy) (slightly gravelly) clay was encountered, to depths of between 0.40m and 1.10m, underlain by firm or stiff brown and grey silty (slightly sandy) (slightly or very gravelly) clay (with occasional cobbles and/ or boulders of limestone), to depths of between 0.70m and 2.80m, underlain by stiff dark brown mottled yellowish brown silty clay with some very weak mudstone lithorelics, to depths

of between 2.10m and 3.30m, underlain by stiff or very stiff grey silty clay with some very weak mudstone lithorelics, to the base of the trial pits, to depths of up to 3.40m.

Weak or medium strength (purplish) grey slightly weathered limestone was encountered between depths of 0.80m and 1.10m in TP09 and between 1.60m and 1.90m (base) of TP17, respectively.

In TP13, weak brown and grey slightly weathered siltstone was encountered between depths of 1.40m and 1.60m.

In TP27, layers of dense and dense to very dense brown and grey (very) clayey silty gravel of mudstone and limestone were encountered from depths of 1.10m to 1.70m and 2.00m to 2.10m (base), respectively.

Estimates of undrained shear strength obtained from in-situ shear vane testing at a depth of 1.00m ranged from 50kN/m^2 to 105kN/m^2.

The density of granular deposits was estimated from a visual assessment only, i.e. ease of excavation and stability of trial pit sides.

6.3 Groundwater

Slight or moderate groundwater seepage was encountered in fourteen of the twenty-nine trial pits, between depths of 0.60m and 3.00m, and at the following depths in the boreholes during the course of the investigation and during subsequent monitoring visits:

Table One: Occurrence of Groundwater

Hole ID.	Water Level (mBGL) 09-11/04/13	Water Level (mBGL) 18/04/13	Water Level (mBGL) 14/05/13	Rate of Inflow
TP01	2.20	-	-	Slight
TP02	2.20	-	-	Slight
TP03	2.70	-	-	Slight
TP04	2.80	-	-	Slight
TP05	2.50	-	-	Slight
TP06	2.90	-	-	Slight
TP08	3.00	-	-	Slight
TP12	2.80	-	-	Slight
TP15	0.90	-	-	Slight
TP17	1.90	-	-	Slight
TP18	2.20	-	-	Slight
TP22	0.60	-	-	Slight
TP26	2.50	-	-	Slight
TP29	0.60	-	-	Moderate
WS1	N/A	0.00	0.10	-
WS2	N/A	1.06	1.60	-
WS3	N/A	2.42	1.40	-
WS4	N/A	1.01	1.02	-
WS5	3.00	0.10	0.10	-
WS6	N/A	1.00	0.98	-

6.4 Soakaway Testing

Full details of the soakaway testing results are provided in Appendix A of this report and are summarised in the table below:

Table Two: Summary of Soakaway Test Results

Test No.	Total Recorded Fall of Water Level (m)	Duration of Test (minutes)	Soil Infiltration Rate (m/s)
TP01	0	356	* N/A
TP05	0	353	* N/A
TP11	0	181	* N/A
TP13	0.14	340	* N/A
TP16	0	345	* N/A
TP21	0	327	* N/A
TP26	0	238	* N/A
TP29	-0.06 (rise)	244	* N/A

* Negligible recorded fall in water level. No calculation of soil infiltration rate possible.

6.5 In-Situ CBR Testing (TRL DCP Method)

The results of the in-situ dynamic cone penetrometer (DCP) testing are presented in Appendix A of this report.

From the DCP testing, estimated CBR values ranging from 2% to 42% have been obtained.

6.6 Geotechnical Laboratory Testing

All the geotechnical laboratory testing results are presented in Appendix C of this report and are summarised in the table below.

Table Three: Summary of Geotechnical Laboratory Testing Results

	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	%passing 425µm sieve	Modified Plasticity Index (%)	Volume Change Potential	Sulphate Content (g/l)	pH Value
TP01 1.00m	45.5	83	28	55	100	55	High	0.45	6.0
TP02 1.00m	18.5	34	16	18	100	18	Low	0.052	6.7
TP03 1.75m	25.0	55	23	32	100	32	Medium	0.85	4.3
TP05 1.20m	28.1	58	21	37	100	37	Medium	0.032	5.5
TP08 1.30m	22.8	48	18	30	100	30	Medium	0.62	4.7
TP09 1.10m	21.7	47	16	31	87.7	27	Medium	0.044	6.3
TP10 2.00m	24.2	59	18	41	92.3	38	Medium	0.034	6.4
TP11 2.00m	29.1	61	24	37	100	37	Medium	0.071	5.9
TP17 1.50m	29.4	56	19	37	85.4	32	Medium	0.11	6.7
TP18 1.60m	24.5	39	16	23	100	23	Medium	0.15	6.9
TP20 2.50m	23.5	44	19	25	76.9	19	Low	0.071	4.5
TP23 1.50m	24.0	48	18	30	100	30	Medium	0.15	6.1
TP25 1.00m	33.6	72	26	46	100	46	High	0.29	4.7
TP27 1.00m	16.3	44	16	28	75.1	21	Medium	0.019	6.6
TP29 1.50m	30.8	69	23	46	100	46	High	0.19	6.7

In summary, the soils are classified as being of low to high volume change potential. Elevated levels of soluble sulphate and slightly acidic pH values were recorded in four of the thirty samples tested.

6.7 Contamination Laboratory Testing

All the laboratory testing results, together with the Generic Assessment Criteria to which they have been compared, are presented in Appendix C of this report and the implications are discussed in section 8 of this report.

In summary, elevated levels of total TPH, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene were recorded in one (WS2) of the fifteen soil samples tested and slightly acidic pH values were recorded in four of thirty soil samples tested.

7.0 GEOTECHNICAL ASSESSMENT

7.1 Proposals

It is understood that the site investigated is to be developed for residential purposes with the construction of houses and associated infrastructure. The existing layout is shown on the exploratory hole location plan (Appendix D, Dwg. No. 13107/03).

7.2 Ground Profile

The ground conditions encountered have been summarised in section 6.0 of this report and the individual trial pit and borehole logs, photographs and laboratory testing results should be referred to for further details. Within this section of the report the general ground profile is reviewed and the engineering significance of individual layers is discussed.

Made ground was encountered in four of the twenty-nine trial pits and one of the six boreholes to depths of up to 1.00m. This does not provide a suitable founding stratum due to its low and variable properties and all foundations must be built below it.

Beneath the topsoil and/ or made ground, firm brown silty (slightly sandy) (slightly gravelly) clay was encountered, to depths of between 0.40m and 1.10m. It is considered that this deposit provides a suitable founding stratum and can be treated as being of high volume change potential in accordance with NHBC Standards, chapter 4.2.

This was underlain by firm or stiff brown and grey silty (slightly sandy) (slightly or very gravelly) clay (with occasional cobbles and/ or boulders of limestone), to depths of between 0.70m and 2.80m. This deposit is also considered to provide a suitable founding stratum and laboratory testing indicates it to be of high volume change potential in accordance with NHBC Standards, chapter 4.2.

This was underlain by stiff dark brown mottled yellowish brown silty clay with some very weak mudstone lithorelics, to depths of between 2.10m and 3.30m. This deposit is considered to provide a suitable founding stratum and laboratory testing indicates it to be of high volume change potential in accordance with NHBC Standards, chapter 4.2.

This was underlain by stiff or very stiff grey silty clay with some very weak mudstone lithorelics, to the base of the trial pits, to depths of up to 3.40m. This is considered to provide a suitable founding stratum and can be treated as being of medium volume change potential in accordance with NHBC Standards, chapter 4.2.

Weak or medium strength (purplish) grey slightly weathered limestone was encountered between depths of 0.80m and 1.10m in TP09 and between 1.60m and 1.90m (base) of TP17, respectively. In TP13, weak brown and grey slightly weathered siltstone was encountered between depths of 1.40m and 1.60m. These deposits are considered to provide suitable founding strata.

In TP27, layers of (dense) and (dense to very dense) brown and grey (very) clayey silty gravel of mudstone and limestone were encountered from depths of 1.10m to 1.70m and 2.00m to 2.10m (base), respectively. This deposit is considered to provide a suitable founding stratum and may be treated as being non-shrinkable in accordance with NHBC Standards.

7.3 Foundations

7.3.1 General

The results of this investigation indicate that traditional strip or trench-fill foundations are suitable to support the proposed structures at this site.

7.3.2 Strip or Trench-Fill Foundations

It is considered that a safe nett allowable bearing pressure of 100kN/m^2 may be placed on the firm or stiff clay by strip or trench-fill foundations of least width 600mm at a minimum depth of 1.00m below existing or proposed ground levels, whichever is deepest.

Higher bearing capacities may be locally achievable. Ruddlesden geotechnical should be contacted for further advice if higher bearing capacities are locally required.

Where building near trees, foundations should be deepened for soils of high volume change potential in accordance with NHBC Standards, chapter 4.2. However, more intensive testing might prove local areas to be of medium volume change potential. This might particularly be worthwhile if foundation depths near large trees are excessively deep, i.e. shallower foundation depths may be appropriate if it is proven that all of the soil in a particular area is medium volume change potential. For example, foundations 6m from a mature oak tree in high volume change potential soil would need to be Engineer designed (>2.50m), whereas in medium volume change potential soil foundation depths of 2.50m would be appropriate.

Where foundations are stepped to take account of the influence of trees or the slope of the site they should be stepped gradually with no step exceeding 0.50m.

Foundations must also be built at least 0.20m below any made ground (encountered to a depth of 1.00m in TP13) and superficial soft deposits.

Where foundation depths exceed 1.50m heave precautions are required to protect the foundations from lateral soil heave movements. Suitable heave precautions for trench-fill foundations would be compressible material against the inside faces of all external wall foundations.

Any soft or loose material in the base of foundation excavations should be removed and replaced with compacted lean mix concrete prior to pouring the foundations.

7.3.3 Ground Floor Slabs

Where NHBC building near trees requirements mean that foundation depths are greater than 1.50m or where the depth of made ground is more than 600mm, fully suspended ground floor slabs are required.

Where NHBC building near trees requirements mean that foundation depths are less than 1.50m and where the depth of made ground is less than 600mm, ground bearing slabs may be adopted.

As laboratory testing has classified the soils as being of high volume change potential, suspended ground floors should also be used where ground floor construction is undertaken when soils are seasonally desiccated (i.e. during summer months and autumn).

7.3.4 Sulphate and pH Aggressivity

The results of the pH and sulphate tests have been compared to Table C1 of BRE Special Digest 1 “Concrete in Aggressive Ground”. Groundwater can be treated as mobile and the site is considered to be greenfield. However, slightly acidic pH values (4.3 to 4.7) were recorded in four samples. Therefore, buried concrete must be upgraded to Aggressive Chemical Environment for Concrete (ACEC) class AC-2z.

In accordance with the recommendations outlined in BRE Special Digest 1, for a data set of ten or more samples tested, the characteristic value for levels of soluble sulphate indicate the Design Sulphate Class for the site to be DS-1 (the mean of the highest 20% values = 425mg/l).

7.3.5 Radon Protective Measures

BRE Report 211 “Radon: Guidance on Protective Measures for New Dwellings” and British Geological Survey (BGS) information obtained as part of the Phase 1 report indicate that no radon protection measures are required.

7.4 Excavations and Groundwater

Slight or moderate groundwater seepage was encountered in fourteen of the twenty-nine trial pits, between depths of 0.60m and 3.00m, during the course of the investigation. Subsequent water level monitoring of the boreholes indicated groundwater to be at surface level in WSs 1 and 5. Therefore, some de-watering of excavations (sumping and pumping) will likely be required.

Groundwater levels fluctuate according to the season and from year to year. It is noted that in the weeks prior to the investigation the weather had been particularly wet for the time of year and so higher groundwater levels are not generally anticipated.

Slight collapsing of the trial pit sides was encountered in two of the twenty-nine trial pits, from depths of 0.90m and 2.80m. Therefore, some shoring of temporary excavations may be required in some areas of the site.

Five of the trial pits were terminated at depths of between 1.20m (TP09) and 2.70m (TP10) due to refusal on limestone or mudstone. No problems with excavatability are generally foreseen for most of the proposed development. However, some mechanical breaking and/ or ripping with heavier plant may be locally required for deep excavations.

7.5 Roads

In-situ dynamic cone penetrometer (DCP) testing has been undertaken to provide an estimated California Bearing Ratio (CBR) value.

The DCP testing produced estimated CBR values ranging from 2% to 42%.

The TRL DCP can sometimes produce artificially high CBR values. When the laboratory testing results, which showed the near surface clays to be of high plasticity, are also taken into account, it is recommended that a CBR value of 2% be used for road pavement design at this site.

This should be confirmed prior to construction with full-scale in-situ CBR tests at road level in accordance with BS1377 and to the satisfaction of the adopting authority.

Laboratory testing indicated the soils to be frost-susceptible.

If highways are to be adopted, additional in-situ CBR testing may need to be undertaken by the adopting authority along the line of the highway at and below road formation level to confirm the CBR value.

7.6 Soakaways

In-situ soakaway tests were undertaken at eight locations in general accordance with BRE 365.

A water level fall of only 0.14m was encountered in TP13, a water level rise of 0.06m was encountered in TP29 and water levels remained static in the remaining six locations over the course of the day.

None of the tests empties to 25% of the effective depth and are deemed to have failed. These results indicate that the ground is of very low permeability

and is not suitable for the adoption of soakways as a means of surface water drainage.

The preferable drainage solution at this site would be a combination of on-site attenuation and off-site discharge. If necessary, discharge rates may be able to be controlled by using a throttled outflow valve so that discharge rates are not increased from the present situation.

8.0 CONTAMINATION ASSESSMENT

8.1 General

It is understood that the site investigated is to be developed for residential purposes with the construction of houses with private gardens and associated infrastructure. The existing layout is shown on the exploratory hole location plan (Appendix D, Dwg. No. 13107/03).

The contamination assessment has been carried out in accordance with the latest guidance using a source-pathway-receptor analysis method, so that appropriate remedial measures may be proposed. In particular, reference has been made to the following documents:

- DEFRA & Environment Agency (2004): CLR 11: Model Procedures for the Management of Land Contamination.
- DEFRA (Circular 01/2006): Environmental Protection Act 1990: Part 2A Contaminated Land.
- Environment Agency (2005): The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils.
- Environment Agency (2006): Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination.
- Environment Agency (2009): Human Health Toxological Assessment of Contaminants in Soil.
- Environment Agency (2009): Updated Technical background to the CLEA Model.
- LQM/ CIEH (2009): Generic Assessment Criteria for Human Health Risk Assessment.
- ODPM (2004): Planning Policy Statement 23: Planning and Pollution Control: Annex 2: Development on Land Affected by Contamination.

8.2 Human Health Risk Assessment

8.2.1 Generic Assessment Criteria

A Generic Qualitative Risk Assessment (GQRA) has been undertaken to assess the level of risk posed to human health by soil contamination.

The results of the contamination laboratory testing have been compared to Generic Assessment Criteria (GAC) to aid the evaluation of the extent of contamination at the site. If any of the GAC are exceeded, this may be indicative of an unacceptable risk to the health of site-users and that further investigation and/ or remediation is required.

The proposed end use of residential land use has been used in this risk assessment.

Where Soil Guideline Values (SGV's), published by DEFRA and derived from the Contaminated Land Exposure Assessment (CLEA) model, are available, the results of the laboratory testing have been compared against the published SGV's for the proposed end use.

For analytes where SGV's have not yet been produced, GAC produced by Land Quality Management (LQM) and the Chartered Institute of Environmental Health (CIEH) have been referenced. The LQM/ CIEH GAC have been derived using the DEFRA and Environment Agency CLEA UK (1.04) model, which is the same methodology as the Government's Soil Guideline Values (SGV's) and is the Environment Agency's currently recommended exposure model.

In the absence of a SGV or LQM/ CIEH GAC, for determinands that are either not particularly harmful to human health or for which toxological and physio-chemical information is particularly difficult to obtain, the results have been compared to initial screening values. A Detailed Quantitative Risk Assessment (DQRA) is undertaken if any of these initial screening values are exceeded.

For determinands that are primarily deleterious to building materials, levels provided in BRE Special Digest 1, Concrete in Aggressive Ground, are considered to be the most appropriate for comparison.

8.2.2 Comparison of Testing Results to GAC

Of the fifteen soil samples tested, the following Generic Assessment Criteria were exceeded for a residential land use:

Table Four: Contamination Testing Results Exceeding GAC

Determinand	Unit	GAC	Highest Recorded Value	Location of Highest Recorded Value	No. of values exceeding GAC	Source of GAC
Total TPH	mg/kg	10	1400	WS2	1 of 15	Screening Value
Benzo(a)anthracene	mg/kg	1% SOM: 3.1; 2.5% SOM: 4.7; 6% SOM: 5.9	76	WS2	1 of 15	LQM/ CIEH
Chrysene	mg/kg	1% SOM: 6.0; 2.5% SOM: 8.0; 6% SOM: 9.3	54	WS2	1 of 15	LQM/ CIEH
Benzo(b)fluoranthene	mg/kg	1% SOM: 5.6; 2.5% SOM: 6.5; 6% SOM: 7.0	67	WS2	1 of 15	LQM/ CIEH
Benzo(k)fluoranthene	mg/kg	1% SOM: 8.5; 2.5% SOM: 9.6; 6% SOM: 10	38	WS2	1 of 15	LQM/ CIEH
Benzo(a)pyrene	mg/kg	1% SOM: 0.83; 2.5% SOM: 0.94; 6% SOM: 1.0	62	WS2	1 of 15	LQM/ CIEH
Dibenzo(a,h)anthracene	mg/kg	1% SOM: 0.76; 2.5% SOM: 0.86; 6% SOM: 0.90	7	WS2	1 of 15	LQM/ CIEH
Indeno(1,2,3-cd)pyrene	mg/kg	1% SOM: 3.2; 2.5% SOM: 3.9; 6% SOM: 4.2	29	WS2	1 of 15	LQM/ CIEH
pH (less than)	-	5.5	4.3	TP03	2 of 24	BRE

It is noted that the comparison of Total TPH to the screening value (of any detectable level) provides an initial indication of TPH contamination only. Total Petroleum Hydrocarbons are made of many constituent organic chemicals. The more detailed, speciated TPH analysis, which divided the TPH into individual fractions, shows the recorded levels of TPH not to be potentially harmful to human health given the proposed end use.

Slightly acidic ground conditions (pH 4.3 to 4.7) have been recorded in samples taken from TP03, TP20, TP08 and TP25. Such pH values can

increase the severity of other contaminants. However, as no other elevated levels of contamination were recorded in these areas, the levels of pH recorded during this investigation are not considered to be significant. For comparison, household vinegar has a pH of approximately 2.5.

However, it is considered that the recorded levels of benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a) pyrene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene could potentially be harmful to human health, given the proposed end use.

It is noted that the only sample with elevated levels of contamination was taken from a superficial depth (0.40m) of made ground encountered in WS2, located in the area of a former army base, as described in the Initial Conceptual Model (Section 5.2.1) of the Phase 1 report. Given that no significantly elevated levels of contamination were recorded across the remainder of the site, it is considered likely that the contamination is limited to this area in the far northwest of the site, though its extent requires further delineation (see section 8.9 of this report).

No potential asbestos containing materials (ACM) were recorded in any of the samples tested at the contamination laboratory and no obvious evidence of asbestos was noted in any of the trial pits or boreholes or across the site.

8.3 Controlled Waters Risk Assessment

In order for land affected by contamination to cause harm, there must be a source of contamination, a receptor that can be harmed and a pathway by which the receptor can be exposed to the contamination.

Some potentially isolated contamination of the soil has been identified within the made ground encountered in WS2. Groundwater level monitoring has identified water levels at the ground surface in this location. Given the very low permeability of the natural clay deposits beneath the made ground, the contamination within the made ground is unlikely to have leached through the

clay into the groundwater. Further testing of the groundwater is recommended to confirm the presence or absence of contamination of the groundwater (see section 8.9 of this report).

8.4 Ground Gas Assessment

In order to assess the risks posed by ground gas, the principles outlined in CIRIA C665 (2007) Assessing Risks Posed by Hazardous Ground Gases to Buildings have been followed.

The breakdown of organic material in made ground can produce ground gas, though it may also be produced by other, natural, sources (e.g. coal, peat). The principal components of ground gas are methane (potentially explosive) and carbon dioxide (potential asphyxiant).

There are no recorded landfill sites within 250m of the site and no obviously biodegradable material was noted within the superficial depths of made ground encountered.

Therefore, ground gas protection measures are not considered to be necessary at this site.

From an assessment of the ground conditions encountered and laboratory testing results, significant levels of Volatile Organic Compounds (VOCs) are unlikely to be present. Therefore, a hydrocarbon vapour resistant membrane is not considered to be necessary.

8.5 Revised Conceptual Model

Prior to the investigation, it was considered unlikely that any significant contamination would be present. However, some made ground was possible in the northwest of the site, associated with a former army base occupation, which could be generically contaminated.

The results of this investigation indicate elevated levels of contamination to be present at this site that are potentially harmful to human health. However, these levels of contamination appear to be limited to the far northwest of the site only.

The controlled waters risk assessment indicated the levels of contamination recorded in this investigation are not likely to be harmful to the water environment.

Therefore, the “source” and “pathway” and “receptors” relating to human health only, as described in the initial conceptual model, are considered to still be applicable, in the far northwest of the site only (former military base).

8.6 Discussion and Recommendations

This risk assessment has shown that, left unremediated and in the absence of further testing, the levels of contamination in the ground in the far northwest of the site could potentially be harmful to human health given the proposed end use. Further testing is required to determine the extent of contamination in this area.

Across the remainder of the site, the results of this investigation have confirmed that the levels of contamination present are unlikely to be harmful to human health or the water environment given the proposed end use and no remedial measures are required.

Following the analysis of the results of the proposed additional testing in the far northwest of the site, suitable remedial measures may be proposed. This may take the form of localised contaminated soil removal and/ or capping of garden areas.

Alternative remedial methods such as the use of chemical, biological or physical treatments to destroy or immobilise the contamination would be likely to prove prohibitively expensive and impractical due to the small size of the area of concern.

If any unexpected discoveries are encountered during construction activities (i.e. anything substantially different from the findings of this investigation), Ruddlesden geotechnical ltd, or another suitably qualified Engineer, should be contacted so that appropriate recommendations may be provided.

In line with general good practice, comprehensive and accurate site records should be kept, including details of where soil has been moved to or from site and tip receipts.

If contamination aspects are a planning condition, these recommendations are subject to the approval of the local planning authority and the Environment Agency.

8.7 Water Pipe Selection Site Assessment

A site assessment has been undertaken in accordance with the UKWIR document “Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites”. Based on the findings of the Phase 1 report, exploratory hole logs and laboratory testing information, upgraded water supply pipes are not considered to be necessary at this site. It is noted that some elevated levels of total TPH were identified in the location of WS2. Following the proposed remediation upgraded water supply pipes should not be necessary in this area of the site. However, additional sampling and laboratory testing is recommended to confirm this.

8.8 Off-Site Disposal of Excavated Soils

From an assessment of the contamination testing results, it is considered that excavated soil is generally likely to be classified as Inert Waste for off-site disposal purposes. Soil excavated from the area of WS2 may be classified as Non-Hazardous Waste.

However, this classification should be confirmed by passing these results to a licensed tip operator.

If necessary and required by the tip operator, Waste Acceptance Criteria (WAC) testing could be carried out on soil to be removed from site to confirm the classification of the soil.

8.9 Further Work

It is recommended that more intensive sampling and testing be carried out to determine the lateral and vertical extent of contamination in the area of WS2. This will enable appropriate recommendations to be made to make the site suitable for the proposed end use, which might include the excavation and removal of contaminated soil in this area of the site.

A combination of soil samples and groundwater samples should be tested for elevated levels of contaminants in the far northwest of the site. In addition, samples should be tested for the UKWIR suite to determine whether water supply pipes should be upgraded to withstand hydrocarbon attack in this area. Waste Acceptance Criteria (WAC) testing might also be useful to classify soils in this area of the site for off-site disposal.

9.0 CONCLUSIONS

1. Ground conditions encountered were typically topsoil and/ or made ground, to depths of between 0.20m and 1.00m, underlain by firm silty clay, to depths of between 0.40m and 1.10m, underlain by firm or stiff silty clay (with occasional cobbles and/ or boulders of limestone), to depths of between 0.70m and 2.80m, underlain by stiff dark silty clay with some very weak mudstone lithorelics, to depths of between 2.10m and 3.30m, underlain by stiff or very stiff silty clay with some very weak mudstone lithorelics, to the base of the trial pits, to depths of up to 3.40m.

2. Strip or trench-fill foundations are recommended at a minimum depth of 1.00m below existing or proposed ground levels, whichever is deepest. Where building near trees, foundations should be deepened for soils of high volume change potential in accordance with NHBC Standards.

3. Water level monitoring of borehole installations indicated groundwater to be at surface level in WSs 1 and 5. Therefore, some de-watering of excavations (sumping and pumping) will likely be required.

4. In-situ soakaway testing indicated that the ground is of low permeability and not suitable for the use of soakaways as a means of surface water drainage at this site. The preferable drainage solution would be on-site attenuation combined with off-site discharge.

5. Elevated levels of contamination were identified in the far northwest of the site (area used by the army in WWII), that are considered to be harmful to human health given the proposed end use but not to the water environment. Additional sampling and testing is recommended to determine the extent of the contamination and to enable detailed remediation recommendations to be made.

6. No radon protective measures are required and no ground gas protective measures are considered to be necessary.

10.0 REFERENCES

- British Standard BS5930 (1999): Code of Practice for Site Investigation.
- British Standard BS10175 (2011): Investigation of Potentially Contaminated Sites – Code of Practice.
- Building Research Establishment (2001): Special Digest 1: Concrete in Aggressive Ground.
- Building Research Establishment (2007): Report BR 211: Radon: Guidance on Protective Measures for New Dwellings.
- Building Research Establishment Digest 365 (2007): Soakaway Design.
- CIRIA (2007): C665: Assessing Risks Posed by Hazardous Ground Gases to Buildings.
- DEFRA & Environment Agency (2004): CLR 11: Model Procedures for the Management of Land Contamination.
- DEFRA (Circular 01/2006): Environmental Protection Act 1990: Part 2A Contaminated Land.
- Environment Agency (2005): The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils.
- Environment Agency (2006): Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination.
- Environment Agency (2009): Human Health Toxological Assessment of Contaminants in Soil.
- Environment Agency (2009): Updated Technical background to the CLEA Model.
- Eurocode 7 (2007): Part 2 Ground Investigation and Testing.
- LQM/ CIEH (2009): Generic Assessment Criteria for Human Health Risk Assessment.
- ODPM (2004): Planning Policy Statement 23: Planning and Pollution Control: Annex 2: Development on Land Affected by Contamination.
- UKWIR (2011): Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites.

11.0 TERMS AND CONDITIONS

1. This report has been prepared for the sole use of the specified client in response to an agreed brief and for the stated purpose. The recommendations used in this report should not be used for any other schemes on or adjacent to this site without further reference to this company.

2. The copyright of this report is owned by Ruddlesden geotechnical ltd. With the exception of the named client, who may copy and distribute the report to deal with matters directly relating to its commission, this report may not be reproduced, published or adapted without written consent of the company.

3. New information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances, this report should be referred to Ruddlesden geotechnical ltd for reassessment and, if necessary, reappraisal.

4. The comments given in this report assume that ground conditions do not vary beyond the range revealed by the investigation. There may, however, be conditions at or adjacent to the site that have not been disclosed by the investigation and which, therefore, have not been considered in this report. Accordingly, a careful watch should be maintained during any future groundworks and the recommendations of this report reviewed as necessary.

5. Whilst confident in the findings of the report, the recommendations may not necessarily be accepted by other authorities without question. It is advisable that, where appropriate, the report be submitted to the relevant statutory authorities and approval obtained before detailed design, site works or other irrevocable action is undertaken.

6. All comments and recommendations are based on groundwater conditions encountered at the time of investigation. It should be noted that groundwater levels might fluctuate according to the season and from year to year. This may have implications on other recommendations, including foundations and excavations.

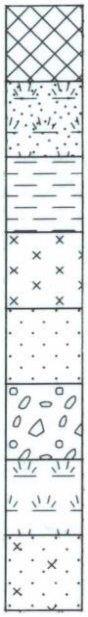
APPENDICES

APPENDIX A

EXPLORATORY HOLE RECORDS AND FIELD DATA

KEY TO TRIAL PIT AND BOREHOLE LOGS (COMMON SYMBOLS)

STRATA LEGEND



Made Ground

Topsoil

Clay

Silt

Sand

Gravel

Peat

Composite soil types will be signified by combined symbols, e.g. silty sand

Chalk

Limestone

Coal

Mudstone

Siltstone

Sandstone

Fine grained igneous rock (e.g. basalt)

Medium grained igneous rock (e.g. granite)

Fine grained metamorphic rock (e.g. slate)

GROUNDWATER

Groundwater strike

Standing groundwater level

INSTALLATIONS

CEMENT SEAL

BENTONITE SEAL

FILTER PACK (SLOTTED PIPE)

SAMPLES

D	Small disturbed sample
J	Small disturbed sample (amber glass jar)
B	Disturbed bulk sample
U100	Undisturbed sample (100mm diameter)
W	Water sample

IN-SITU TESTING

SPT	Standard Penetration Test (split spoon sampler)
SPT(C)	Standard Penetration Test (solid cone)
V	Shear vane test
CBR	California Bearing Ratio (estimated from soil assessment (mexe) cone penetrometer)

ROTARY DRILLING

TCR	Total core recovery (%)
SCR	Solid core recovery (%)
RQD	Rock quality designation (%)
FI	Fracture Index (fractures/ m)
NI	Non-intact

SPT RESULTS (EXAMPLES)

30	"N" Value (blows recorded for 300mm penetration, following 150mm seating drive)
50/125	50 blows for 125mm penetration

IDENTIFICATION AND DESCRIPTION OF SOILS (Taken from BS 5930: 1999, Table 13)

Soil Group: Very coarse soils

Density/Compactness/Strength – Term	Density/Compactness/Strength – Field Test
Loose	By inspection of voids and particle packing
Dense	

Discontinuities – Scale of spacing of discontinuities: Term	Mean spacing mm
Very widely	Over 2000
Widely	2000 to 600
Medium	600 to 200
Closely	200 to 60
Very closely	60 to 20
Extremely closely	Under 20
Fissured	Breaks into blocks along unpolished discontinuities
Sheared	Breaks into blocks along polished discontinuities

Bedding – Scale of bedding thickness: Term	Mean thickness mm
Very thickly bedded	Over 2000
Thickly bedded	2000 to 600
Medium bedded	600 to 200
Thinly bedded	200 to 60
Very thinly bedded	60 to 20
Thickly laminated	20 to 6
Thinly laminated	Under 6
Inter-bedded	Alternating layers of different types, prequalified by thickness term if in equal proportions. Otherwise thickness of and spacing between subordinate layers defined.
Inter-laminated	Spacing terms also used for distance between partings, isolated beds or laminae, desiccation, cracks, rootlets etc.

Coarse soils (over ~65% sand and gravel sizes)

Borehole with SPT N-value	
Very loose	0-4
Loose	4-10
Medium dense	10-30
Dense	30-50
Very dense	>50
Slightly cemented	Visual examination: pick removes soil in lumps which can be abraded

Fine soils (over ~35% silt and clay sizes)

Un-compact	Easily moulded or crushed in the fingers
Compact	Can be moulded or crushed by strong pressure in the fingers
Very soft C_u 0 – 20kPa	Finger easily pushed in up to 25mm
Soft C_u 20 – 40kPa	Finger pushed in up to 10mm
Firm C_u 40 – 75kPa	Thumb makes impression easily
Stiff C_u 75 – 150kPa	Can be indented slightly by thumb
Very stiff C_u 150 - 300kPa	Can be indented by thumb nail
Hard (or very weak mudstone) C_u > 300kPa	Can be scratched by thumb nail

Colour

Red, Orange, Yellow, Brown, Green, Blue, White, Cream, Grey, Black etc.

Light

Dark

Mottled

Composite Soil Types (mixtures of basic soil types)

For mixtures involving very coarse soils

Term	Approx %[c] secondary
Slightly (sandy[d])	<5
(sandy[d])	5 to 20 [b]
Very (sandy[d])	>20[b]
SAND AND GRAVEL	About 50[b]

Term	Approx % [c] Secondary
Slightly (sandy[e])	<35
(sandy[e])	35 to 65[a]
Very (sandy[f])	>65[a]

Particle Shape

Angular

Sub angular

Sub rounded

Rounded

Flat

Tabular

Elongated

Minor constituent type

Calcareous, Shelly, Glauconitic, Micaceous

Using terms such as:

slightly calcareous

calcareous

very calcareous

% defined on a site or material specific basis or subjective

Particle Size

	200
Coarse	60
Medium	20
Fine	6
Coarse	2
Medium	0.6
Fine	0.2
Coarse	0.06
Medium	0.02
Fine	0.006
	0.002

Principal SOIL TYPE	Visual Identification	Minor Constituents	Example Stratum Names	Example Descriptions
BOULDERS	Only seen complete in pits or exposures	Shell fragments, pockets of peat, gypsum crystals, flint gravel, fragments of brick, rootlets, plastic bags etc. using terms such as: with rare with occasional with abundant/ frequent/ numerous % defined on a site or material specific basis or subjective	Recent Deposits Alluvium Weathered Mercia Mudstone Lias Clay Embankment Fill Topsoil Made Ground or Glacial Deposit ? etc.	Loose brown very sandy sub-angular fine to coarse flint GRAVEL with small pockets (up to 30 mm) of clay (Terrace Gravels)
COBBLES	Often difficult to recover whole from boreholes			
GRAVEL	Easily visible to naked eye; particle shape can be described; Grading can be described			Medium dense light brown gravelly clayey fine SAND. Gravel is fine (Glacial Deposits)
SAND	Visible to naked eye; No cohesion when dry; Grading can be described.			Stiff very closely sheared orange mottled brown slightly gravelly CLAY. Gravel is fine and medium of rounded quartzite. (Reworked Weathered London Clay)
SILT	Only coarse silt visible with hand lens; Exhibits little plasticity and marked dilatancy; Slightly granular or silky to the touch; Disintegrates in water; Lumps dry quickly;			Firm thinly laminated grey CLAY with closely spaced thick laminae of sand. (Alluvium)
CLAY	Dry lumps can be broken but not powdered between the fingers; They also disintegrate under water but more slowly than silt; Smooth to the touch; Exhibits plasticity but no dilatancy; Sticks to the fingers and dries slowly; Shrinks appreciably on drying usually showing cracks			Plastic brown clayey amorphous PEAT. (Recent Deposits)

Organic soils

Firm	Fibre already compressed together	Fibrous	Plant remains recognizable and retains some strength
Spongy	Very compressible and open structure	Pseudo-fibrous	Plant remains recognizable, Strength lost
Plastic	Can be moulded in hand and smears fingers	Amorphous	Recognizable plant remains absent

Transported mixtures	Colour	
Slightly organic clay or silt Slightly organic sand	Grey as mineral	Contains finely divided or discrete particles of organic matter, often with distinctive smell, may oxidize rapidly. Describe as for inorganic soils using terminology above.
Organic clay or silt Organic sand	Dark grey Dark grey	
Very organic clay or silt Very organic sand	Black Black	
Accumulated in situ	Predominantly plant remains, usually dark brown or black in colour, distinctive smell, low bulk density. Can contain disseminated or discrete mineral soils.	
Peat		

NOTES

a) Or described as coarse soil depending on mass behaviour

b) Or described as fine soil depending on mass behaviour

c) % coarse or fine soil type assessed excluding cobbles and boulders

d) Gravelly or sandy and/or silty or clayey

e) Gravelly and/or sandy

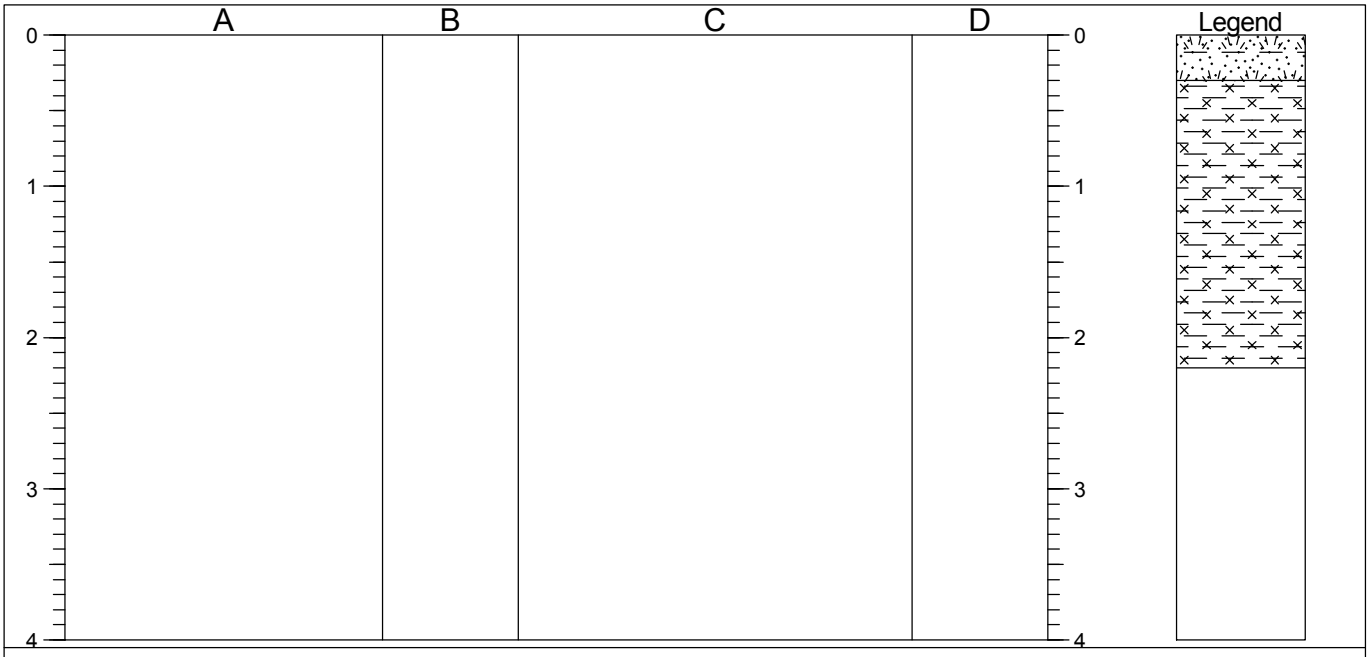
f) Gravelly or sandy

TRIAL PIT LOGS

Ruddlesden geotechnical ltd
65 Langaton Lane, Pinhoe
Exeter EX1 3SP
Telephone: 01392 678082

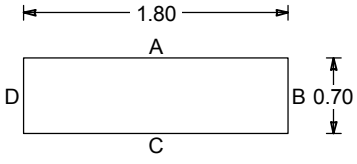
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.	0.10	J	
0.30-2.20		Firm brown and grey silty CLAY.	1.00 1.00	D VANE	 50
		1.60 ...with some very weak mudstone lithorelics			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered at trial pit base.



GENERAL REMARKS

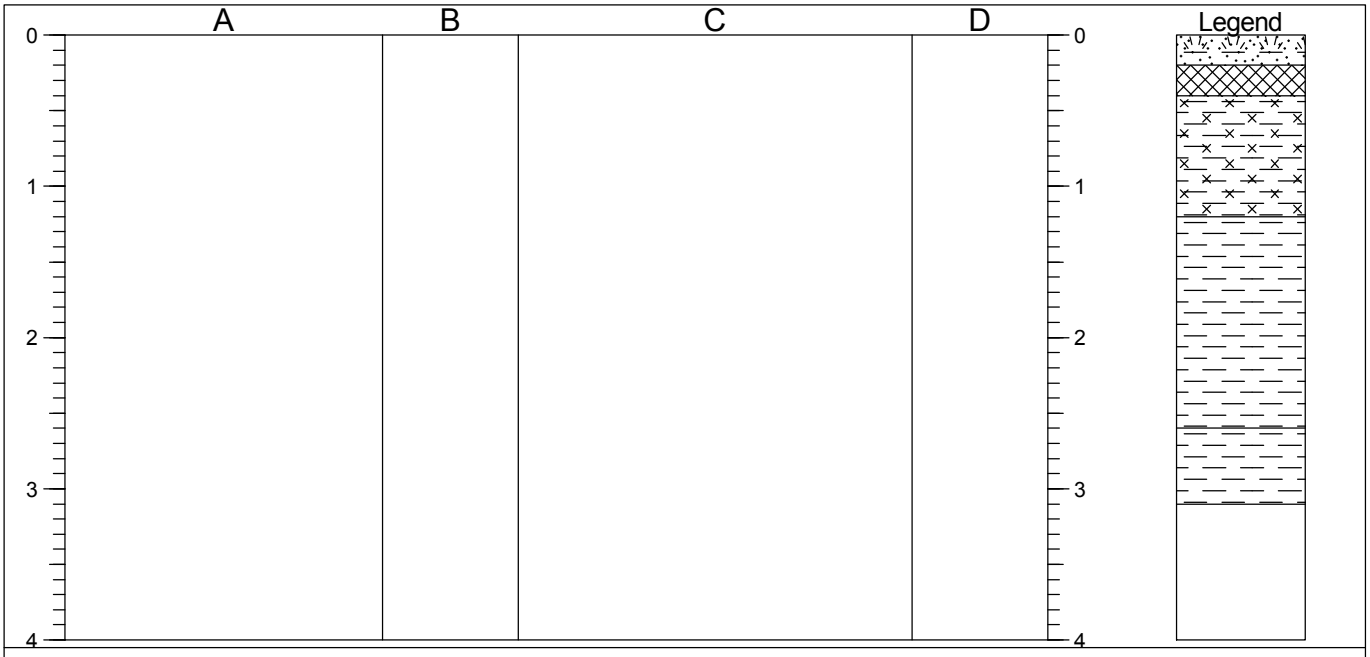
All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

AGS3 UK TP 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 21/5/13

Ruddlesden geotechnical ltd
65 Langaton Lane, Pinhoe
Exeter EX1 3SP
Telephone: 01392 678082

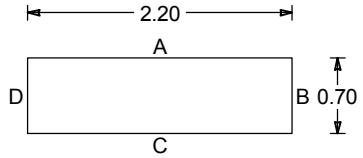
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP02
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	11-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.20		TOPSOIL: Brown silty clay with frequent rootlets and occasional fragments of glass, black carbonaceous material and unidentified white material.			
0.20-0.40		MADE GROUND: Brown silty clay with occasional rootlets.	0.20	J	
0.40-1.20		Stiff brown and grey silty CLAY.			
			1.00	VANE	100
1.20-2.60		Firm brown and grey silty sandy CLAY.			
2.60-3.10		Stiff grey silty sandy CLAY.	2.70	D	

Shoring/Support: None.
Stability: Slight collapse of trial pit sides from 0.90m.
Groundwater: Slight seepage encountered from 2.20m.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

AGS3 UK TP 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 21/5/13

Ruddlesden geotechnical ltd
65 Langaton Lane, Pinhoe
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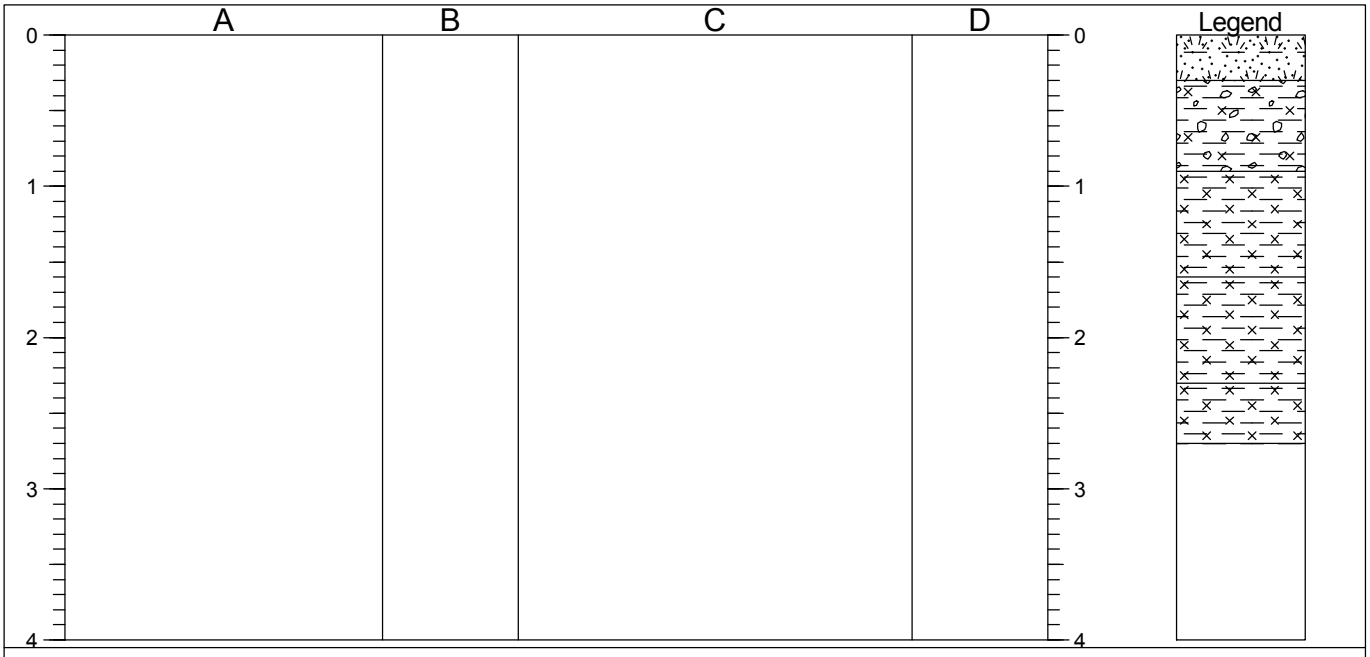
Telephone: 01392 678082

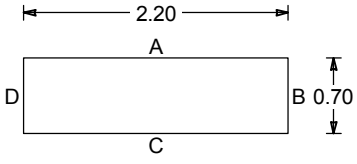
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP03
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-0.90		Firm brown silty gravelly CLAY. Gravel is fine to coarse subangular to subrounded of chert.	0.75	J	
0.90-1.60		Firm to stiff brown and grey silty CLAY.	1.00	VANE	75
1.60-2.30		Stiff dark brown mottled yellowish brown and grey silty CLAY with some very weak mudstone lithorelics.	1.75	D	
2.30-2.70		Very stiff grey silty CLAY with some very weak mudstone lithorelics.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered at trial pit base.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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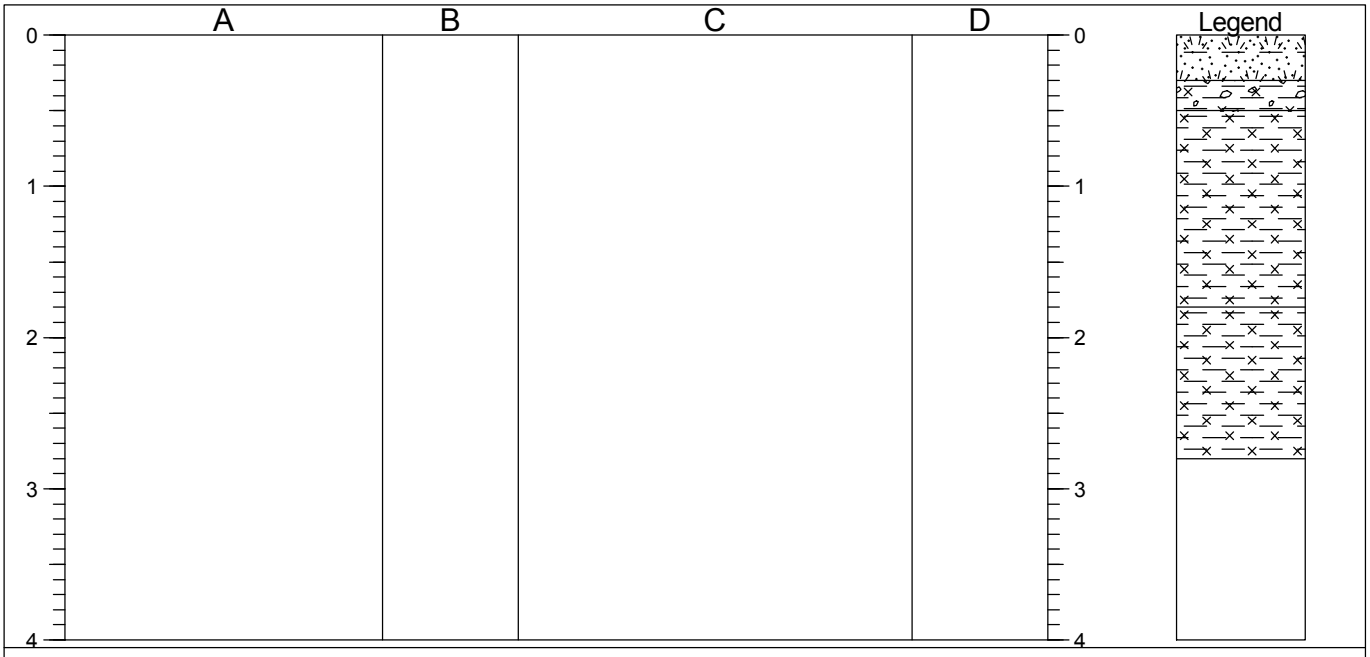
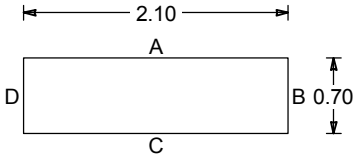
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP04
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Dark brown silty gravelly clay with frequent rootlets.			
0.30-0.50		Firm brown silty gravelly CLAY. Gravel is fine to coarse subangular to subrounded of chert.			
0.50-1.80		Firm brown and grey silty CLAY. 1.00 ...stiff 1.10 ...much gravel cobbles and boulders of limestone and quartz	1.00	VANE	95
1.80-2.80		Very stiff grey silty CLAY with some very weak mudstone lithorelics.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered at trial pit base.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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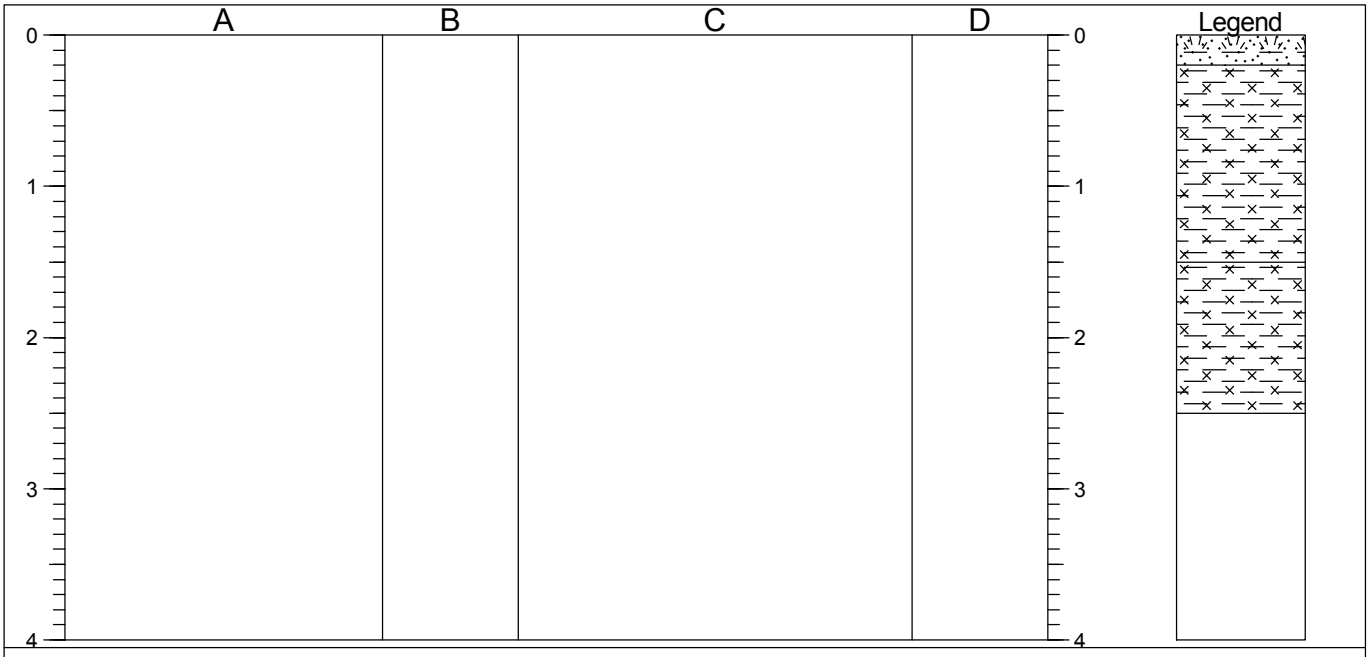
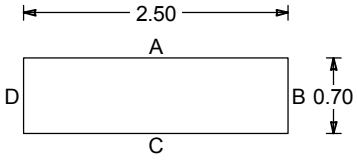
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP05
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.20		TOPSOIL: Brown silty clay with frequent rootlets.			
0.20-1.50		Firm brown silty CLAY with some cobbles of limestone.			
			0.50	J	
		0.80 ...no cobbles			
		1.00 ...stiff	1.00	VANE	95
			1.20	D	
1.50-2.50		Stiff brown and grey silty CLAY.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered at trial pit base.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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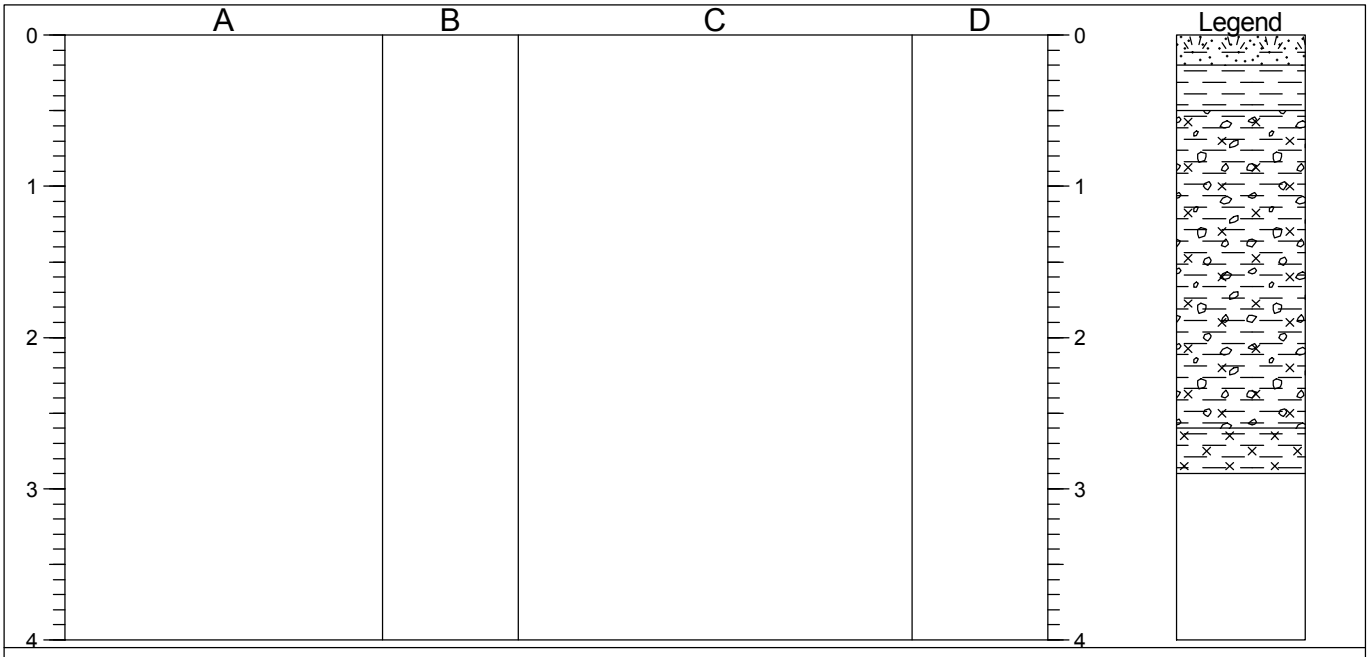
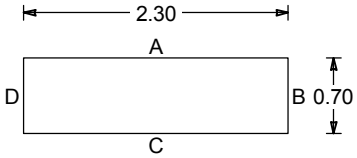
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP06
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	11-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.20		TOPSOIL: Brown silty clay with frequent rootlets.			
0.20-0.50		Firm brown silty slightly sandy CLAY.			
0.50-2.60		Firm brown and grey silty slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded chert. 1.30 ...no gravel 1.50 ...stiff	1.00	VANE	65
2.60-2.90		Very stiff grey silty CLAY with some weak mudstone lithorelics.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered at trial pit base.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

AGS3 UK TP 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 21/5/13

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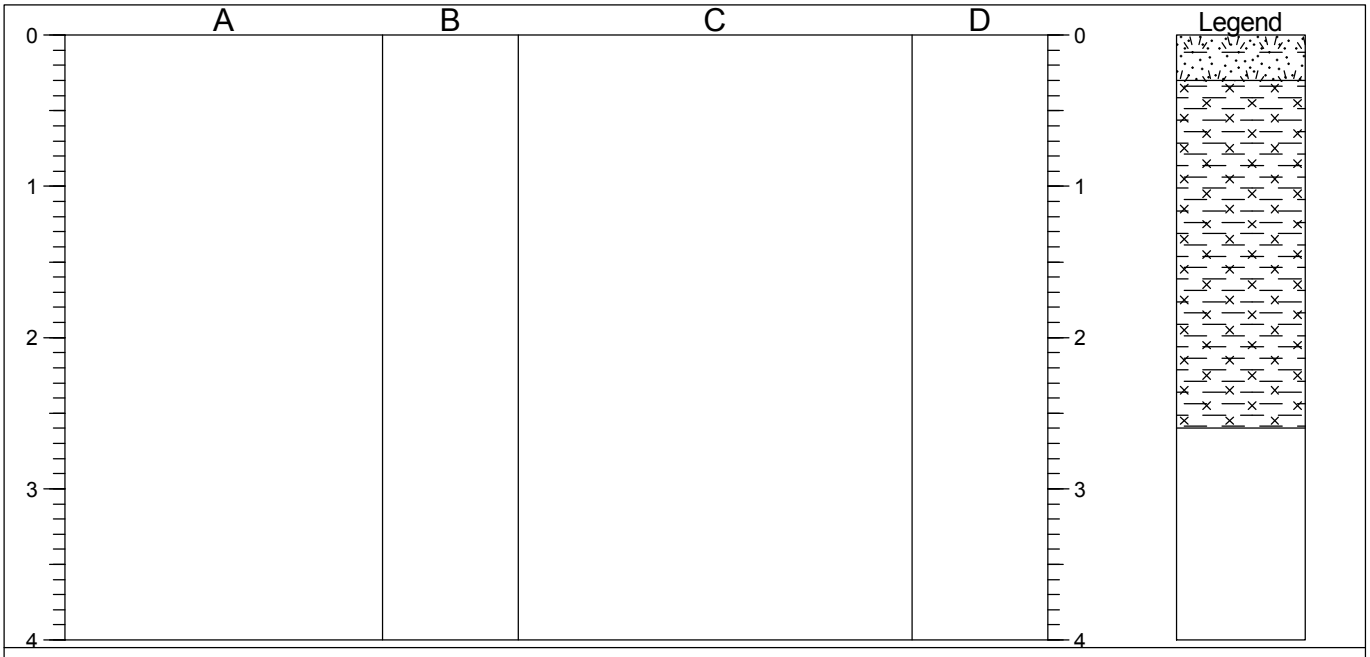
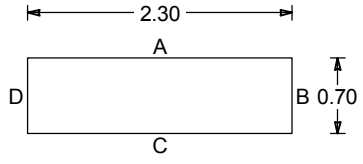
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP07
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	11-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-2.60		Firm brown and grey silty CLAY.			
		1.00 ...stiff	1.00	VANE	95
		1.80 ...with some very weak mudstone lithorelics			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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Exeter EX1 3SP
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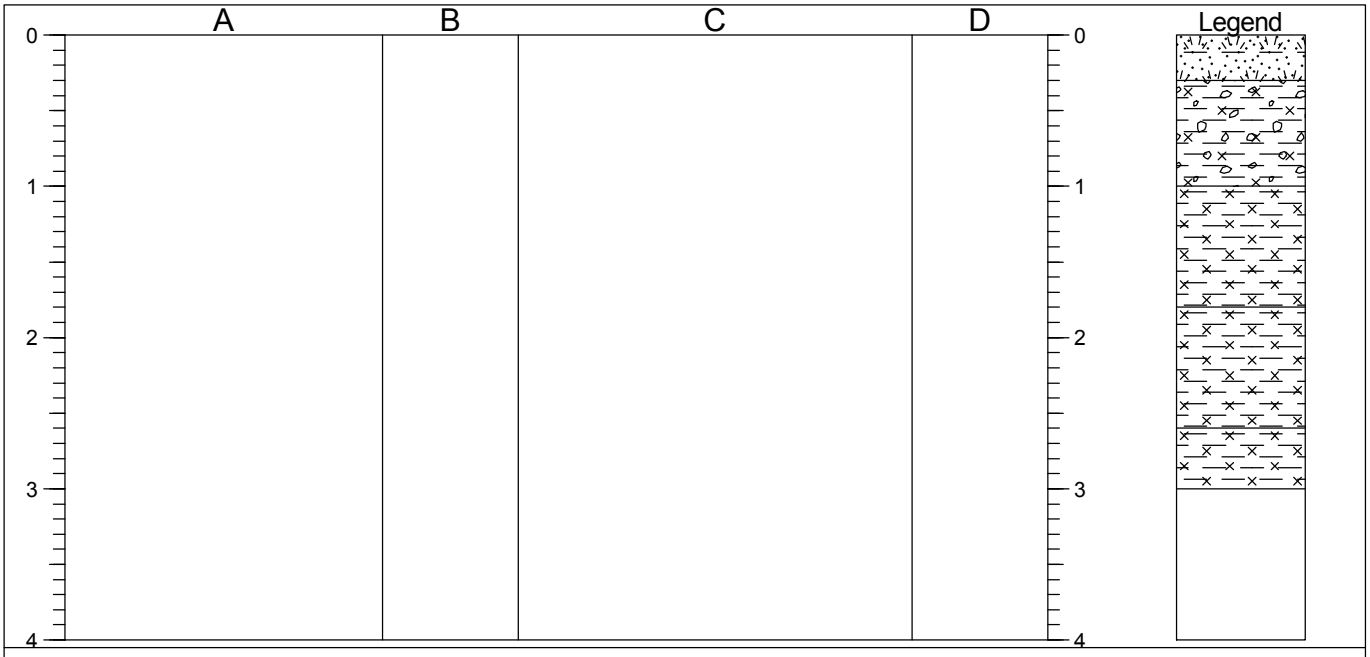
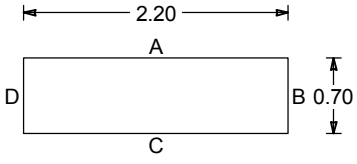
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP08**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Dark brown silty clay with frequent rootlets and occasional fragments of brick and black carbonaceous material.			
0.30-1.00		Firm brown silty gravelly CLAY. Gravel is fine to coarse subangular to subrounded of chert. 0.70 ...no gravel	0.30	J	
1.00-1.80		Stiff brown and grey silty CLAY.	1.00 1.30	VANE D	95
1.80-2.60		Stiff dark brown mottled yellowish brown and grey silty CLAY with some very weak mudstone lithorelics.			
2.60-3.00		Very stiff grey silty CLAY with some very weak mudstone lithorelics.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered at trial pit base.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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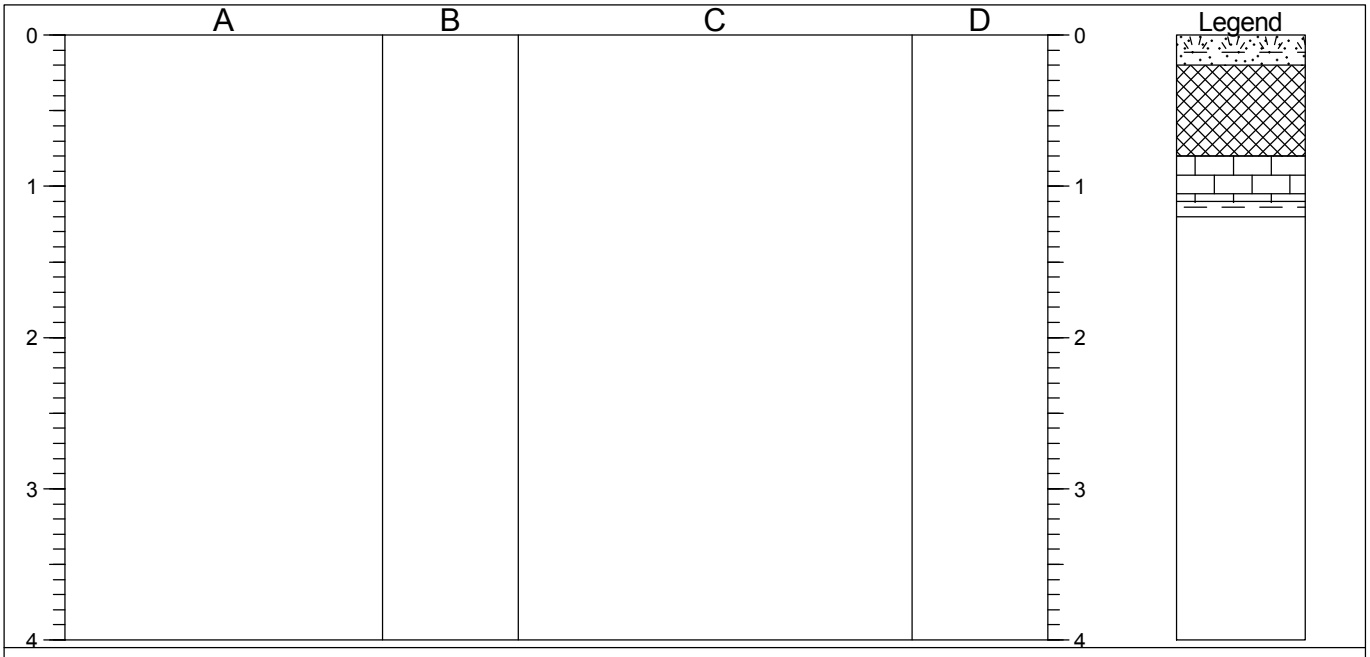
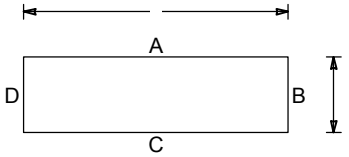
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP09**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	11-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.20		TOPSOIL: Brown silty clay with frequent roots and rootlets.			
0.20-0.80		MADE GROUND: Brown and grey very clayey silty gravelly cobbles with occasional ceramic pipe and rootlets. Cobbles are of limestone.	0.50	J	
0.80-1.10		Moderately strong grey slightly weathered LIMESTONE (recovered as gravel and cobbles).			
1.10-1.20		Stiff brown and grey silty slightly sandy CLAY.	1.10	D	

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

1. Trial pit completed at 1.20m due to refusal.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

AGS3 UK TP 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 21/5/13

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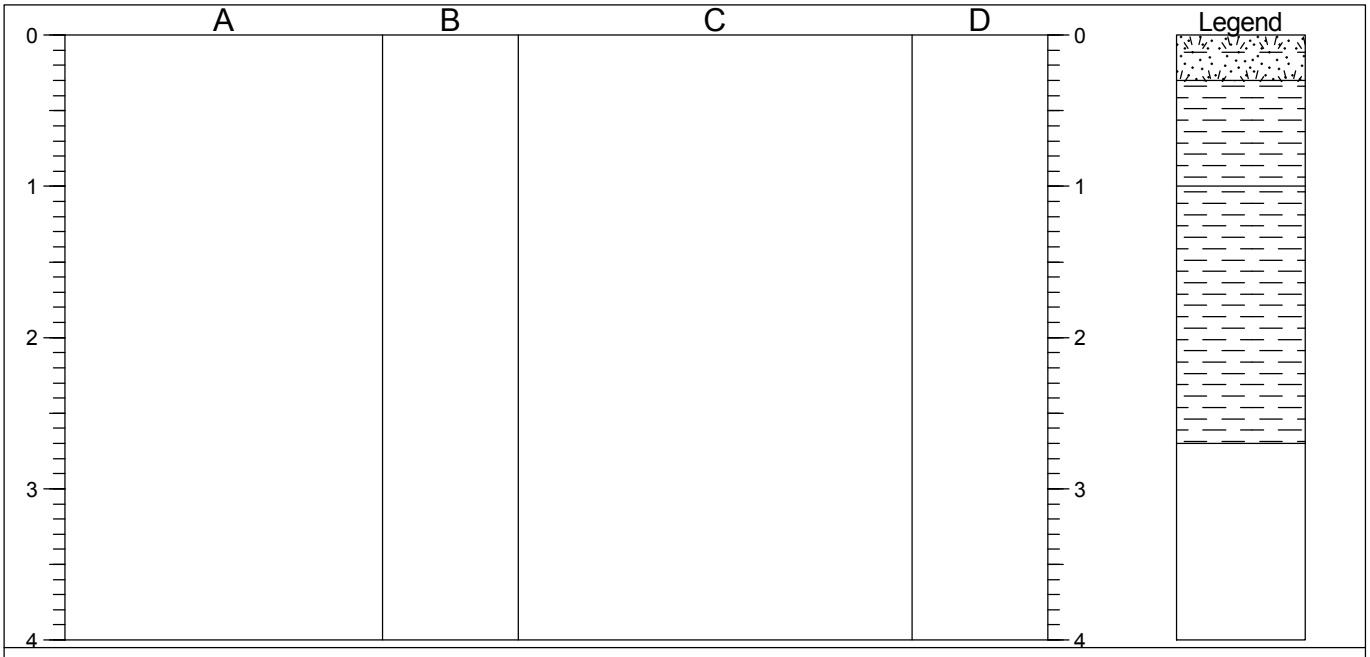
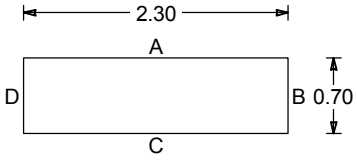
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP10**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	11-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent roots and rootlets.	0.10	J	
0.30-1.00		Firm brown silty slightly sandy CLAY.			
1.00-2.70		Firm brown to stiff grey and brown silty sandy CLAY.	1.00	VANE	75
		1.70 ...very stiff with some very weak mudstone lithorelics	2.00	D	

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

1. Trial pit terminated at 2.70m due to refusal on suspected bedrock.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

Ruddlesden geotechnical ltd
65 Langaton Lane, Pinhoe
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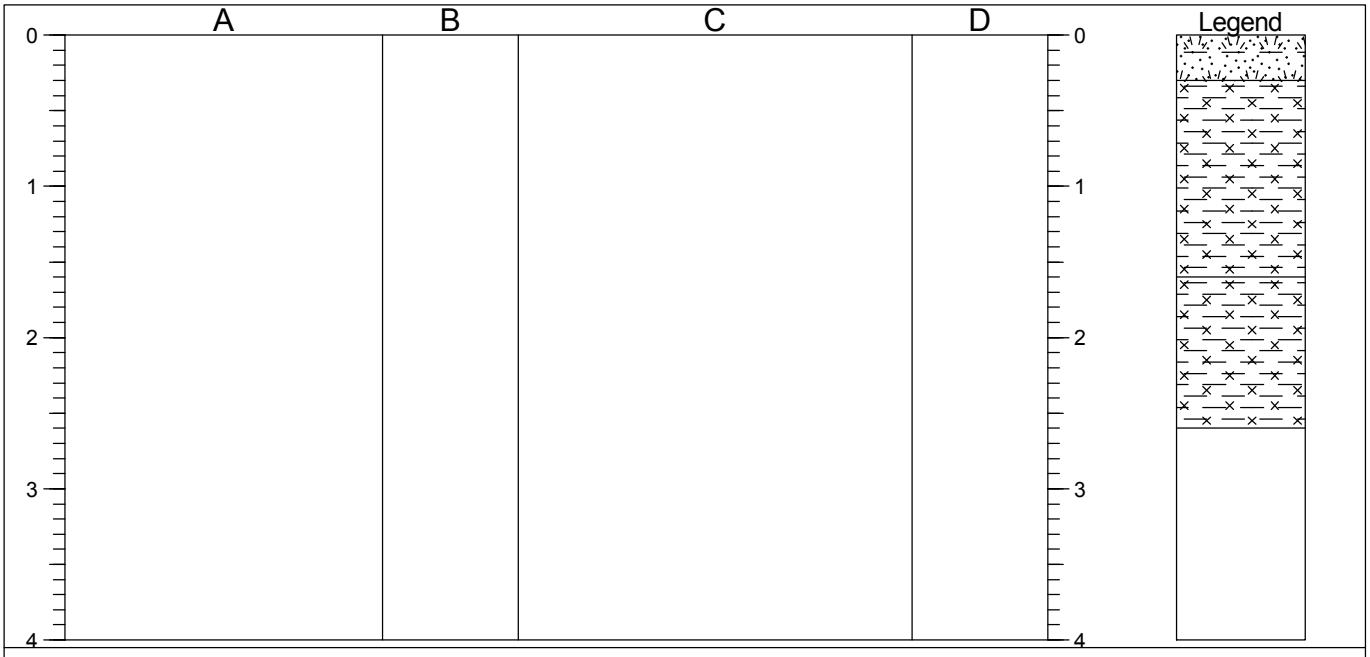
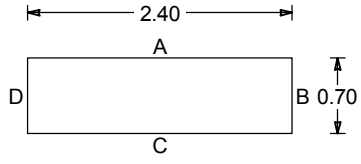
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP11
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-1.60		Firm brown and grey silty CLAY.	0.50	J	
			1.00	VANE	50
1.60-2.60		Stiff dark brown mottled yellowish brown silty CLAY with some very weak mudstone lithorelicts.	2.00	D	

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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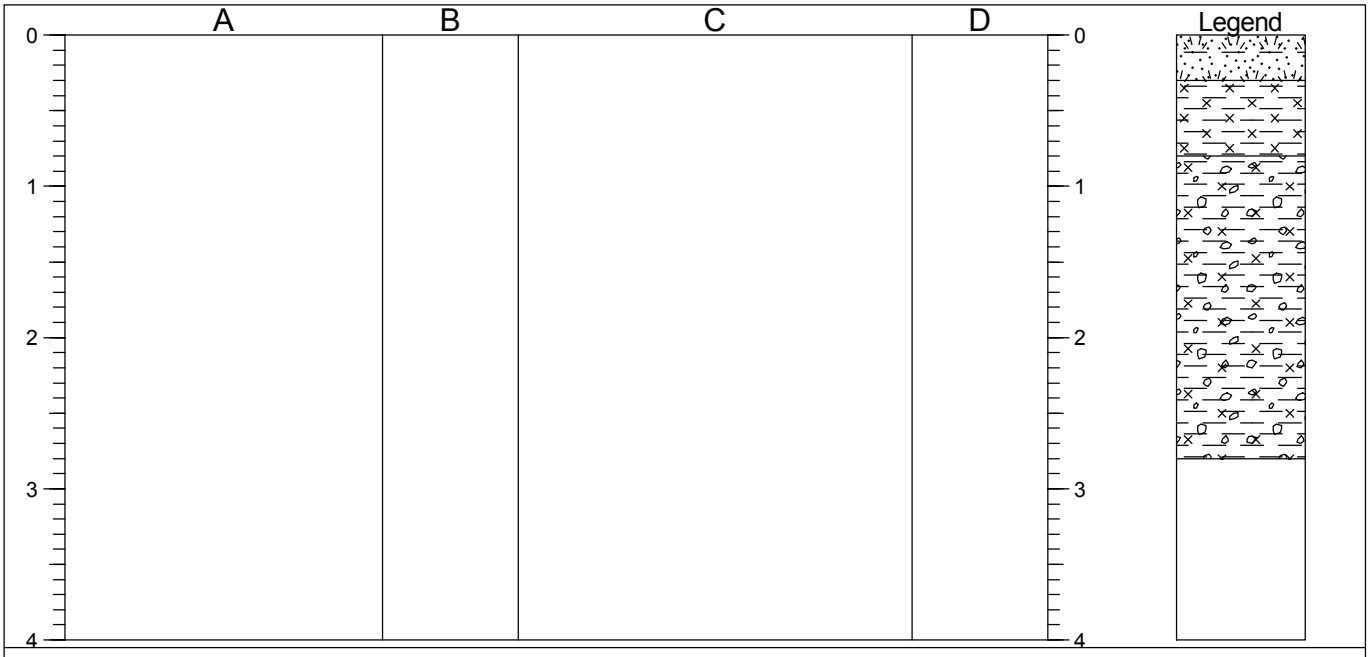
Exeter EX1 3SP
Telephone: 01392 678082

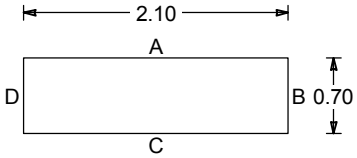
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP12**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-0.80		Firm brown silty CLAY.			
0.80-2.80		Firm to stiff brown and grey silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded chert. 1.40 ...stiff 2.20 ...with some very weak mudstone lithorelics	1.00	VANE	75

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered at trial pit base.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

AGS3 UK TP 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 21/5/13

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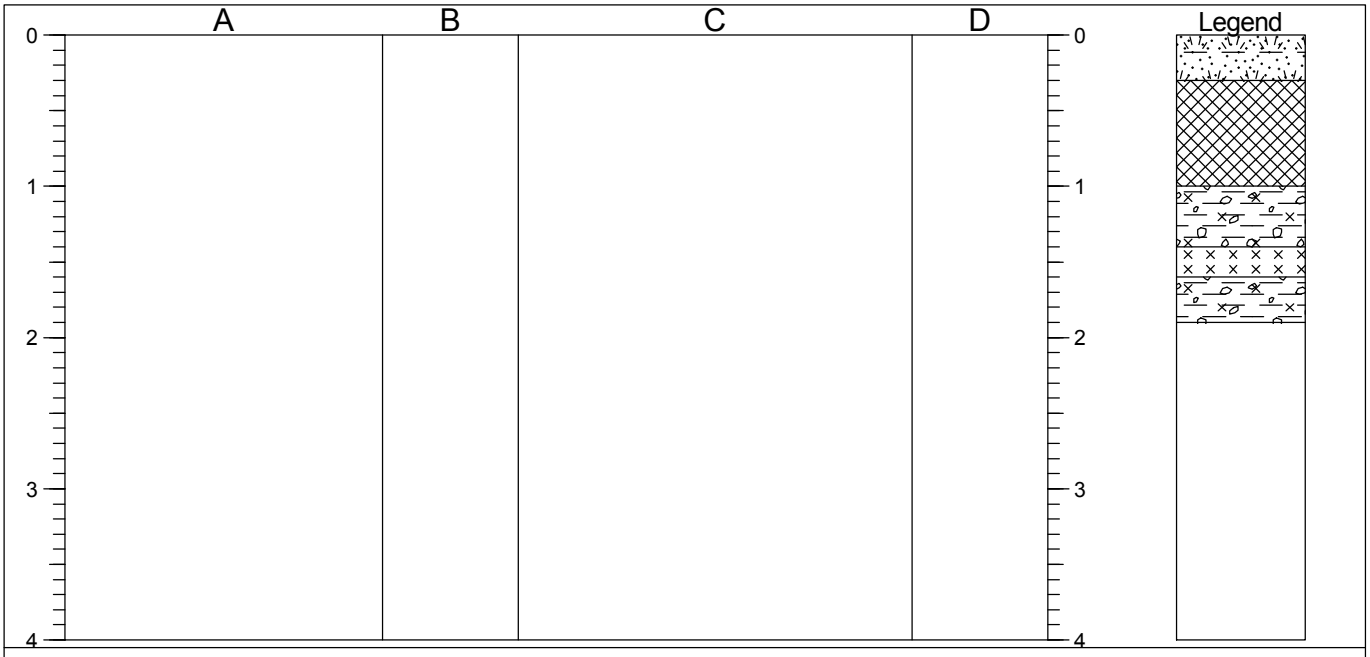
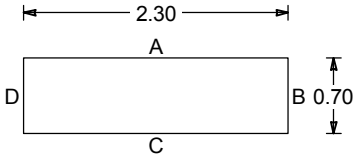
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP13**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Dark brown silty slightly gravelly clay with frequent roots and rootlets and occasional pieces of brick and pottery.			
0.30-1.00		MADE GROUND: Brown silty slightly gravelly clay with occasional rootlets and fragments of brick and black carbonaceous material.	0.60	J	
1.00-1.40		Firm to stiff brown silty slightly gravelly CLAY. Gravel is fine to coarse subangular of limestone/ mudstone.	1.00	VANE	95
1.40-1.60		Weak brown and grey slightly weathered SILTSTONE.			
1.60-1.90		Stiff brown and grey silty slightly gravelly CLAY. Gravel is fine to medium subangular of limestone/ mudstone.			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

1. Trial pit terminated at 1.90m due to refusal on suspected mudstone.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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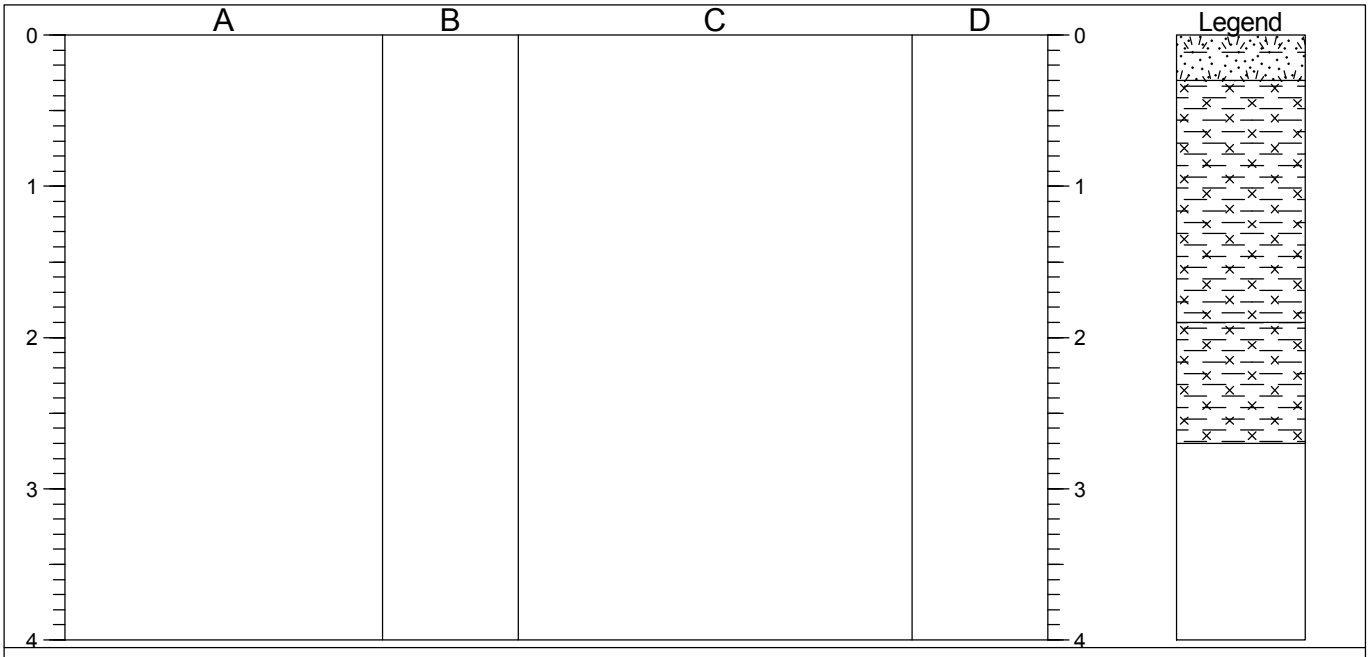
Exeter EX1 3SP
Telephone: 01392 678082

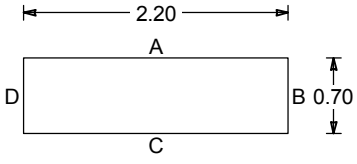
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP14
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	11-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets and occasional fragments of brick.			
0.30-1.90		Firm brown and grey silty CLAY.	1.00	VANE	70
1.90-2.70		Stiff grey mottled white silty CLAY with frequent shells.			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres
Scale 1:50

Client: C G Fry & Son Ltd

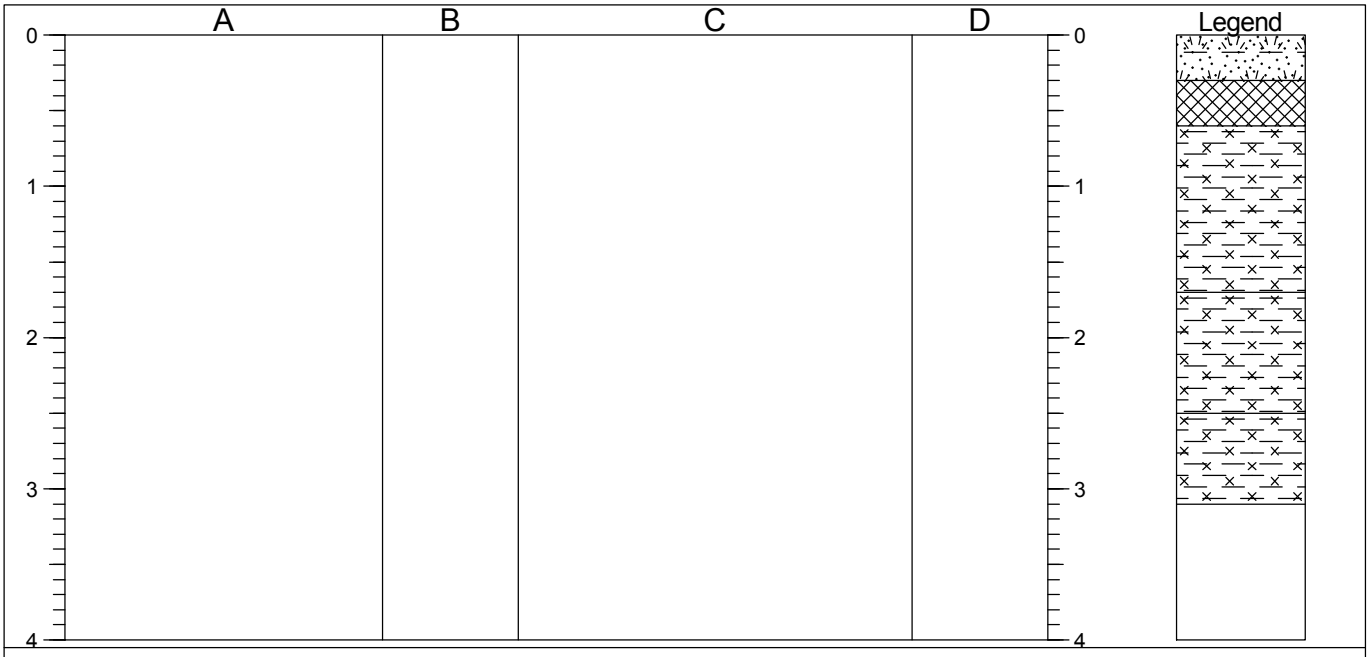
Logged By JF

AGS3 UK TP 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 21/5/13

Ruddlesden geotechnical ltd
65 Langaton Lane, Pinhoe
Exeter EX1 3SP
Telephone: 01392 678082

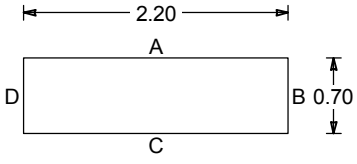
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP15
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-0.60		MADE GROUND: Brown silty clay with occasional pieces of brick.			
0.60-1.70		Firm brown and grey silty CLAY.	1.00	VANE	65
1.70-2.50		Stiff dark brown mottled yellowish brown silty CLAY with some very weak mudstone lithorelics.			
2.50-3.10		Very stiff grey silty CLAY with some very weak mudstone lithorelics.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered from 0.90m.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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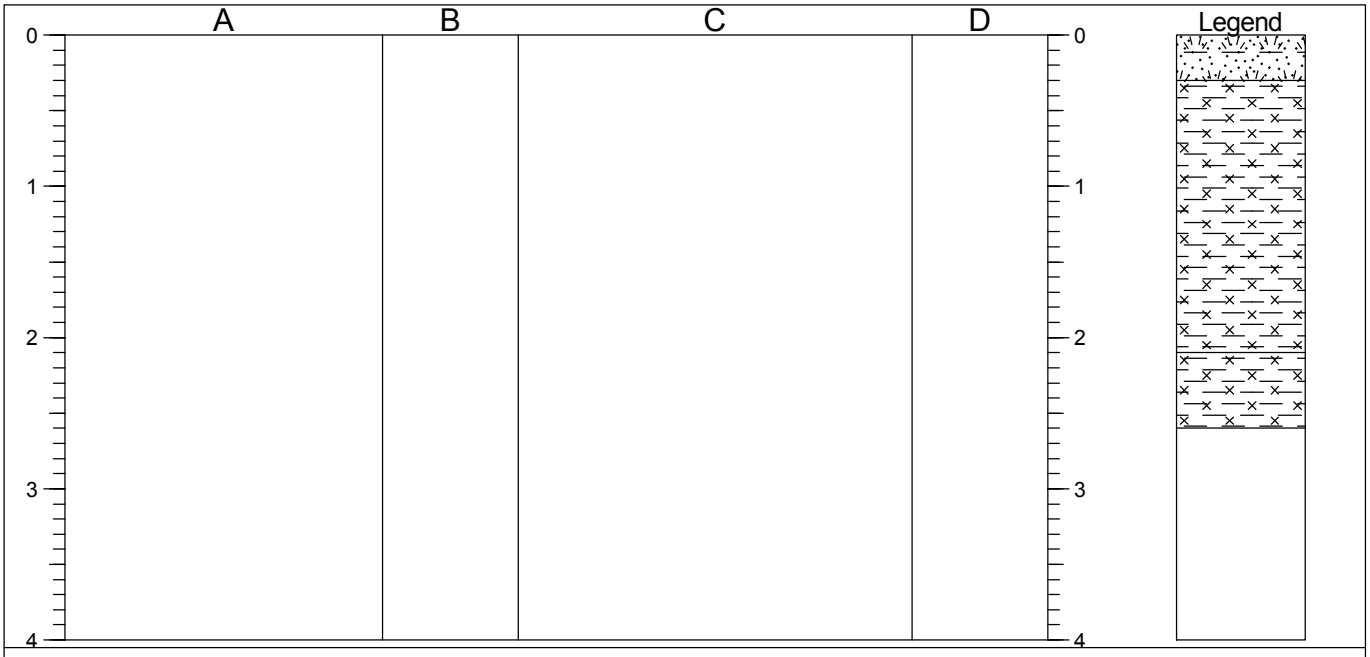
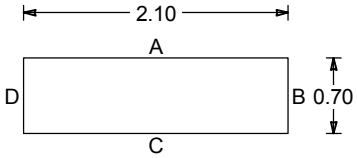
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP16
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets and occasional pieces of brick.			
0.30-2.10		Firm brown and grey silty CLAY with some cobbles of limestone.			
		1.00 ...stiff, no cobbles	1.00	VANE	90
		1.50 ...with some very weak mudstone lithorelics			
2.10-2.60		Stiff grey silty CLAY with some very weak mudstone lithorelics.			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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Exeter EX1 3SP
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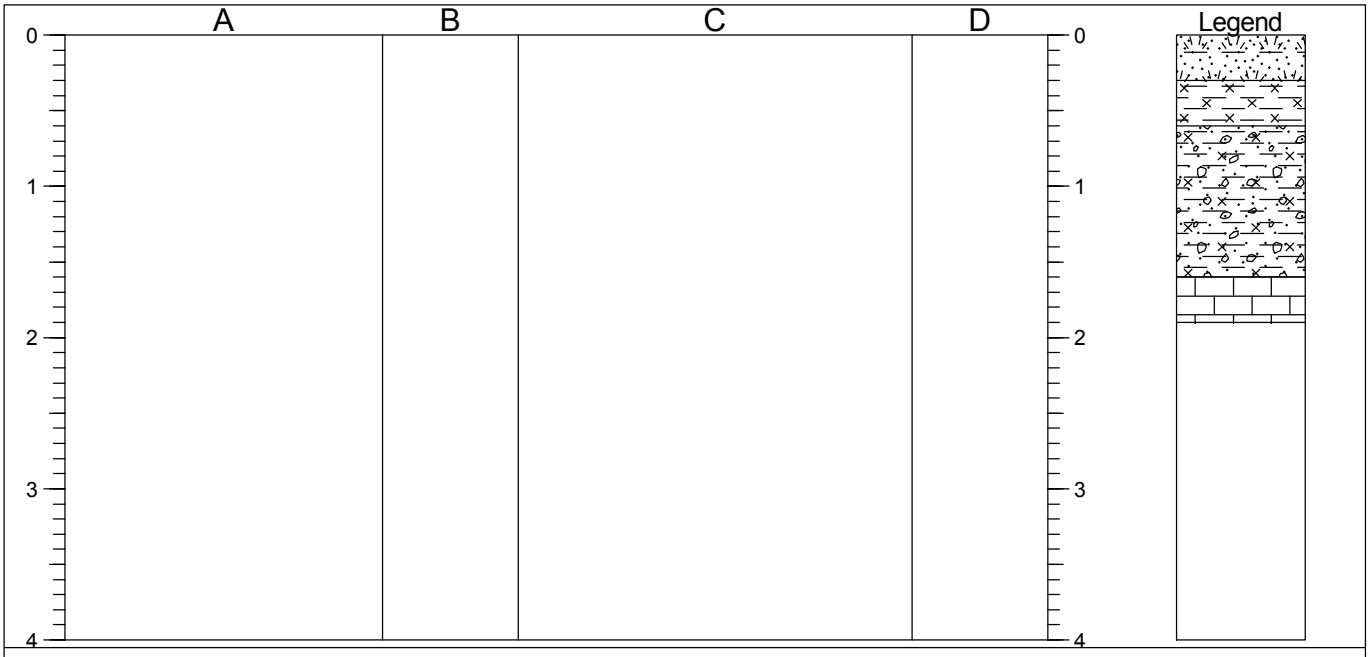
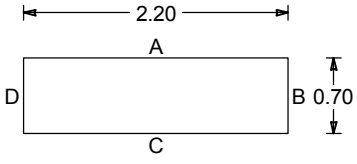
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP17
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Dark brown silty clay with frequent roots and rootlets and occasional fragments of brick and black carbonaceous material.			
0.30-0.60		Firm brown silty CLAY.			
0.60-1.60		Stiff brown silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular of weak mudstone.	1.00	VANE	70
1.60-1.90		Weak light purplish grey slightly weathered LIMESTONE.	1.50	D	

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

1. Trial pit completed at 1.90m due to refusal.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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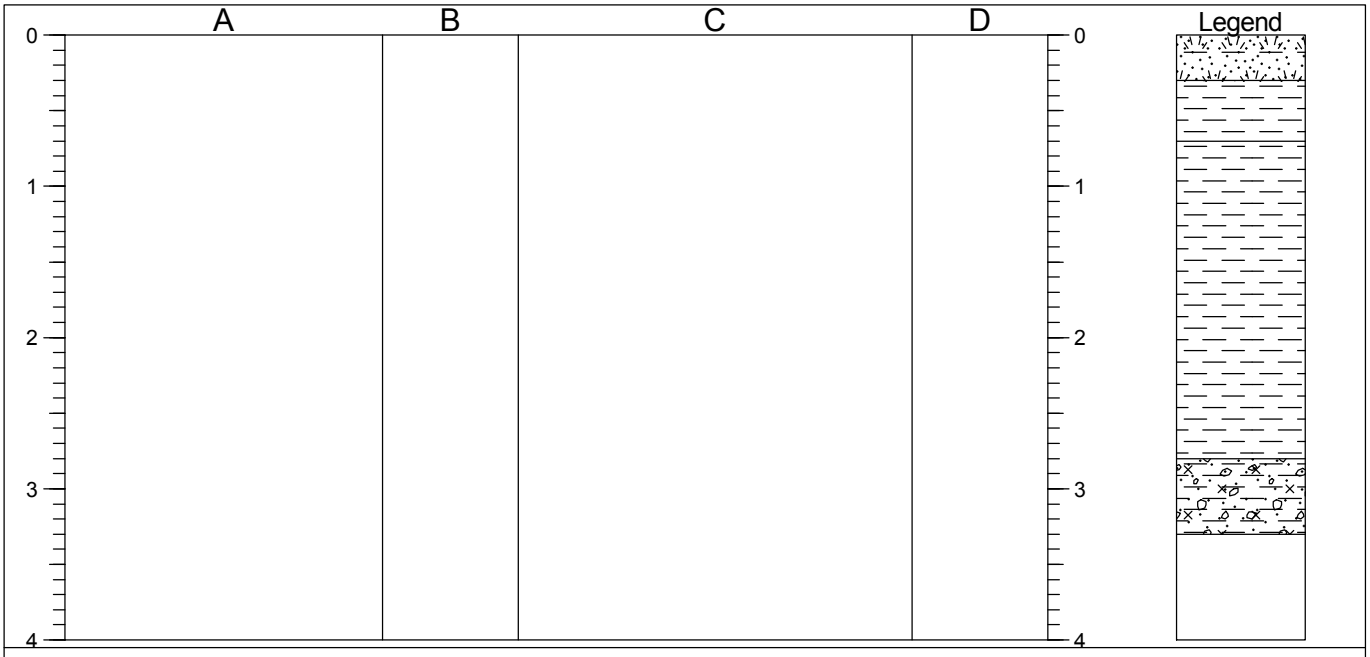
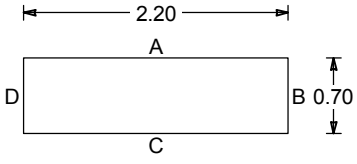
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP18
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	11-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-0.70		Firm brown silty slightly sandy CLAY.	0.25	J	
0.70-2.80		Firm brown and grey silty sandy CLAY.	1.00	VANE	80
			1.60	D	
		1.90 ...firm to stiff, slightly gravelly. Gravel is fine to coarse subangular of very weak to weak mudstone			
2.80-3.30		Very stiff grey silty sandy gravelly CLAY. Gravel is fine to coarse subangular of very weak to weak mudstone.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered from 2.20m.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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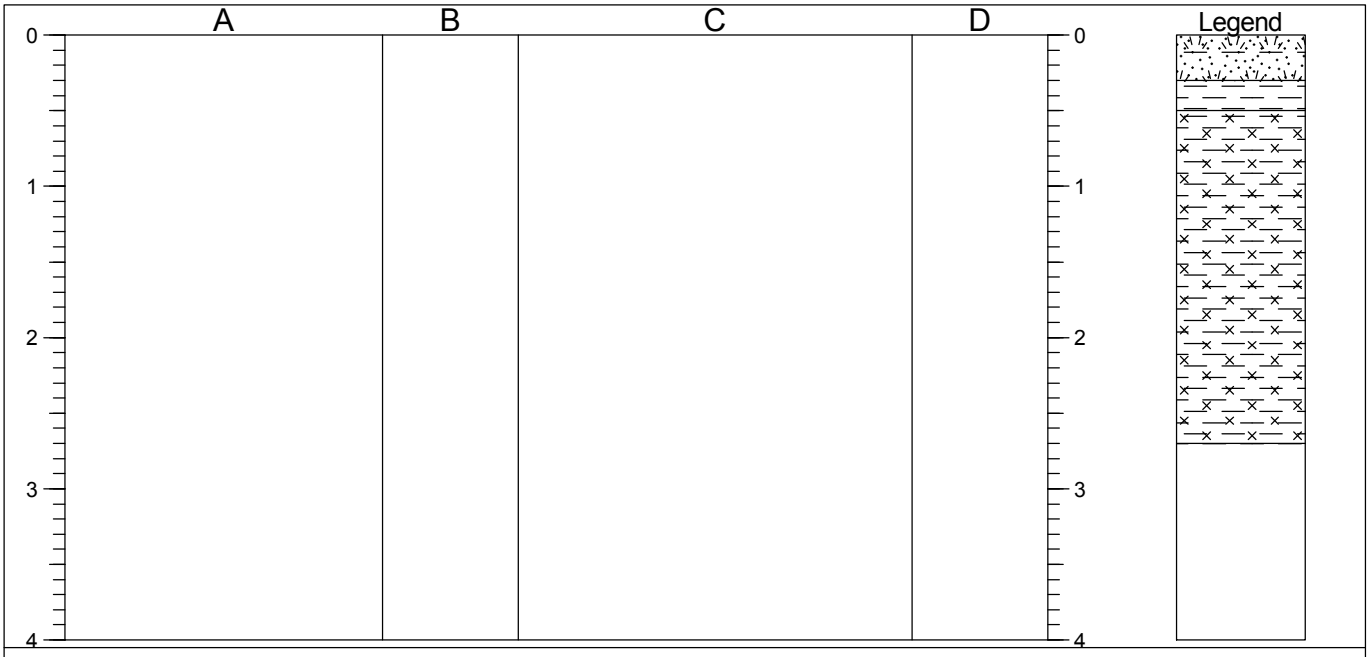
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP19
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	11-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1

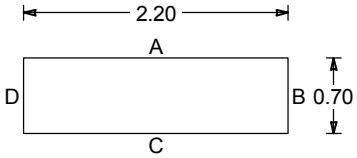


STRATA

SAMPLES & TESTS

Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-0.50		Firm brown silty slightly sandy CLAY with occasional rootlets.			
0.50-2.70		Firm brown and grey silty CLAY.			
		1.00 ...stiff with some very weak mudstone lithoreclics	1.00	VANE	90
		1.70 ...very stiff			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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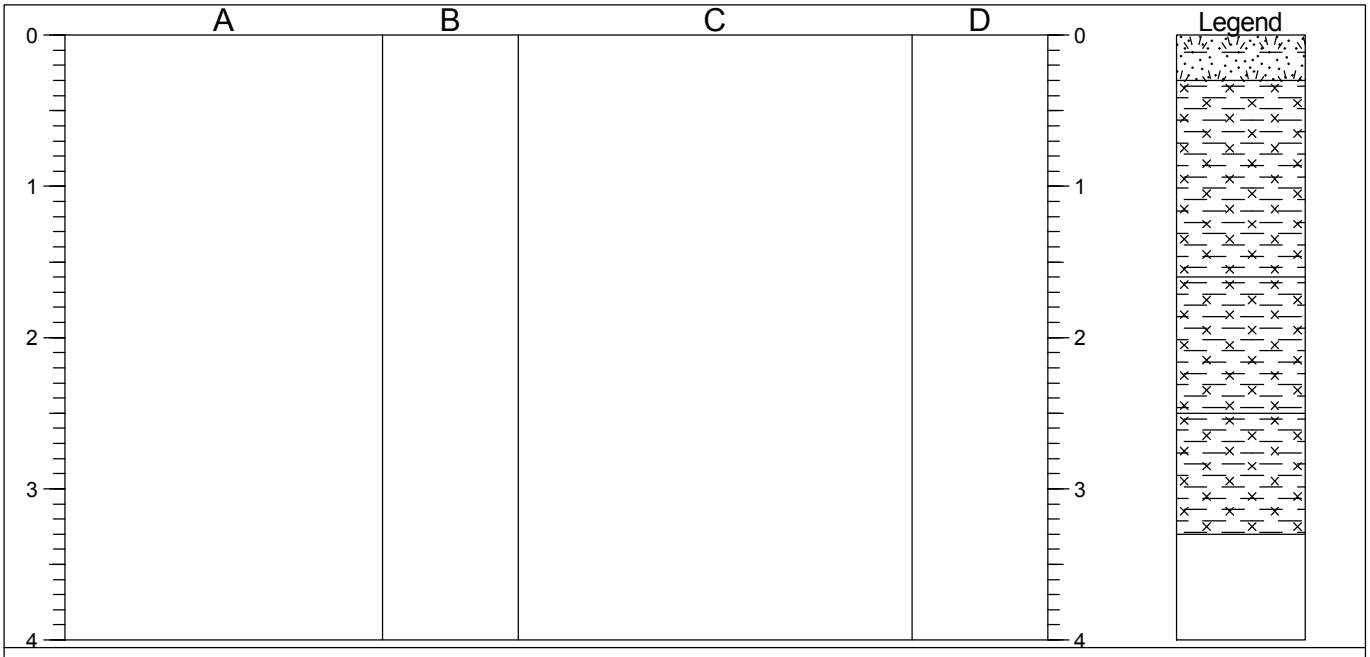
Telephone: 01392 678082

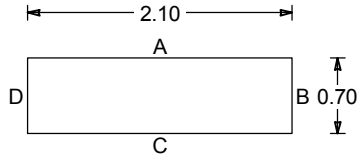
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP20**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets and occasional pieces of pottery and black carbonaceous material.			
0.30-1.60		Firm brown and grey silty CLAY with some cobbles of limestone. 0.70 ...no cobbles	0.25	J	
			1.00	VANE	65
1.60-2.50		Stiff brown and grey silty CLAY with some very weak mudstone lithorelics.			
2.50-3.30		Very stiff dark brown mottled yellowish brown silty CLAY with some very weak mudstone lithorelics.	2.50	D	

Shoring/Support: None.
Stability: Slight collapse from 2.80m.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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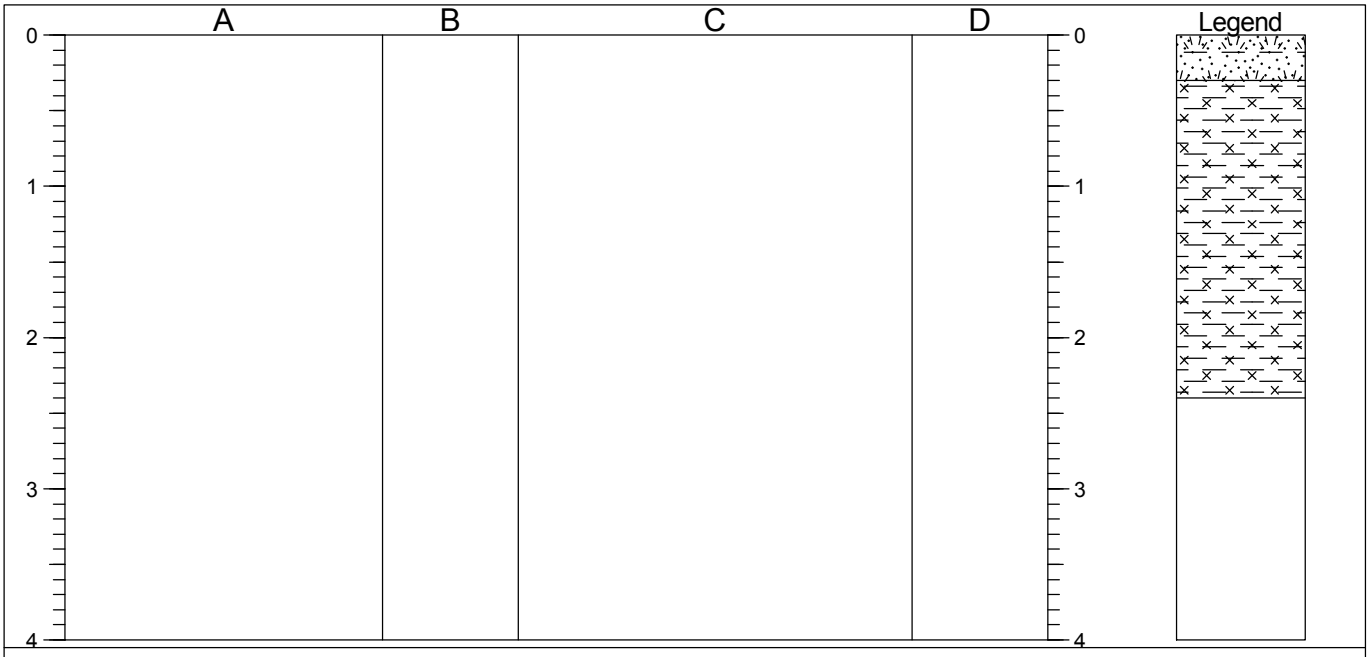
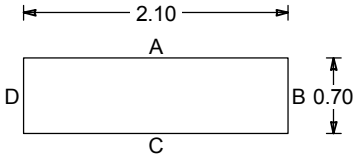
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP21
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-2.40		Firm brown and grey silty CLAY.			
		1.00 ...stiff 1.10 ...with some very weak mudstone lithorelics	1.00	VANE	80

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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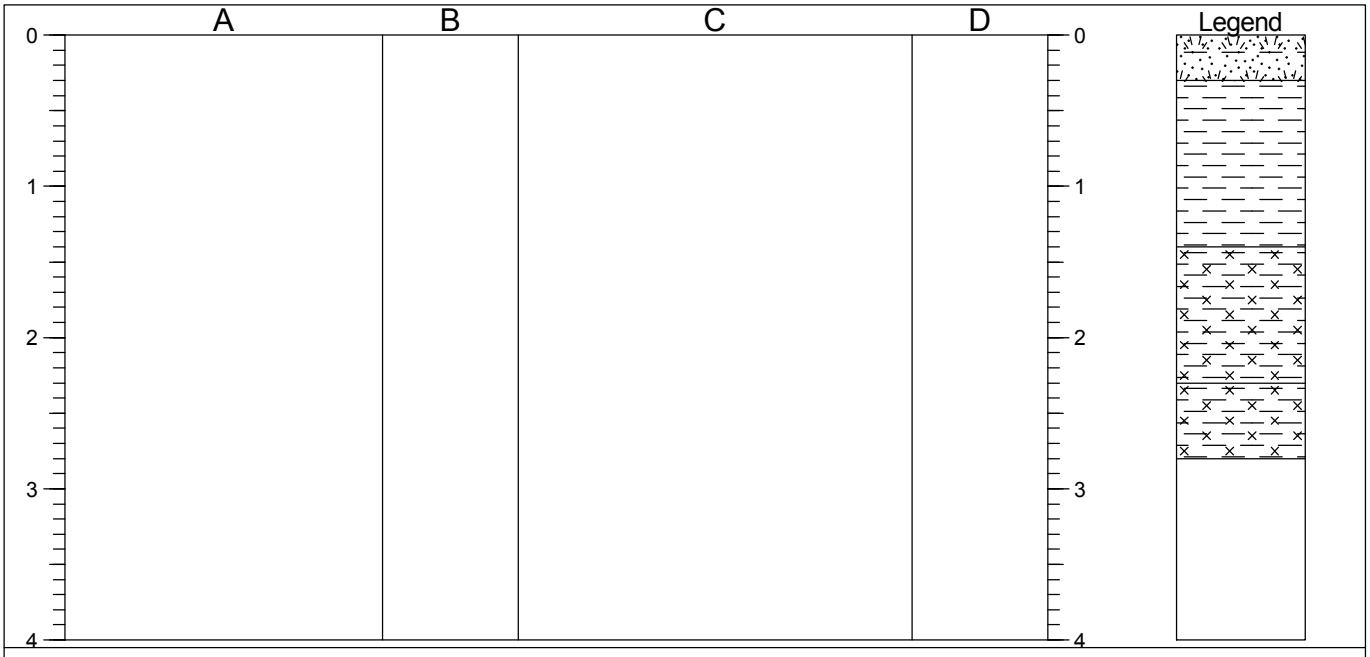
Telephone: 01392 678082

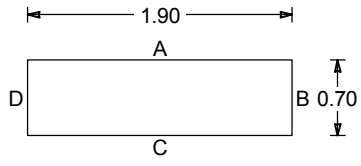
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP22
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-1.40		Firm brown and grey CLAY with some cobbles of limestone. 0.80 ...no cobbles	1.00	VANE	70
1.40-2.30		Stiff dark brown mottled yellowish brown silty CLAY with some very weak mudstone lithorelics.			
2.30-2.80		Stiff to very stiff grey silty CLAY.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered from 0.60m.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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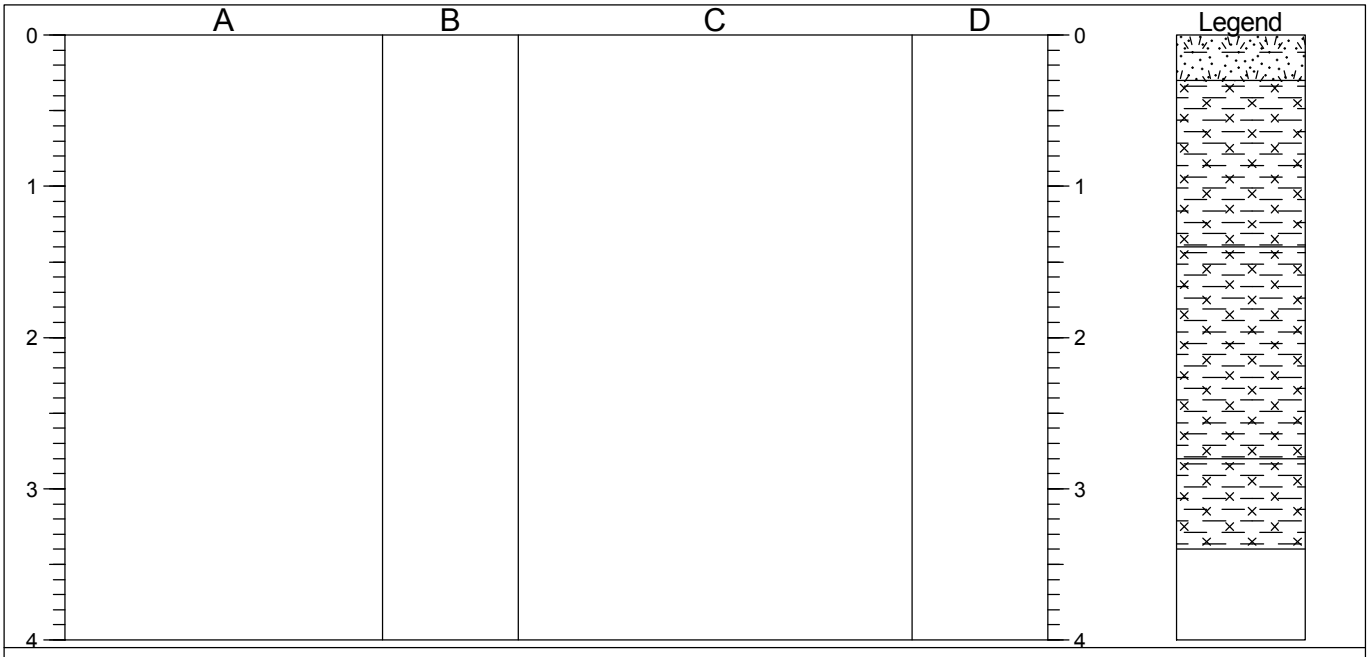
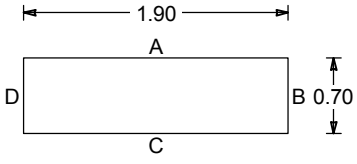
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP23
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-1.40		Firm brown and grey silty CLAY.	0.30	J	
		0.80 - 1.00 ...some boulders of limestone			
		1.00 ...stiff	1.00	VANE	85
1.40-2.80		Stiff dark brown mottled yellowish brown silty CLAY with some very weak mudstone lithorelics.	1.50	D	
2.80-3.40		Stiff to very stiff grey silty CLAY.			
		3.00 ...very stiff to hard			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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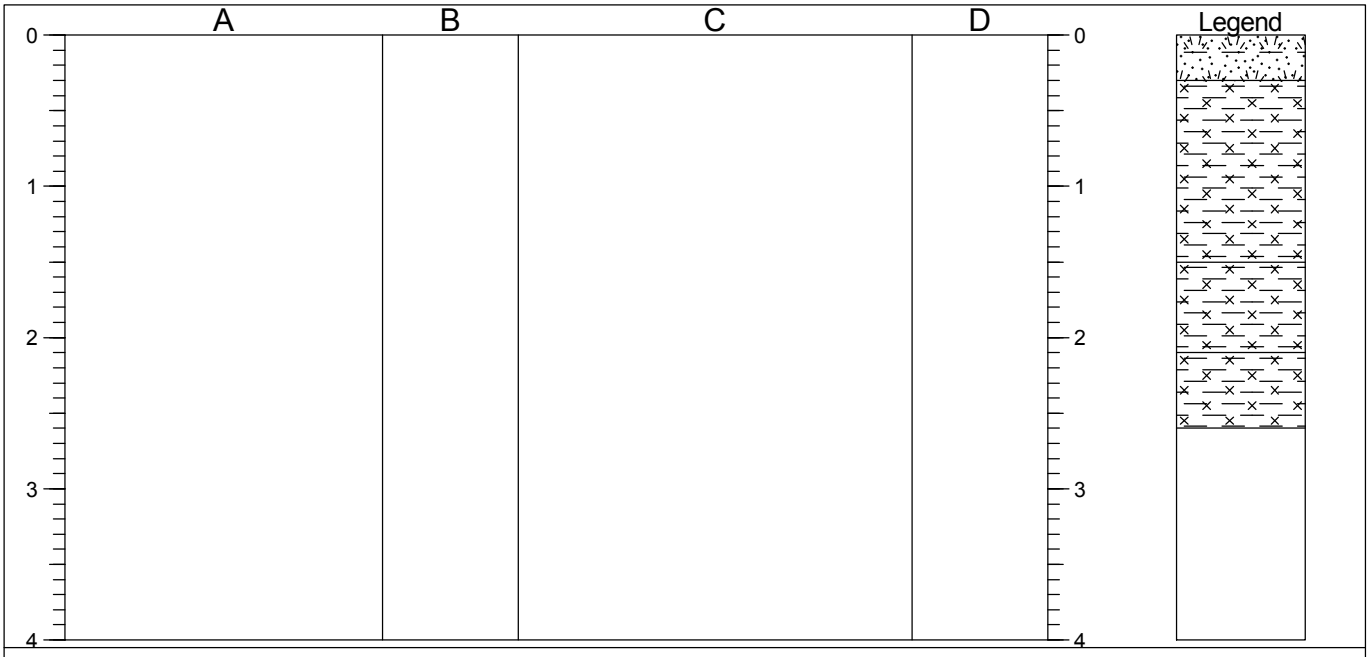
Exeter EX1 3SP
Telephone: 01392 678082

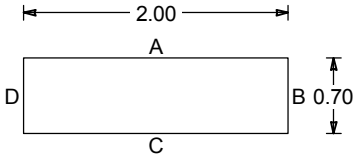
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP24
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-1.50		Firm brown and grey silty CLAY with some cobbles of limestone.			
		1.00 ...stiff, no cobbles	1.00	VANE	90
1.50-2.10		Stiff dark brown mottled yellowish brown silty CLAY with some very weak mudstone lithorelics.			
2.10-2.60		Stiff grey silty CLAY.			
		2.30 ...very stiff with some very weak mudstone lithorelics			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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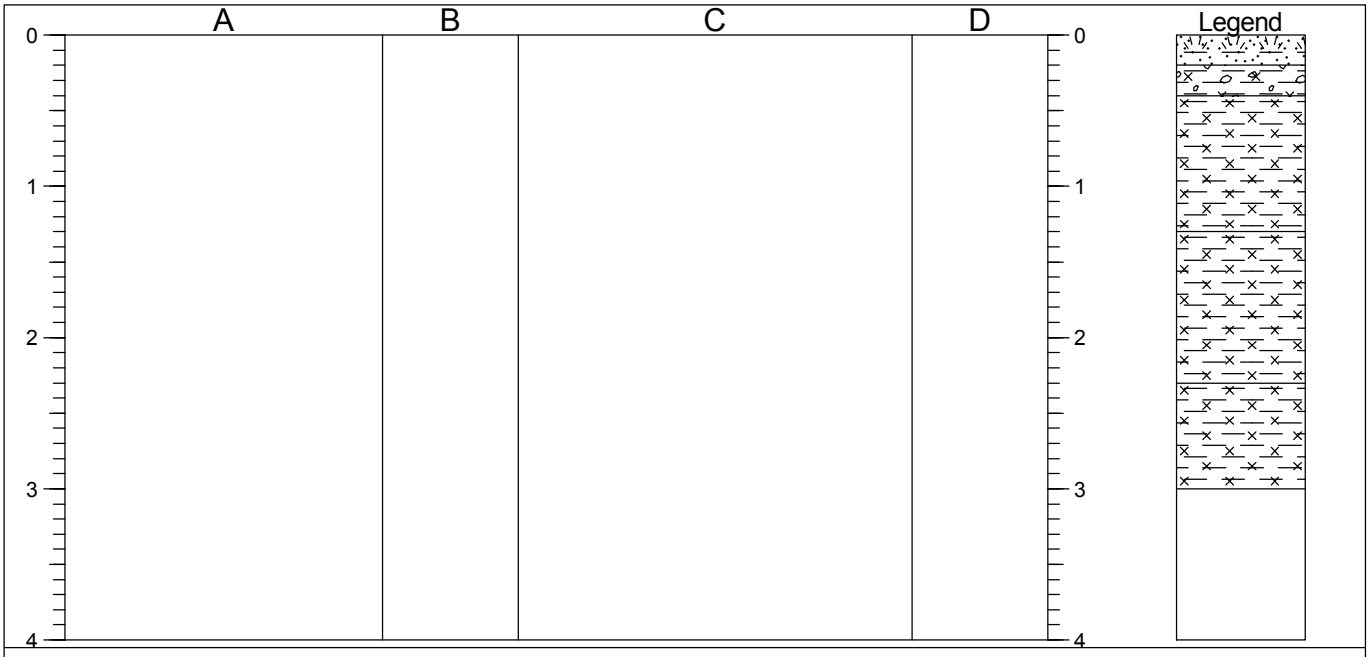
Exeter EX1 3SP
Telephone: 01392 678082

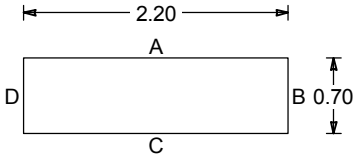
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP25
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	09-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.20		TOPSOIL: Brown silty clay with frequent rootlets.			
0.20-0.40		Firm brown silty slightly gravelly CLAY. Gravel is fine to coarse subangular of chert.	0.15	J	
0.40-1.30		Firm brown and grey silty CLAY.			
		1.20 ...stiff	1.00	D	
			1.00	VANE	75
1.30-2.30		Stiff dark brown mottled yellowish brown silty CLAY with some very weak mudstone lithorelics.			
2.30-3.00		Stiff to very stiff grey silty CLAY with some very weak mudstone lithorelics.			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

1. Trial pit completed at 3.00m due to refusal on suspected mudstone/ limestone boulder.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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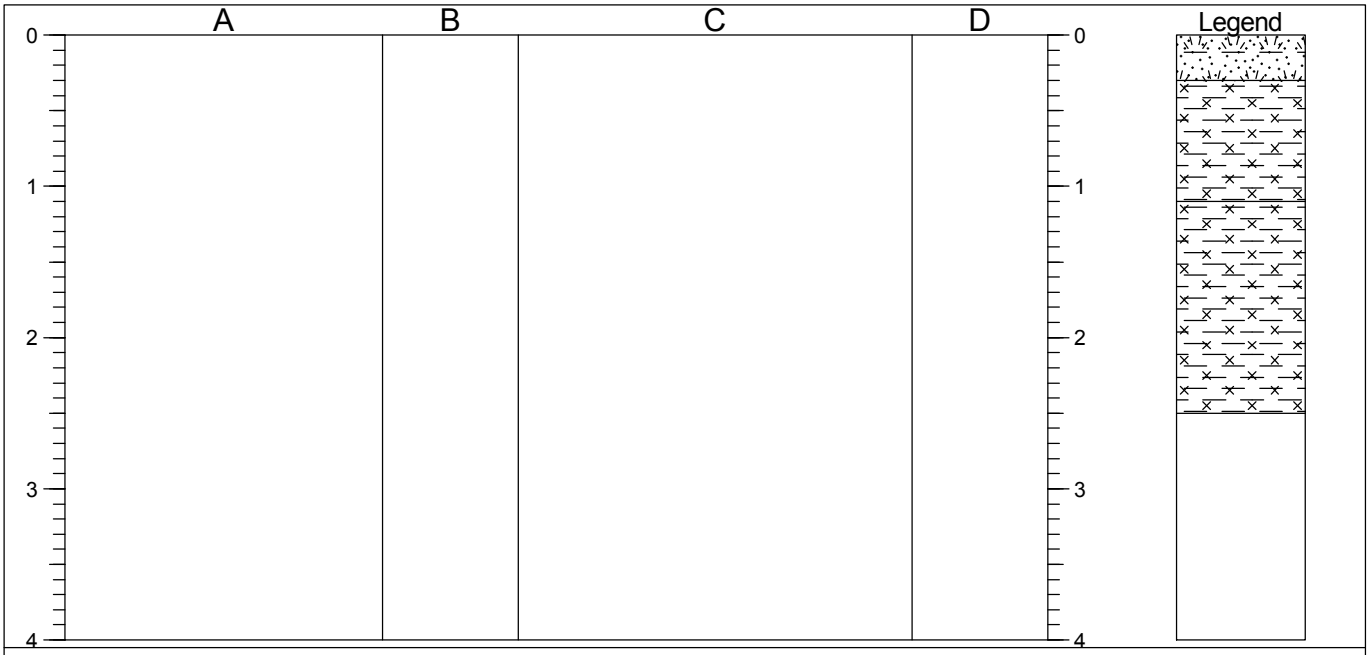
Telephone: 01392 678082

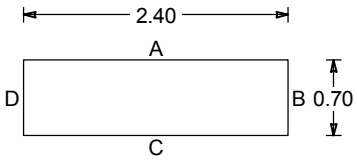
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP26**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-1.10		Firm brown silty CLAY.			
1.10-2.50		Firm to stiff brown and grey silty CLAY. 1.40 ...with some very weak mudstone lithorelicts	1.00	VANE	70

Shoring/Support: None.
Stability: Stable.
Groundwater: Slight seepage encountered at trial pit base.



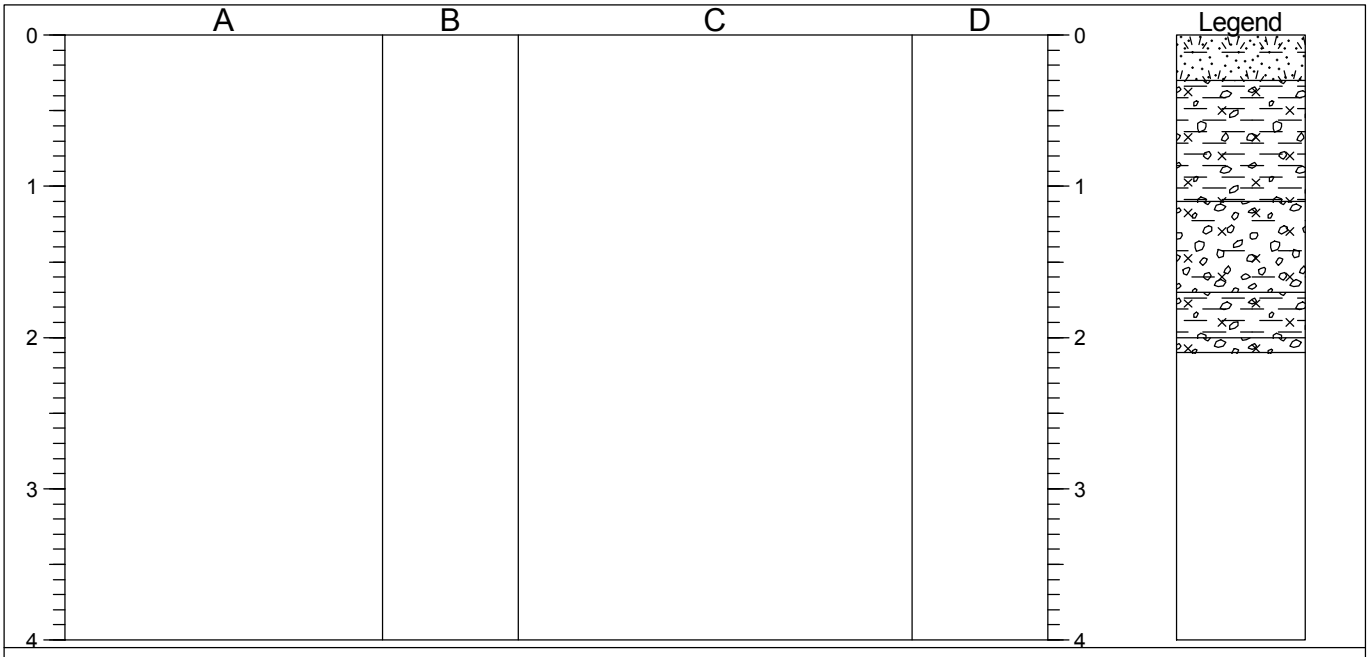
GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

Ruddlesden geotechnical ltd
65 Langaton Lane, Pinhoe
Exeter EX1 3SP
Telephone: 01392 678082

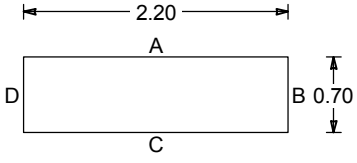
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP27**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-1.10		Firm brown silty very gravelly CLAY with occasional rootlets and black carbonaceous material. Gravel is fine to coarse subangular to subrounded of limestone. 0.50 ...with occasional cobbles and boulders of limestone	0.40	J	
1.10-1.70		(Dense) brown and grey very clayey silty GRAVEL with some cobbles and boulders of limestone. Gravel is fine to coarse subangular to subrounded of mudstone and limestone.	1.00 1.00	D VANE	too gravelly
1.70-2.00		Very stiff grey silty gravelly CLAY. Gravel is fine to coarse subangular to subrounded of mudstone and limestone.			
2.00-2.10		(Dense to very dense) brown and grey clayey silty GRAVEL with some cobbles of mudstone and limestone. Gravel is fine to coarse subangular to subrounded of mudstone and limestone.			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

1. Density of granular deposits estimated from visual assessment only.
2. Trial pit completed at 2.10m due to refusal.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

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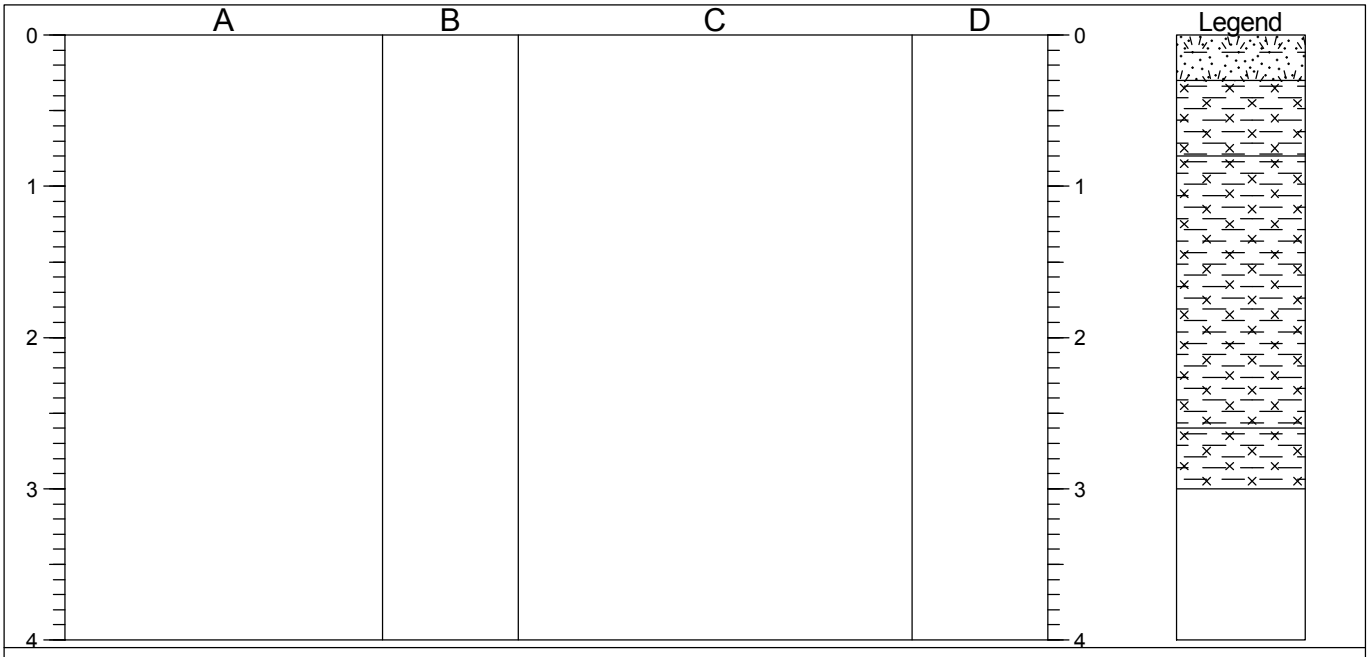
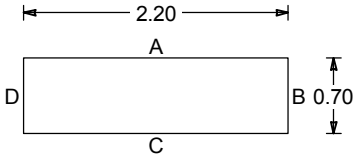
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				TP28
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.			
0.30-0.80		Firm brown silty CLAY with occasional rootlets.			
0.80-2.60		Firm brown and grey silty CLAY. 1.00 ...stiff	1.00	VANE	105
		1.50 ...with some very weak mudstone lithorelics			
2.60-3.00		Very stiff grey silty CLAY with some very weak mudstone lithorelics			

Shoring/Support: None.
Stability: Stable.
Groundwater: None encountered.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

AGS3 UK TP 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 21/5/13

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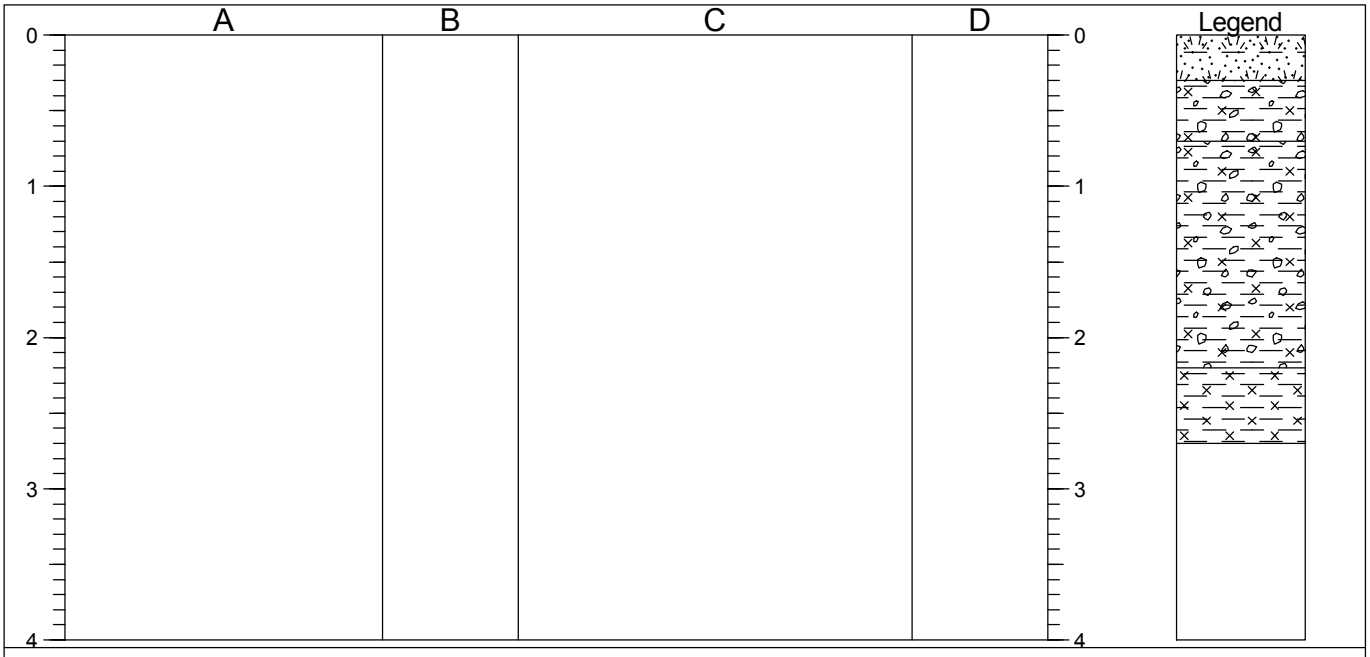
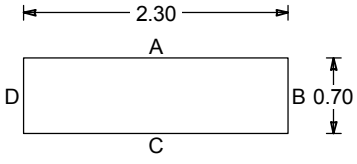
TRIAL PIT LOG

Project				TRIAL PIT No
Wey Valley, Dorchester Road, Weymouth, Dorset				**TP29**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
	JCB 3CX			1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.30		TOPSOIL: Brown silty clay with frequent rootlets.	0.20	J	
0.30-0.70		Firm brown silty very gravelly CLAY with some cobbles of chert. Gravel is fine to coarse subangular to subrounded of chert.			
0.70-2.20		Firm to stiff brown and grey mottled reddish brown silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded of chert.	1.00	VANE	80
			1.50	D	
		1.70 ...with some very weak mudstone lithorelics			
2.20-2.70		Stiff to very stiff grey silty CLAY with some very weak mudstone lithorelics.			

Shoring/Support: None.
Stability: Stable.
Groundwater: Moderate seepage encountered from 0.60m.



GENERAL REMARKS

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JF

AGS3 UK TP 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 21/5/13

WINDOWLESS SAMPLE BOREHOLE LOGS

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WINDOWLESS SAMPLE BOREHOLE LOG

Project				BOREHOLE No
Wey Valley, Dorchester Road, Weymouth, Dorset				WS1
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
ADS	Competitor Dart			1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.12	TOPSOIL: Light brown silty clay with occasional rootlets.		
						(0.48)	Stiff light grey mottled orange brown silty CLAY.		
						0.60			
						(0.40)	NO RECOVERY.		
						1.00			
						1.10	Stiff thinly laminated dark blue grey silty CLAY with occasional decomposed rootlets and hard partings.		
						(1.35)	Stiff light bluish grey silty CLAY with occasional hard partings and shell fragments.		
						2.45			
						2.50	(Very dense) light bluish grey sandy slightly silty/ clayey GRAVEL. Gravel is fine to coarse angular sandstone. (Sandstone chippings).		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling		
From	To	Hours

GENERAL REMARKS

1. No groundwater encountered.
2. Borehole terminated at 2.50m due to refusal on sandstone.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JW

WINDOWLESS SAMPLE BH LOG 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 20/5/13

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WINDOWLESS SAMPLE BOREHOLE LOG

Project				BOREHOLE No
Wey Valley, Dorchester Road, Weymouth, Dorset				WS2
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
ADS	Competitor Dart			1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.25	J					(0.40) 0.40	TOPSOIL/ MADE GROUND: Dark brown silty gravelly clay with occasional rootlets. Gravel is fine to coarse angular to well-rounded flint, mortar, brick and coal.		
						(0.60) 1.00	Stiff light yellow brown silty slightly gravelly CLAY with occasional cobbles. Gravel/ cobbles are fine to coarse subrounded to well-rounded limestone.		
						(0.75) 1.75	(Very dense) light grey GRAVEL/ COBBLES with a light yellow brown silty CLAY matrix. Gravel/ cobbles are coarse angular to subanglar limestone.		
						2.00	Stiff thinly laminated light grey mottled orange brown silty slightly sandy CLAY.		
						2.20	(Very dense) light grey GRAVEL/ COBBLES with a light yellow brown silty slightly sandy CLAY matrix. Gravel/ cobbles are coarse angular to subangular limestone.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling		
From	To	Hours

GENERAL REMARKS

1. No groundwater encountered.
2. Borehole terminated at 2.20m due to refusal on limestone layer/ bed (assumed).

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JW

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WINDOWLESS SAMPLE BOREHOLE LOG

Project				BOREHOLE No
Wey Valley, Dorchester Road, Weymouth, Dorset				WS3
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
ADS	Competitor Dart			1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.15	TOPSOIL: Light brown silty clay with occasional rootlets.		
							Stiff light blue grey mottled orange brown silty CLAY.		
						(2.45)			
							1.52 ...very silty		
							2.00 ...frequent shell fragments		
						2.60			
						(0.40)	Stiff dark blue grey silty CLAY with frequent shell fragments.		
						3.00			

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling		
From	To	Hours

GENERAL REMARKS

1. No groundwater encountered.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JW

WINDOWLESS SAMPLE BH LOG 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 20/5/13

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WINDOWLESS SAMPLE BOREHOLE LOG

Project				BOREHOLE No
Wey Valley, Dorchester Road, Weymouth, Dorset				WS4
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
ADS	Competitor Dart			1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.15	TOPSOIL: Light brown/ yellow brown very silty clay with occasional rootlets.		
							Stiff light yellow brown silty CLAY with occasional cobbles of limestone.		
						(2.05)	1.20 ...light brownish grey silty very sandy CLAY		
						2.20			
						2.50	Stiff light brownish grey silty very sandy CLAY.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling		
From	To	Hours

GENERAL REMARKS

1. No groundwater encountered.
2. Borehole terminated at 2.50m due to refusal.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JW

WINDOWLESS SAMPLE BH LOG 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 20/5/13

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WINDOWLESS SAMPLE BOREHOLE LOG

Project				BOREHOLE No
Wey Valley, Dorchester Road, Weymouth, Dorset				WS5
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
ADS	Competitor Dart			1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						(0.50) 0.50	NO RECOVERY.		
						(0.50) 1.00	Stiff light grey brown silty CLAY with a cobble of limestone (recovered as gravel).		
						1.25	Firm to stiff light blue grey mottled orange silty CLAY.		
						(1.75) 3.00	Stiff thinly laminated light purple brown mottled yellow/ light blue grey silty CLAY with occasional hard partings and shell fragments.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling		
From	To	Hours

GENERAL REMARKS

1. Groundwater encountered near base.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JW

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WINDOWLESS SAMPLE BOREHOLE LOG

Project				BOREHOLE No
Wey Valley, Dorchester Road, Weymouth, Dorset				WS6
Job No	Date	Ground Level (m)	Co-Ordinates ()	
13107	10-04-13			
Contractor	Method/ Plant	Energy Ratio		Sheet
ADS	Competitor Dart			1 of 1

SAMPLES & TESTS			Water	STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION			
						0.10	TOPSOIL: Light brown silty clay with occasional rootlets.			
						(0.40) 0.50	Firm to stiff light grey brown mottled orange brown silty slightly gravelly CLAY. Gravel is coarse angular to subrounded flint (River Terrace Deposits).			
						(1.10) 1.60	Stiff light blue grey mottled orange brown silty CLAY with occasional rootlets.			
						(0.80) 2.40	Stiff thinly lamianted light purple brown mottled yellow brown silty CLAY with occasional shell fragments, hard partings and decomposed rootlets.			
						(0.60) 3.00	Stiff thinly laminated dark grey silty CLAY with occasional very stiff partings.			

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling		
From	To	Hours

GENERAL REMARKS

1. No groundwater encountered.

All dimensions in metres Scale 1:50	Client: C G Fry & Son Ltd	Logged By JW

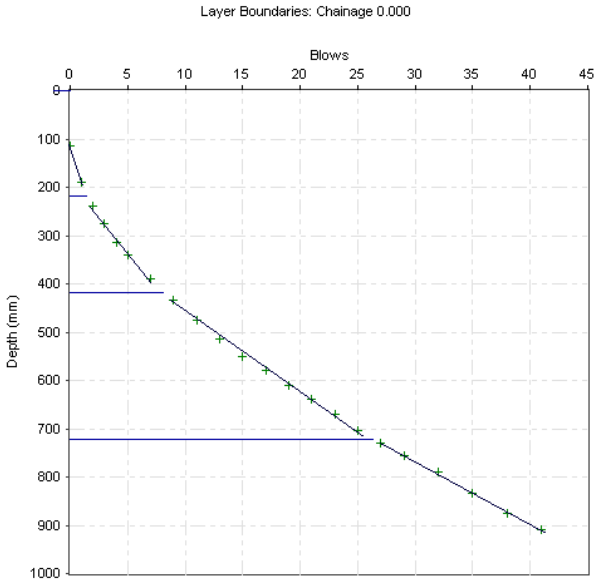
WINDOWLESS SAMPLE BH LOG 13107 - WEY VALLEY, DORCHESTER ROAD, WEYMOUTH.GPJ AGS 3_1.GDT 20/5/13

IN-SITU CBR (TRL DCP METHOD) TEST RESULTS

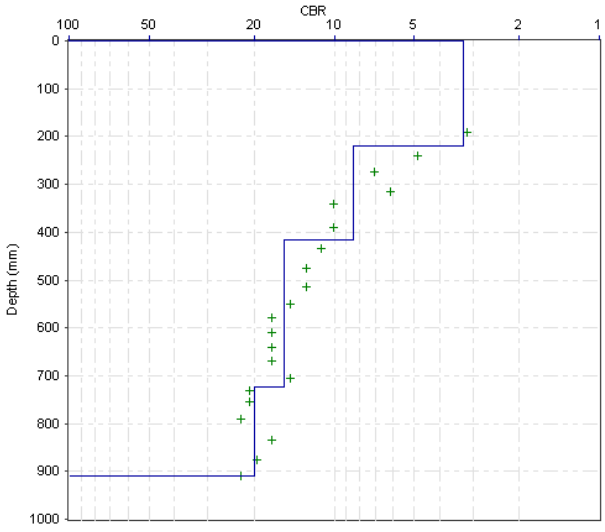
DCP Layer Strength Analysis Report

Project Name: DCP1

Chainage (km):	0.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Carriageway	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Moderate
Test Date:	09/04/2013	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)	Position	Strength Coefficient	SN	SNC	SNP
1	72.29	3	219	219	Subgrade	--	--	--	--
2	29.30	9	198	417	Subgrade	--	--	--	--
3	16.67	15	306	723	Subgrade	--	--	--	--
4	13.11	20	187	910	Subgrade	--	--	--	--

Pavement Strength

	Layer Contribution		
Layer	**SN**	**SNC**	**SNP**
Surface	--	--	--
Base	--	--	--
Sub-Base	--	--	--
Subgrade	--	0.15	0.15
Pavement Strength	--	0.15	0.15

CBR Relationship:

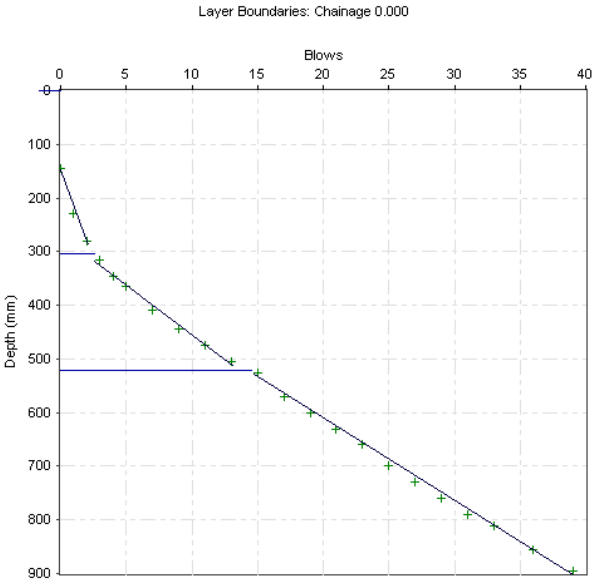
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

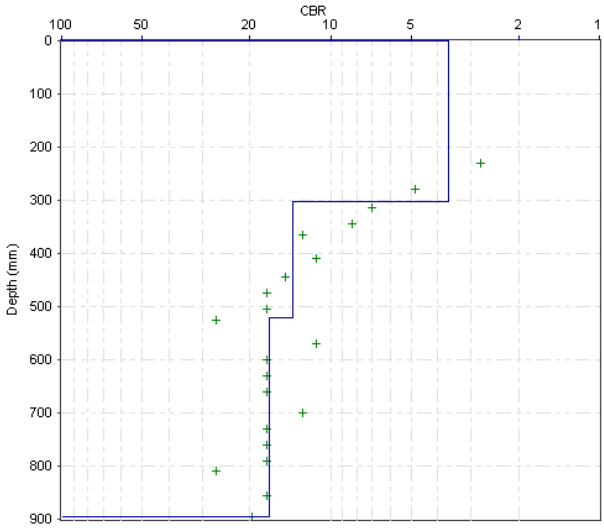
DCP Layer Strength Analysis Report

Project Name: DCP3

Chainage (km):	0.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Carriageway	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Moderate
Test Date:	09/04/2013	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)	Position	Strength Coefficient	SN	SNC	SNP
1	65.63	4	303	303	Subgrade	--	--	--	--
2	18.45	14	218	521	Subgrade	--	--	--	--
3	15.30	17	374	895	Subgrade	--	--	--	--

Pavement Strength

	Layer Contribution		
Layer	**SN**	**SNC**	**SNP**
Surface	--	--	--
Base	--	--	--
Sub-Base	--	--	--
Subgrade	--	0.27	0.27
Pavement Strength	--	0.27	0.27

CBR Relationship:

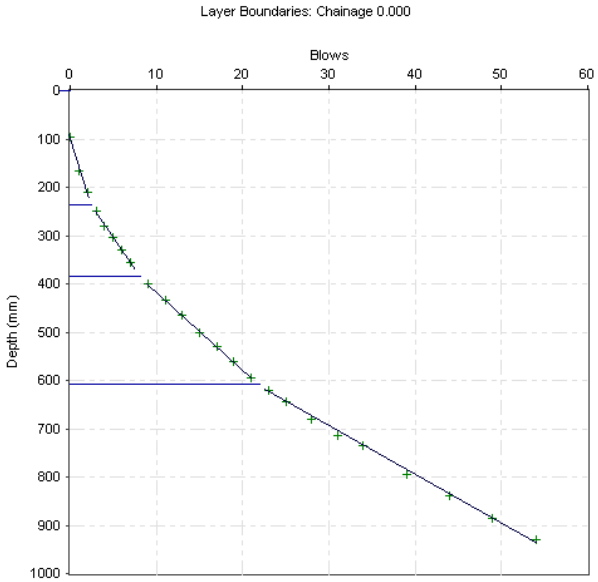
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

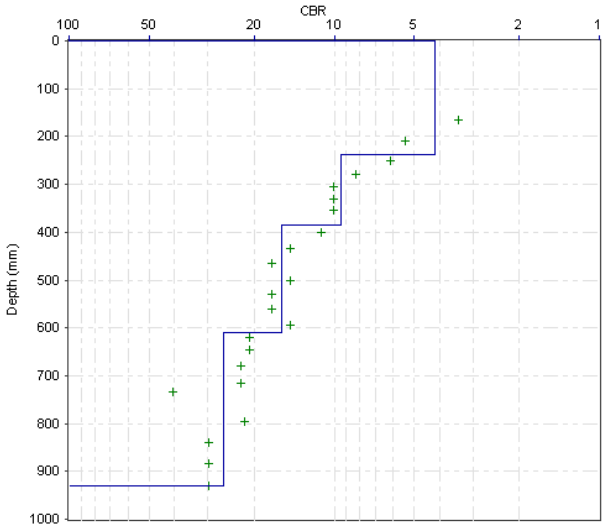
DCP Layer Strength Analysis Report

Project Name: DCP4

Chainage (km):	0.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Carriageway	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Moderate
Test Date:	09/04/2013	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)	Position	Strength Coefficient	SN	SNC	SNP
1	57.61	4	237	237	Subgrade	--	--	--	--
2	26.55	9	148	385	Subgrade	--	--	--	--
3	16.39	16	224	609	Subgrade	--	--	--	--
4	10.13	26	321	930	Subgrade	--	--	--	--

Pavement Strength

	Layer Contribution		
Layer	**SN**	**SNC**	**SNP**
Surface	--	--	--
Base	--	--	--
Sub-Base	--	--	--
Subgrade	--	0.42	0.42
Pavement Strength	--	0.42	0.42

CBR Relationship:

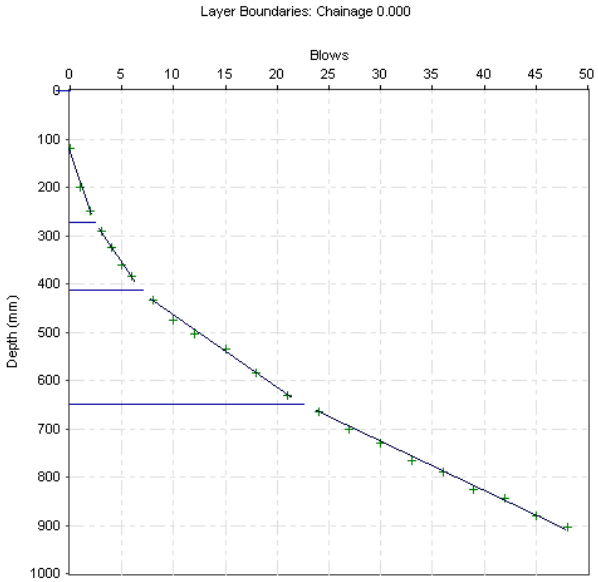
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

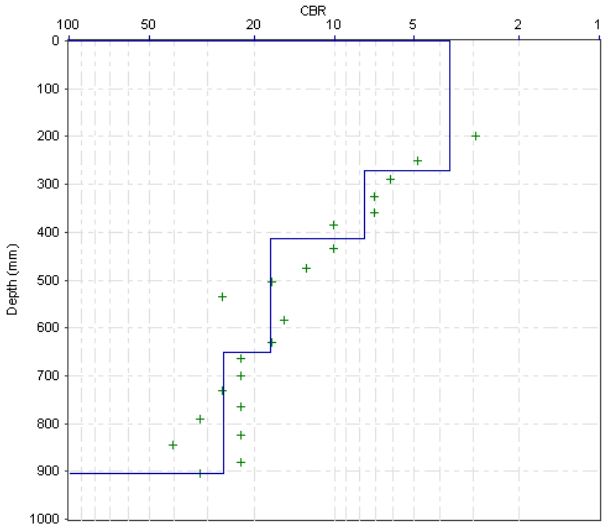
DCP Layer Strength Analysis Report

Project Name: DCP5

Chainage (km):	0.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Carriageway	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Moderate
Test Date:	09/04/2013	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)	Position	Strength Coefficient	SN	SNC	SNP
1	65.06	4	272	272	Subgrade	--	--	--	--
2	32.16	8	142	414	Subgrade	--	--	--	--
3	14.96	17	236	650	Subgrade	--	--	--	--
4	10.16	26	255	905	Subgrade	--	--	--	--

Pavement Strength

	Layer Contribution		
Layer	**SN**	**SNC**	**SNP**
Surface	--	--	--
Base	--	--	--
Sub-Base	--	--	--
Subgrade	--	0.28	0.28
Pavement Strength	--	0.28	0.28

CBR Relationship:

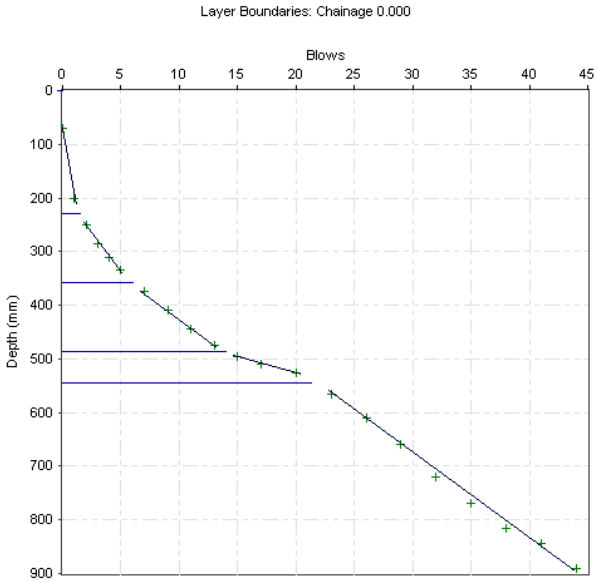
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

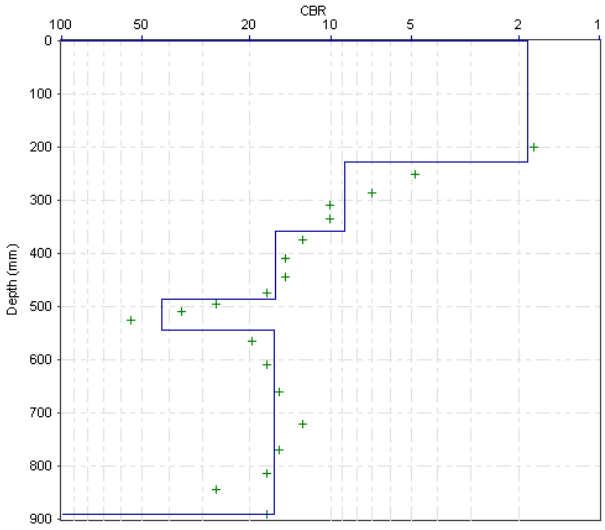
DCP Layer Strength Analysis Report

Project Name: DCP6

Chainage (km):	0.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Carriageway	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Moderate
Test Date:	09/04/2013	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)	Position	Strength Coefficient	SN	SNC	SNP
1	123.97	2	229	229	Subgrade	--	--	--	--
2	28.18	9	128	357	Subgrade	--	--	--	--
3	16.06	16	129	486	Subgrade	--	--	--	--
4	6.40	42	58	544	Subgrade	--	--	--	--
5	15.90	16	346	890	Subgrade	--	--	--	--

Pavement Strength

	Layer Contribution		
Layer	**SN**	**SNC**	**SNP**
Surface	--	--	--
Base	--	--	--
Sub-Base	--	--	--
Subgrade	--	0.00	0.00
Pavement Strength	--	0.00	0.00

CBR Relationship:

TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

SOAKAWAY TEST RESULTS

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Job Title: Wey Valley, Dorchester Road, Weymouth, Dorset
Job No.: 13107
Client: C.G. Fry & Son Ltd
Date: May-13

Test No. TP01

Trial Pit Dimensions

Length (m):	1.80
Width (m):	0.70
Depth (m):	2.20
Start Water Level (m):	0.96
Total Depth of Test	1.24

Field Results

Time (minutes)	Water Level (mBGL)
0	0.96
28	0.96
171	0.96
263	0.96
356	0.96

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Calculations

Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

Where

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth

= 1.80 x 0.70 x 0.62

= 0.7812 m^3

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including the base area

= 0.87 + 2.23 + 1.26

= 4.36 m^2

t_{p75-25} = time for the water level to fall from 75% to 25% effective depth

25% effective depth = 1.27

75% effective depth = 1.89

= - mins

= 0 mins

= 0 secs

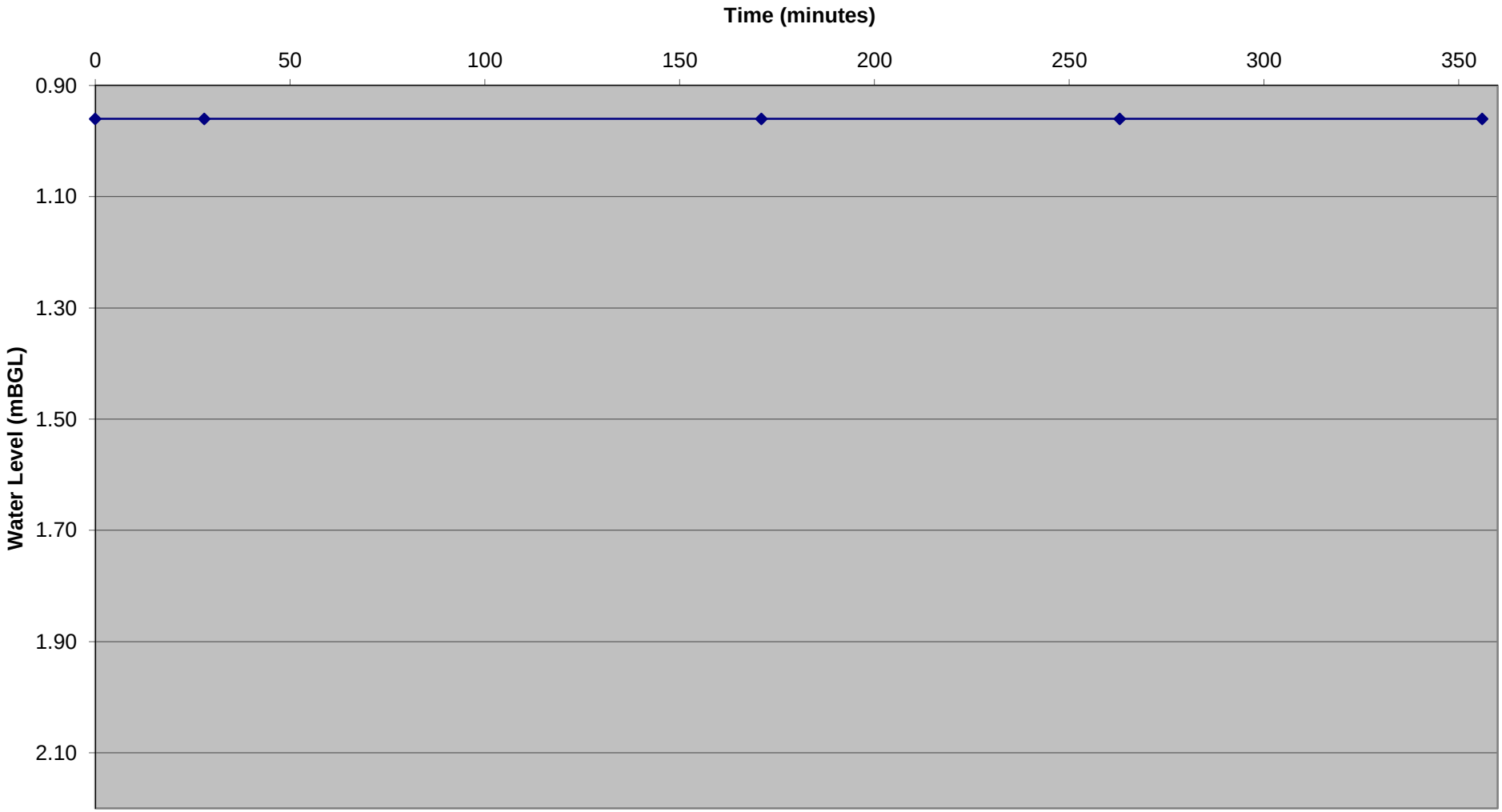
Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

= 0.7812 / 4.36 x 0

= #DIV/0! m/s

OTHER NOTES:

Soakaway Test Results - TP01



Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Job Title:	Wey Valley, Dorchester Road, Weymouth, Dorset
Job No.:	13107
Client:	C.G. Fry & Son Ltd
Date:	May-13

Test No. TP05

Trial Pit Dimensions

Length (m):	2.50
Width (m):	0.70
Depth (m):	2.50
Start Water Level (m):	1.01
Total Depth of Test	1.49

Field Results

Time (minutes)	Water Level (mBGL)
0	1.01
1	1.01
2	1.01
3	1.01
4	1.01
5	1.01
353	1.01

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Calculations

Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

Where

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth

= 2.50 x 0.70 x 0.75

= 1.30375 m^3

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including the base area

= 1.04 + 3.73 + 1.75

= 6.518 m^2

t_{p75-25} = time for the water level to fall from 75% to 25% effective depth

25% effective depth = 1.3825

75% effective depth = 2.1275

= - mins

= 0 mins

= 0 secs

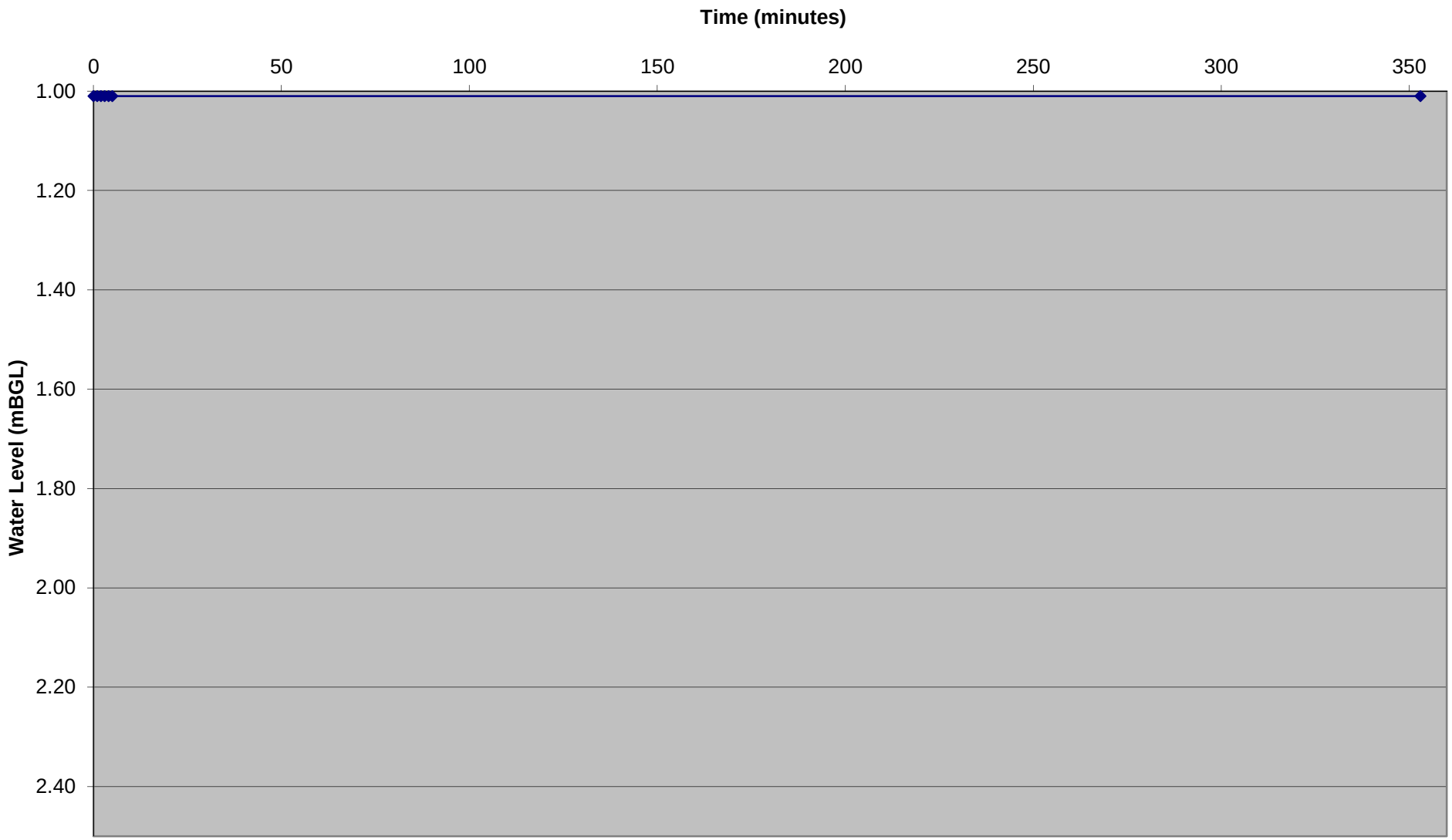
Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

= 1.30375 / 6.52 x 0

= #DIV/0! m/s

OTHER NOTES:

Soakaway Test Results - TP05



Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Job Title:	Wey Valley, Dorchester Road, Weymouth, Dorset
Job No.:	13107
Client:	C.G. Fry & Son Ltd
Date:	May-13

Test No. TP11

Trial Pit Dimensions

Length (m):	2.40
Width (m):	0.70
Depth (m):	2.60
Start Water Level (m):	1.30
Total Depth of Test	1.30

Field Results

Time (minutes)	Water Level (mBGL)
0	1.30
1	1.30
2	1.30
3	1.30
4	1.30
5	1.30
181	1.30
340	1.30

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Calculations

Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

Where

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth

= 2.40 x 0.70 x 0.65

= 1.092 m^3

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including the base area

= 0.91 + 3.12 + 1.68

= 5.71 m^2

t_{p75-25} = time for the water level to fall from 75% to 25% effective depth

25% effective depth = 1.625

75% effective depth = 2.275

= - mins

= 0 mins

= 0 secs

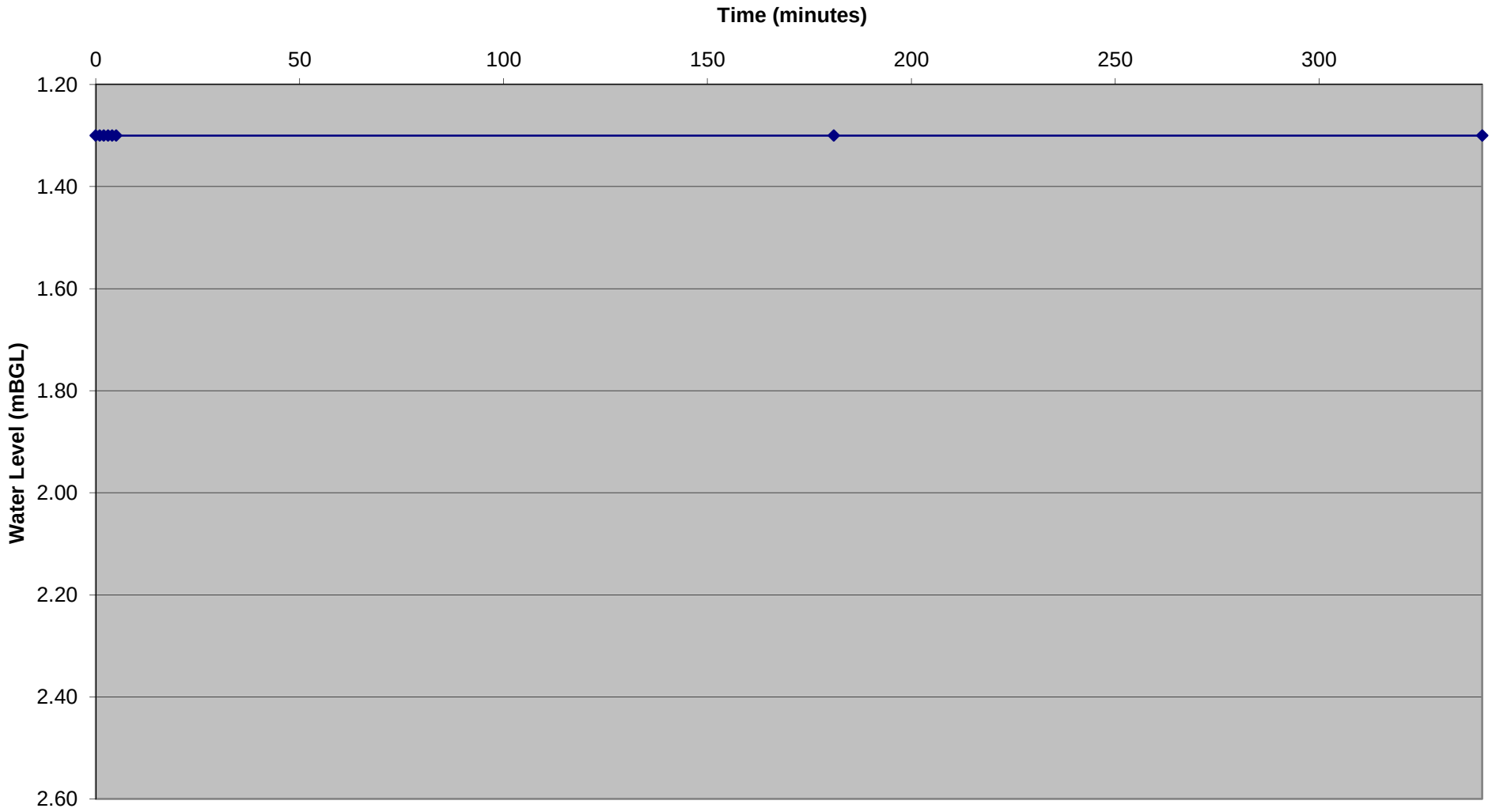
Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

= 1.092 / 5.71 x 0

= #DIV/0! m/s

OTHER NOTES:

Soakaway Test Results - TP11



Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Job Title:	Wey Valley, Dorchester Road, Weymouth, Dorset
Job No.:	13107
Client:	C.G. Fry & Son Ltd
Date:	May-13

Test No. TP13

Trial Pit Dimensions

Length (m):	2.30
Width (m):	0.70
Depth (m):	1.90
Start Water Level (m):	0.91
Total Depth of Test	0.99

Field Results

Time (minutes)	Water Level (mBGL)
0	0.91
1	0.91
2	0.92
3	0.92
4	0.92
5	0.93
157	1.03
340	1.05

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Calculations

Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

Where

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth

= 2.30 x 0.70 x 0.50

= 0.79695 m^3

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including the base area

= 0.69 + 2.28 + 1.61

= 4.58 m^2

t_{p75-25} = time for the water level to fall from 75% to 25% effective depth

25% effective depth = 1.1575

75% effective depth = 1.6525

= - mins

= 0 mins

= 0 secs

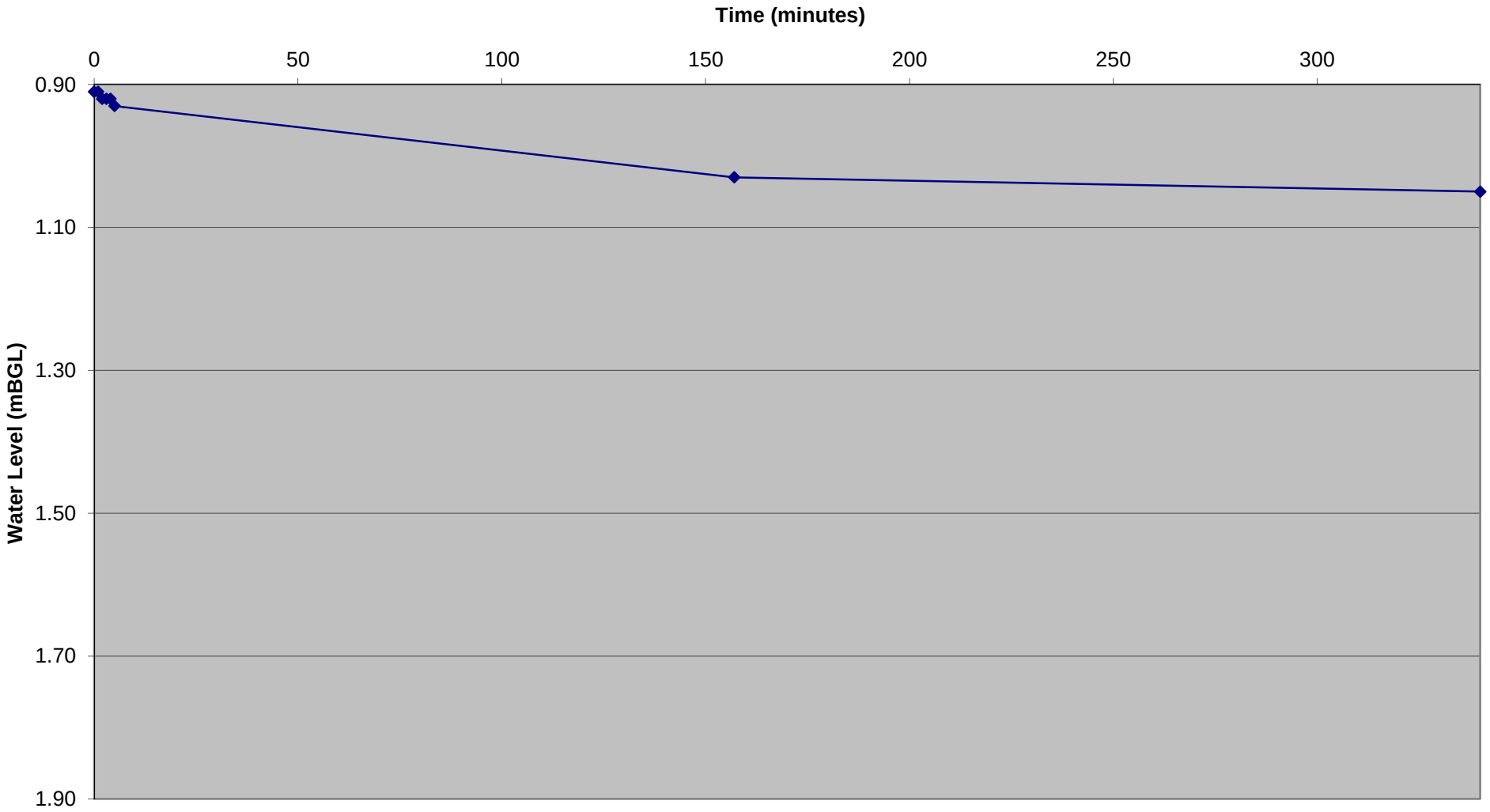
Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

= 0.79695 / 4.58 x 0

= #DIV/0! m/s

OTHER NOTES:

Soakaway Test Results - TP13



Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Job Title:	Wey Valley, Dorchester Road, Weymouth, Dorset
Job No.:	13107
Client:	C.G. Fry & Son Ltd
Date:	May-13

Test No. TP16

Trial Pit Dimensions

Length (m):	2.10
Width (m):	0.70
Depth (m):	2.60
Start Water Level (m):	1.04
Total Depth of Test	1.56

Field Results

Time (minutes)	Water Level (mBGL)
0	1.04
25	1.04
168	1.05
345	1.05

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Calculations

Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

Where

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth

= 2.10 x 0.70 x 0.78

= 1.1466 m^3

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including the base area

= 1.09 + 3.28 + 1.47

= 5.838 m^2

t_{p75-25} = time for the water level to fall from 75% to 25% effective depth

25% effective depth = 1.43
75% effective depth = 2.21

= - mins

= 0 mins

= 0 secs

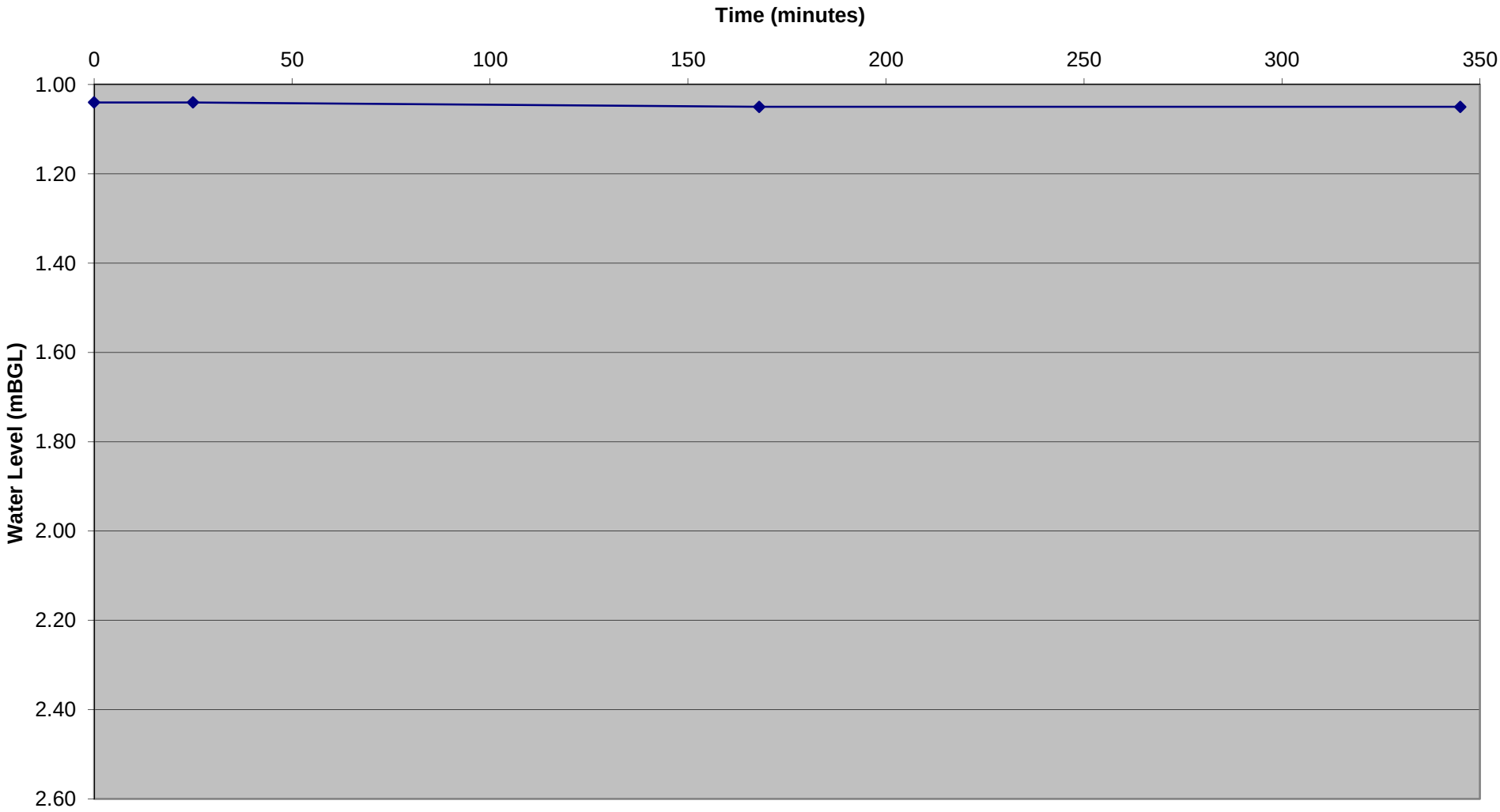
Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

= 1.1466 / 5.84 x 0

= #DIV/0! m/s

OTHER NOTES:

Soakaway Test Results - TP16



Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Job Title:	Wey Valley, Dorchester Road, Weymouth, Dorset
Job No.:	13107
Client:	C.G. Fry & Son Ltd
Date:	May-13

Test No. TP21

Trial Pit Dimensions

Length (m):	2.10
Width (m):	0.70
Depth (m):	2.40
Start Water Level (m):	1.04
Total Depth of Test	1.36

Field Results

Time (minutes)	Water Level (mBGL)
0	1.04
327	1.04

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Calculations

Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

Where

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth

= 2.10 x 0.70 x 0.68

= 0.9996 m^3

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including the base area

= 0.95 + 2.86 + 1.47

= 5.278 m^2

t_{p75-25} = time for the water level to fall from 75% to 25% effective depth

25% effective depth = 1.38
75% effective depth = 2.06

= - mins

= 0 mins

= 0 secs

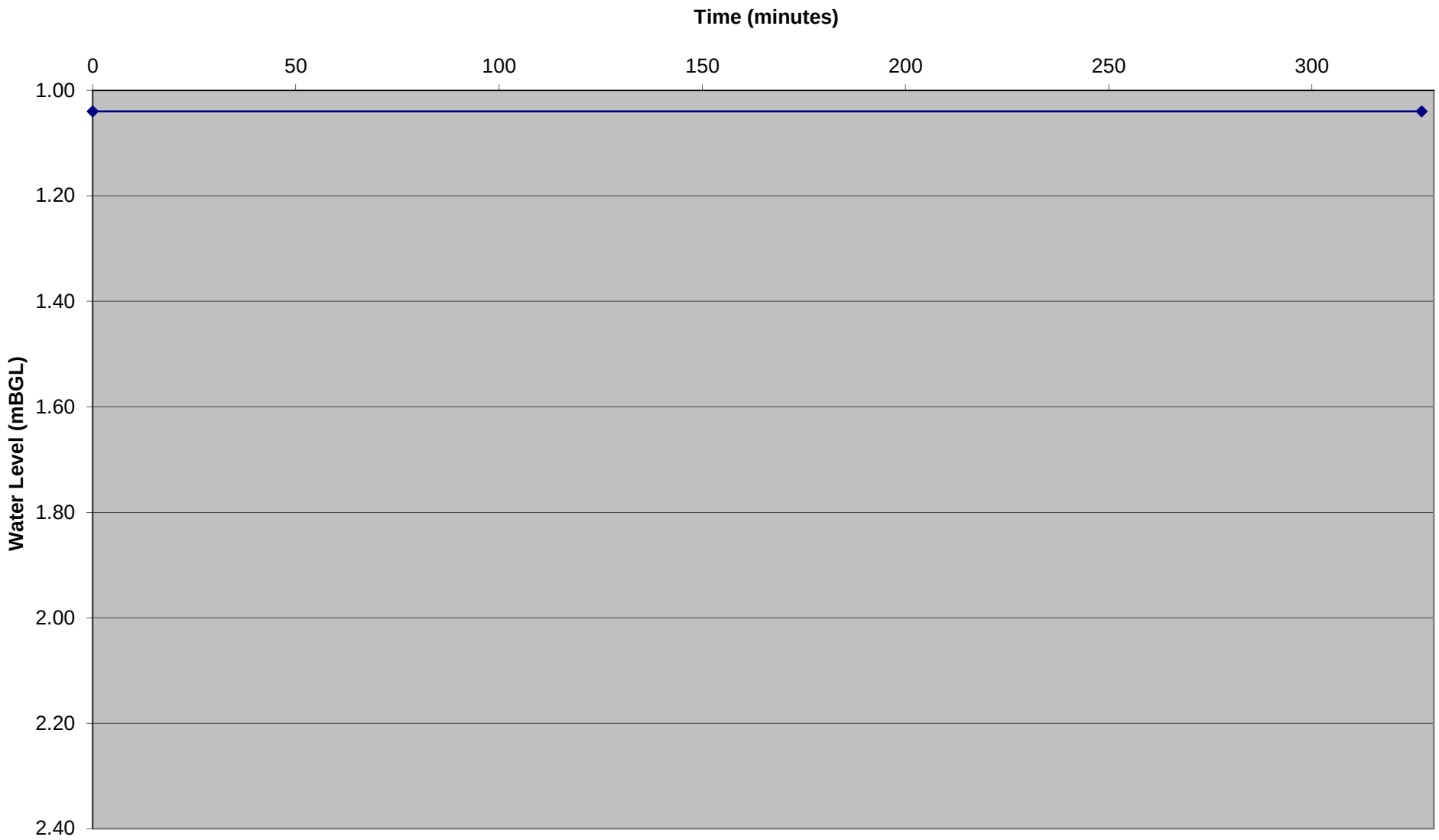
Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

= 0.9996 / 5.28 x 0

= #DIV/0! m/s

OTHER NOTES:

Soakaway Test Results - TP21



Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Job Title:	Wey Valley, Dorchester Road, Weymouth, Dorset
Job No.:	13107
Client:	C.G. Fry & Son Ltd
Date:	May-13

Test No. TP26

Trial Pit Dimensions

Length (m):	2.40
Width (m):	0.70
Depth (m):	2.50
Start Water Level (m):	0.98
Total Depth of Test	1.52

Field Results

Time (minutes)	Water Level (mBGL)
0	0.98
1	0.98
2	0.98
3	0.98
4	0.98
5	0.98
6	0.98
7	0.98
8	0.98
238	0.98
340	0.98

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Calculations

Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

Where

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth

= 2.40 x 0.70 x 0.76

= 1.2768 m^3

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including the base area

= 1.06 + 3.65 + 1.68

= 6.392 m^2

t_{p75-25} = time for the water level to fall from 75% to 25% effective depth

25% effective depth = 1.36

75% effective depth = 2.12

= - mins

= 0 mins

= 0 secs

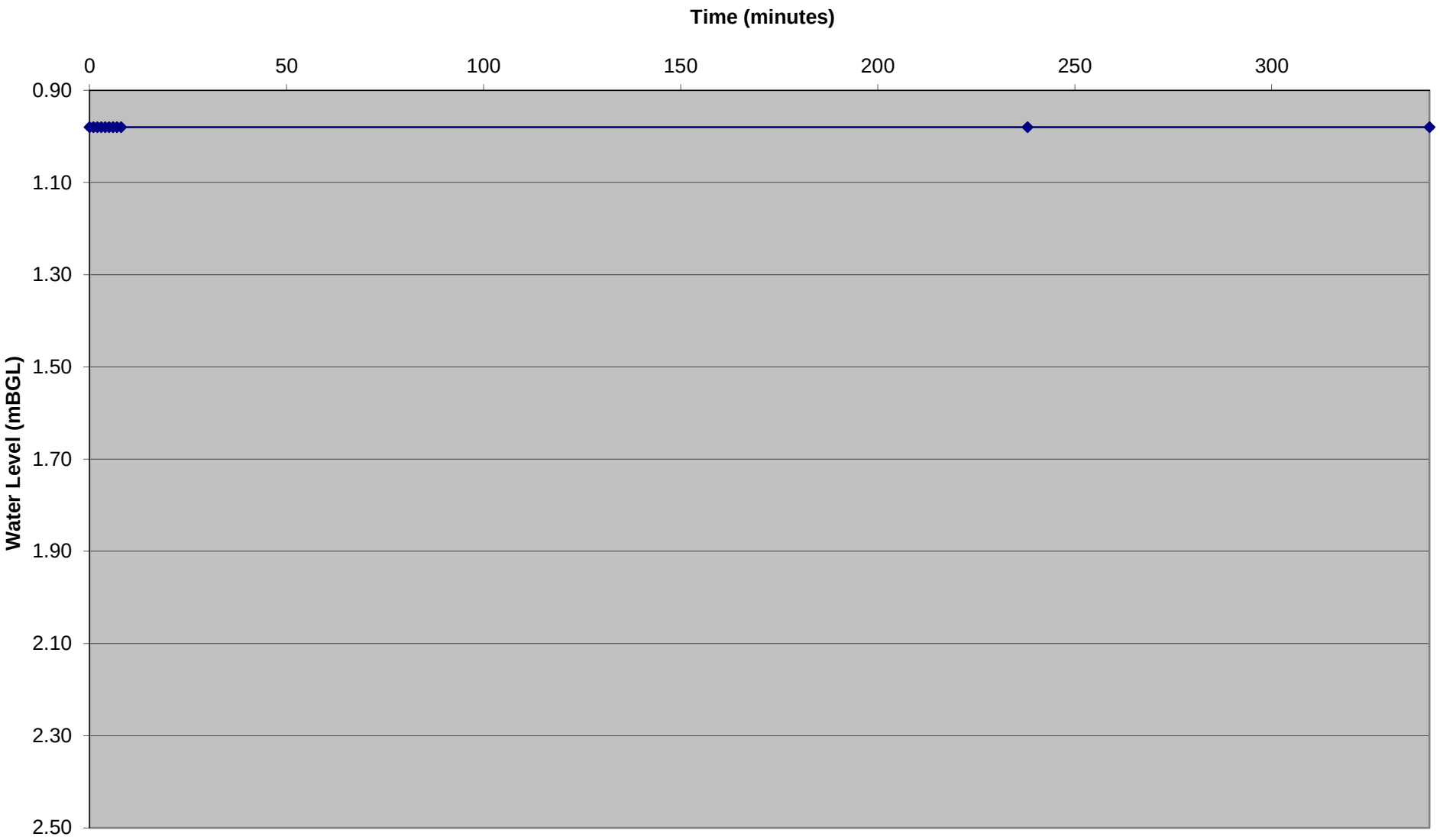
Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

= 1.2768 / 6.39 x 0

= #DIV/0! m/s

OTHER NOTES:

Soakaway Test Results - TP26



Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Job Title:	Wey Valley, Dorchester Road, Weymouth, Dorset
Job No.:	13107
Client:	C.G. Fry & Son Ltd
Date:	May-13

Test No. TP29

Trial Pit Dimensions

Length (m):	2.30
Width (m):	0.70
Depth (m):	2.70
Start Water Level (m):	1.20
Total Depth of Test	1.50

Field Results

Time (minutes)	Water Level (mBGL)
0	1.20
1	1.20
2	1.20
3	1.20
4	1.20
5	1.20
6	1.19
244	1.14

Soakaway Test Results
In Accordance with BRE 365 "Soakaway Design"

Calculations

Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

Where

V_{p75-25} = effective storage volume of water in the trial pit between 75% and 25% effective depth

= 2.30 x 0.70 x 0.75

= 1.2075 m^3

a_{p50} = internal surface area of the trial pit up to 50% effective depth and including the base area

= 1.05 + 3.45 + 1.61

= 6.11 m^2

t_{p75-25} = time for the water level to fall from 75% to 25% effective depth

25% effective depth = 1.575

75% effective depth = 2.325

= - mins

= 0 mins

= 0 secs

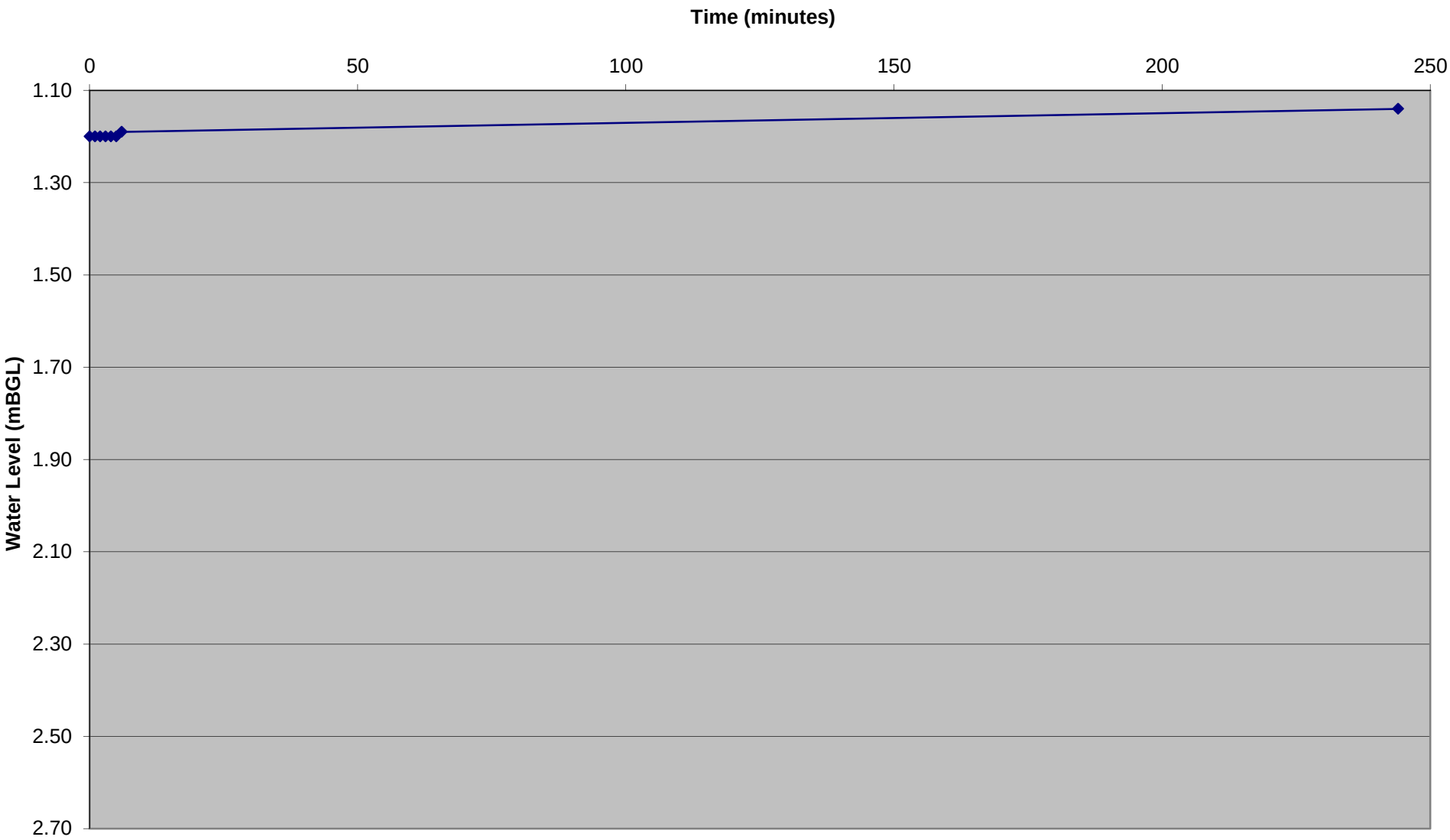
Soil Infiltration Rate (f) = $(V_{p75-25}) / (a_{p50} \times t_{p75-25})$

= 1.2075 / 6.11 x 0

= #DIV/0! m/s

OTHER NOTES:

Soakaway Test Results - TP29



APPENDIX B

PHOTOGRAPHS

PLATE 1

The east of the site, viewed from the west.

PLATE 2

Ground conditions encountered in TP22, typical of the ground conditions encountered across the site.

APPENDIX C

LABORATORY TESTING RESULTS

GEOTECHNICAL LABORATORY TESTING

Summary of Index Property Test Results

Job: Wey Valley, Weymouth **Job No: 5550**
Client: Ruddlesden geotechnical ltd **Client Job No: 13107**

Sample Reference	Natural MC (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing .425mm	Modified Plasticity Index (%)	Preparation Method	Description/ Remarks
TP01 1.00m (D)	45.5	83	28	55	100.0	55	Natural	Light brown/grey silty CLAY
TP02 2.70m (D)	18.5	34	16	18	100.0	18	Natural	Grey silty slightly sandy CLAY
TP03 1.75m (D)	25.0	55	23	32	100.0	32	Mechanical	Brown silty sandy CLAY
TP05 1.20m (D)	28.1	58	21	37	100.0	37	Natural	Brown/gree silty slightly sandy CLAY
TP08 1.30m (D)	22.8	48	18	30	100.0	30	Natural	Light brown/grey silty CLAY
TP09 1.10m (D)	21.7	47	16	31	87.7	27	Mechanical	Brown silty very sandy CLAY
TP10 2.00m (D)	24.2	59	18	41	92.3	38	Mechanical	Brown silty very sandy CLAY
TP11 2.00m (D)	29.1	61	24	37	100.0	37	Natural	Grey/brown silty slightly sandy CLAY
TP17 1.50m (D)	29.4	56	19	37	85.4	32	Mechanical	Brown silty very sandy slightly gravelly CLAY
TP18 1.60m (D)	24.5	39	16	23	100.0	23	Natural	Light brown/grey silty slightly sandy CLAY

Tests carried out in accordance with Clauses 3.2, 4.3, 5.3 and 5.4 of BS1377: Part 2: 1990

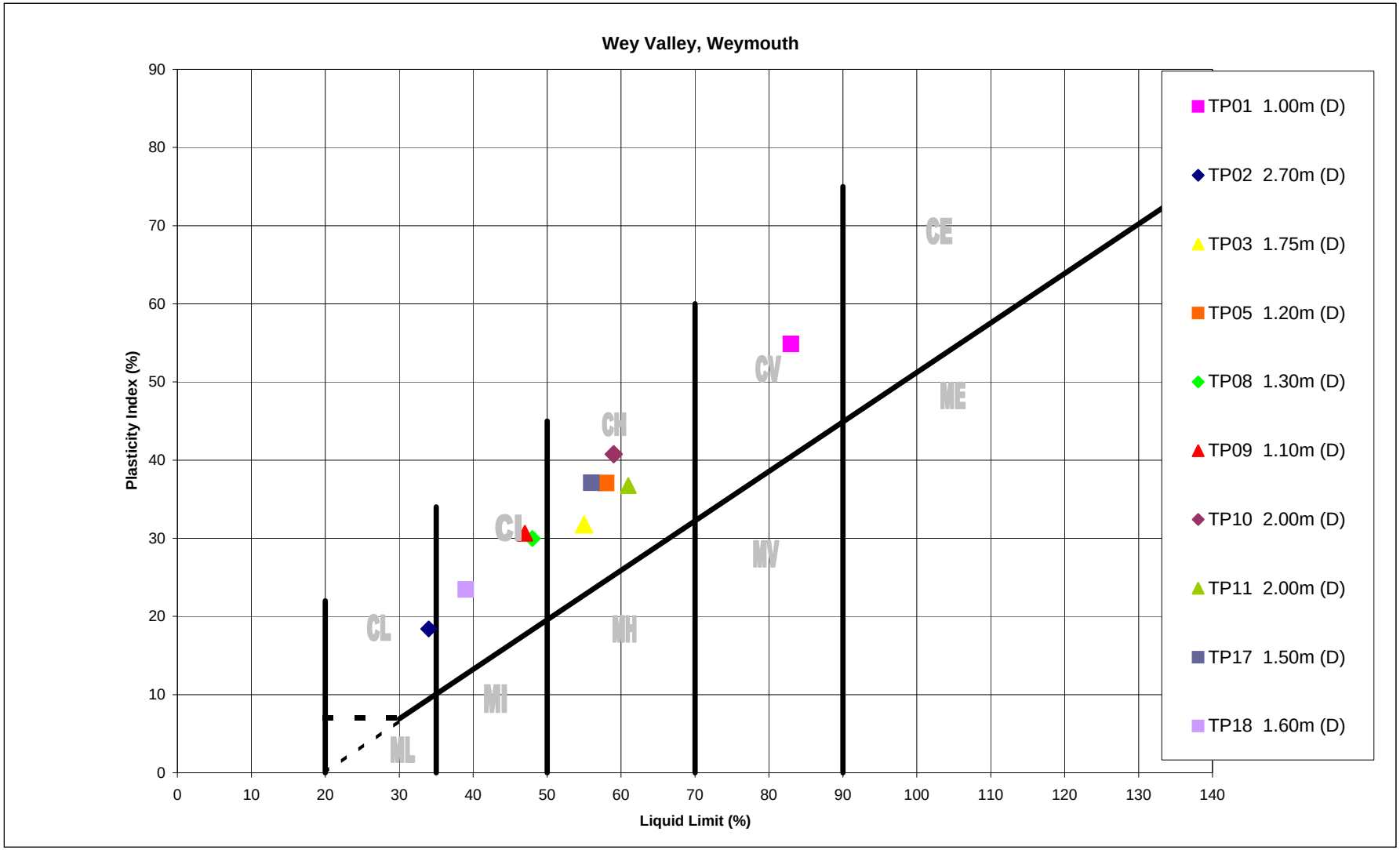
Modified Plasticity Index is defined in NHBC Chapter 4.2 as the PI multiplied by the percentage of particles passing the .425mm sieve.

Non-Modified Plasticity Indices plotted on the attached Casagrande Classification chart.

Prepared By: DA Date: 16/04/2013 *Processed By:* MD Date: 19/04/2013

Tested By DA Date: 18-19/04/2013 *Checked By:* DA Date: 19/04/2013

Summary of Index Property Test Results



Summary of Index Property Test Results

Job: Wey Valley, Weymouth **Job No: 5550**
Client: Ruddlesden geotechnical ltd **Client Job No: 13107**

Sample Reference	Natural MC (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing .425mm	Modified Plasticity Index (%)	Preparation Method	Description/ Remarks
TP20 2.50m (D)	23.5	44	19	25	76.9	19	Mechanical	Grey silty very sandy CLAY
TP23 1.50m (D)	24.0	48	18	30	100.0	30	Natural	Brown silty slightly sandy CLAY
TP25 1.00m (D)	33.6	72	26	46	100.0	46	Natural	Light brown/grey silty CLAY
TP27 1.00m (D)	16.3	44	16	28	75.1	21	Mechanical	Brown/green silty/sandy slightly gravelly CLAY
TP29 1.50m (D)	30.8	69	23	46	100.0	46	Natural	Light brown/grey silty CLAY

Tests carried out in accordance with Clauses 3.2, 4.3, 5.3 and 5.4 of BS1377: Part 2: 1990

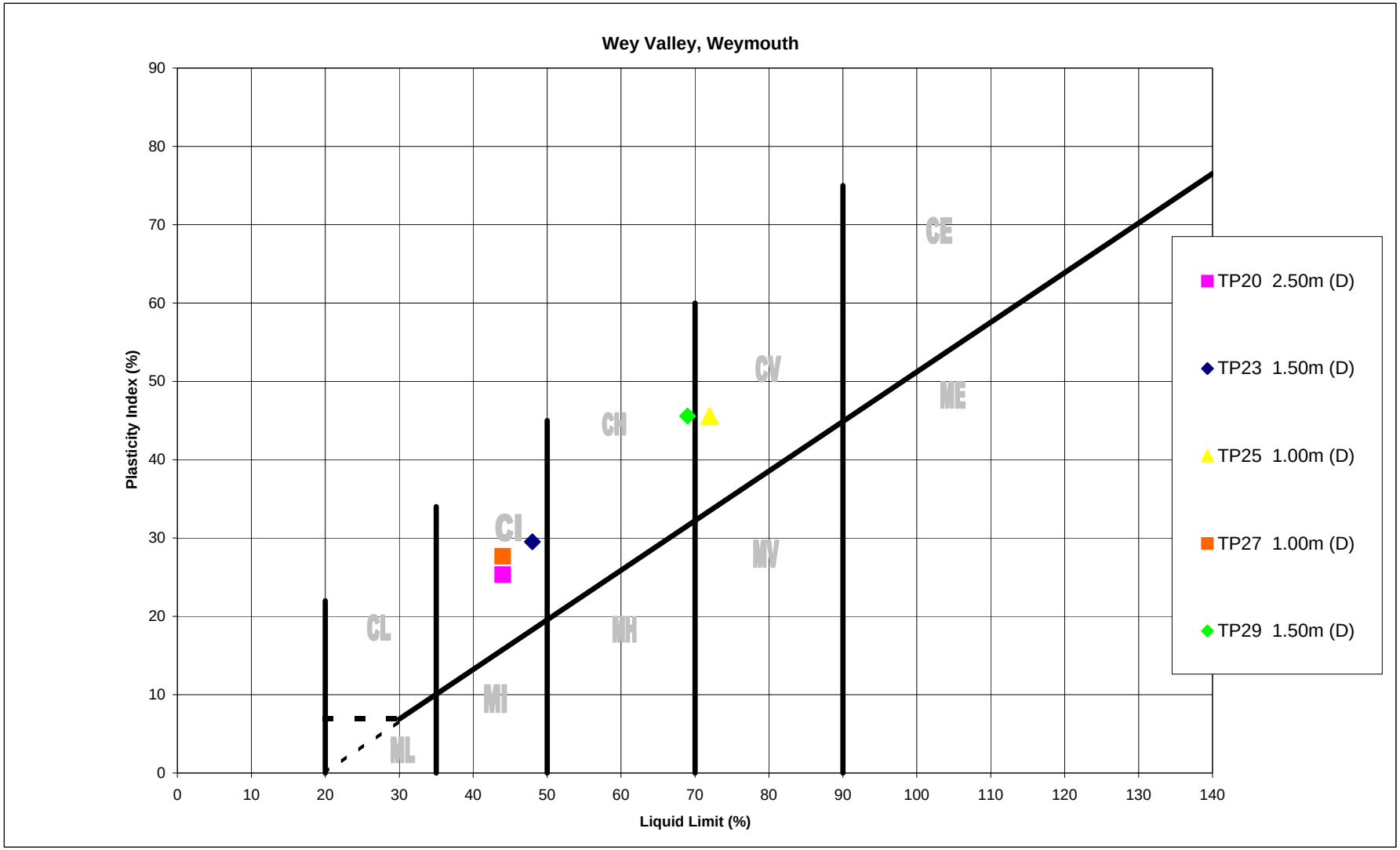
Modified Plasticity Index is defined in NHBC Chapter 4.2 as the PI multiplied by the percentage of particles passing the .425mm sieve.

Non-Modified Plasticity Indices plotted on the attached Casagrande Classification chart.

Prepared By: DA Date: 16/04/2013 *Processed By:* MD Date: 19/04/2013

Tested By DA Date: 18-19/04/2013 *Checked By:* DA Date: 19/04/2013

Summary of Index Property Test Results



CONTAMINATION LABORATORY TESTING

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Watford,
WD25 9XX

t: 01923 67 00 20
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e: reception@i2analytical.com

Analytical Report Number : 13-41540

Project / Site name:	Wey Valley , Weymouth	**Samples received on:**	15/04/2013
Your job number:		**Samples instructed on:**	15/04/2013
Your order number:	13107	**Analysis completed by:**	23/04/2013
Report Issue Number:	1	**Report issued on:**	23/04/2013
Samples Analysed:	30 soil samples		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Rexona Rahman
Customer Services Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257480	257481	257482	257483	257484
Sample Reference				TP01	TP02	TP03	TP05	TP08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.20	0.75	0.50	0.30
Date Sampled				09/04/2013	11/04/2013	10/04/2013	10/04/2013	10/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	32	24	20	20	24
Total mass of sample received	kg	0.001	NONE	0.46	0.44	0.56	0.44	0.46
General Inorganics								
pH	pH Units	N/A	MCERTS	6.6	7.0	7.0	6.6	6.4
Water Soluble Sulphate as SO_4 (2:1)	g/l	0.0025	MCERTS	0.064	0.036	0.028	0.026	0.065
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	64	36	28	26	65
Organic Matter	%	0.1	MCERTS	6.5	4.3	0.3	2.9	4.4
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	0.22	< 0.20	< 0.20	< 0.20	< 0.20
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	0.87	< 0.20	< 0.20	< 0.20	< 0.20
Pyrene	mg/kg	0.2	MCERTS	0.83	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.48	< 0.20	< 0.20	< 0.20	< 0.20
Chrysene	mg/kg	0.05	MCERTS	0.54	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.58	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.36	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.57	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	0.30	< 0.20	< 0.20	< 0.20	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.36	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	5.2	< 1.6	< 1.6	< 1.6	< 1.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.1	7.9	7.3	6.8	6.3
Boron (water soluble)	mg/kg	0.2	MCERTS	2.6	1.9	< 0.2	1.0	2.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	31	32	26	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	16	15	14	15
Lead (aqua regia extractable)	mg/kg	2	MCERTS	36	40	11	46	42
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	13	15	21	13	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	65	71	62	56	52

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257480	257481	257482	257483	257484
Sample Reference				TP01	TP02	TP03	TP05	TP08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.20	0.75	0.50	0.30
Date Sampled				09/04/2013	11/04/2013	10/04/2013	10/04/2013	10/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257485	257486	257487	257488	257489
Sample Reference				TP09	TP10	TP13	TP18	TP20
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.10	0.60	0.25	0.25
Date Sampled				11/04/2013	11/04/2013	10/04/2013	11/04/2013	09/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	18	22	16	18	22
Total mass of sample received	kg	0.001	NONE	0.45	0.45	0.48	0.47	0.50
General Inorganics								
pH	pH Units	N/A	MCERTS	7.8	7.1	7.7	7.4	6.5
Water Soluble Sulphate as SO_4 (2:1)	g/l	0.0025	MCERTS	0.017	0.041	0.021	0.022	0.029
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	17	41	21	22	29
Organic Matter	%	0.1	MCERTS	1.3	6.1	1.8	3.1	2.4
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	5.2	9.4	5.3	6.4
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	1.2	1.7	1.0	1.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	16	19	19	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.3	15	15	11	14
Lead (aqua regia extractable)	mg/kg	2	MCERTS	25	36	41	25	29
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	14	8.0	18	9.3	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	41	50	55	52	50

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257485	257486	257487	257488	257489
Sample Reference				TP09	TP10	TP13	TP18	TP20
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.10	0.60	0.25	0.25
Date Sampled				11/04/2013	11/04/2013	10/04/2013	11/04/2013	09/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257490	257491	257492	257493	257494
Sample Reference				TP23	TP25	TP27	TP29	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.40	0.20	0.25
Date Sampled				09/04/2013	09/04/2013	10/04/2013	10/04/2013	10/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	23	24	10	22	22
Total mass of sample received	kg	0.001	NONE	0.40	0.46	0.47	0.49	0.47
General Inorganics								
pH	pH Units	N/A	MCERTS	6.5	6.1	7.1	6.8	7.5
Water Soluble Sulphate as SO_4 (2:1)	g/l	0.0025	MCERTS	0.041	0.044	0.023	0.066	0.049
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	41	44	23	66	49
Organic Matter	%	0.1	MCERTS	3.5	3.7	1.2	3.2	5.1
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.44
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	0.39
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	1.9
Fluorene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	1.5
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	27
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	10
Fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	130
Pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	120
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	76
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	54
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	67
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	38
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	62
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	29
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	< 0.20	< 0.20	< 0.20	7.0
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	34
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	650
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.5	6.5	6.1	6.9	14
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	0.8	0.6	1.5	1.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	0.5
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	27	14	25	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	16	8.7	15	33
Lead (aqua regia extractable)	mg/kg	2	MCERTS	38	37	10	61	100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	14	13	14	14	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	52	56	31	51	200

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257490	257491	257492	257493	257494
Sample Reference				TP23	TP25	TP27	TP29	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.40	0.20	0.25
Date Sampled				09/04/2013	09/04/2013	10/04/2013	10/04/2013	10/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	1400
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	1.1
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	20
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	22
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	28
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	71
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	2.5
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	49
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	410
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	840
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	1300

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257495	257496	257497	257498	257499
Sample Reference				TP01	TP02	TP03	TP05	TP08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	2.70	1.75	1.20	1.30
Date Sampled				09/04/2013	11/04/2013	10/04/2013	10/04/2013	10/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	26	14	20	19	17
Total mass of sample received	kg	0.001	NONE	0.17	0.21	0.19	0.19	0.21
General Inorganics								
pH	pH Units	N/A	MCERTS	6.0	6.7	4.3	5.5	4.7
Water Soluble Sulphate as SO_4 (2:1)	g/l	0.0025	MCERTS	0.45	0.052	0.85	0.032	0.62
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	450	52	850	32	620
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	-	-	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.2	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.2	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.1	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.2	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.2	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	-	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257495	257496	257497	257498	257499
Sample Reference				TP01	TP02	TP03	TP05	TP08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	2.70	1.75	1.20	1.30
Date Sampled				09/04/2013	11/04/2013	10/04/2013	10/04/2013	10/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257500	257501	257502	257503	257504
Sample Reference				TP09	TP10	TP11	TP17	TP18
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.10	2.00	2.00	1.50	1.60
Date Sampled				11/04/2013	11/04/2013	10/04/2013	10/04/2013	11/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	18	19	20	24	18
Total mass of sample received	kg	0.001	NONE	0.18	0.18	0.17	0.20	0.21
General Inorganics								
pH	pH Units	N/A	MCERTS	6.3	6.4	5.9	6.7	6.9
Water Soluble Sulphate as SO_4 (2:1)	g/l	0.0025	MCERTS	0.044	0.034	0.071	0.11	0.15
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	44	34	70	110	150
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	-	-	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.2	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.2	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.1	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.2	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.2	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	-	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257500	257501	257502	257503	257504
Sample Reference				TP09	TP10	TP11	TP17	TP18
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.10	2.00	2.00	1.50	1.60
Date Sampled				11/04/2013	11/04/2013	10/04/2013	10/04/2013	11/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257505	257506	257507	257508	257509
Sample Reference				TP20	TP23	TP25	TP27	TP29
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.50	1.50	1.00	1.00	1.50
Date Sampled				09/04/2013	09/04/2013	09/04/2013	10/04/2013	10/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	17	22	14	20
Total mass of sample received	kg	0.001	NONE	0.17	0.16	0.20	0.19	0.18
General Inorganics								
pH	pH Units	N/A	MCERTS	4.5	6.1	4.7	6.6	6.7
Water Soluble Sulphate as SO_4 (2:1)	g/l	0.0025	MCERTS	0.071	0.15	0.29	0.019	0.19
Water Soluble Sulphate as SO_4 (2:1)	mg/kg	2.5	MCERTS	71	150	290	19	190
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	2	MCERTS	-	-	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.2	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.2	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.1	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.2	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.2	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	-	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	-	-	-	-	-

Analytical Report Number: 13-41540

Project / Site name: Wey Valley , Weymouth
Your Order No: 13107

Lab Sample Number				257505	257506	257507	257508	257509
Sample Reference				TP20	TP23	TP25	TP27	TP29
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.50	1.50	1.00	1.00	1.50
Date Sampled				09/04/2013	09/04/2013	09/04/2013	10/04/2013	10/04/2013
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number : 13-41540

Project / Site name: Wey Valley , Weymouth

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
257480	TP01	None Supplied	0.10	Brown topsoil and clay with vegetation.
257481	TP02	None Supplied	0.20	Brown topsoil and clay with vegetation.
257482	TP03	None Supplied	0.75	Light brown clay with gravel.
257483	TP05	None Supplied	0.50	Brown topsoil and clay with vegetation.
257484	TP08	None Supplied	0.30	Brown topsoil and clay with vegetation.
257485	TP09	None Supplied	0.50	Light brown topsoil and clay with vegetation.
257486	TP10	None Supplied	0.10	Brown topsoil and clay with vegetation.
257487	TP13	None Supplied	0.60	Brown topsoil and clay with vegetation and gravel.
257488	TP18	None Supplied	0.25	Brown topsoil and clay with vegetation.
257489	TP20	None Supplied	0.25	Brown clay and topsoil with vegetation.
257490	TP23	None Supplied	0.30	Brown topsoil and clay with vegetation.
257491	TP25	None Supplied	0.15	Brown topsoil and clay with vegetation.
257492	TP27	None Supplied	0.40	Light brown topsoil and clay with vegetation and gravel.
257493	TP29	None Supplied	0.20	Brown topsoil and clay with vegetation.
257494	WS2	None Supplied	0.25	Brown topsoil and clay with vegetation and coal.
257495	TP01	None Supplied	1.00	Light brown clay.
257496	TP02	None Supplied	2.70	Grey sandy clay.
257497	TP03	None Supplied	1.75	Light brown clay and sand.
257498	TP05	None Supplied	1.20	Light brown clay and sand.
257499	TP08	None Supplied	1.30	Light brown clay and sand.
257500	TP09	None Supplied	1.10	Light brown sandy clay.
257501	TP10	None Supplied	2.00	Light brown sandy clay.
257502	TP11	None Supplied	2.00	Grey clay and sand with chalk.
257503	TP17	None Supplied	1.50	Light brown clay and sand.
257504	TP18	None Supplied	1.60	Light brown clay and sand.
257505	TP20	None Supplied	2.50	Grey clay and sand.
257506	TP23	None Supplied	1.50	Light brown clay and sand.
257507	TP25	None Supplied	1.00	Light brown clay.
257508	TP27	None Supplied	1.00	Light brown clay and sand.
257509	TP29	None Supplied	1.50	Light brown clay.

Analytical Report Number : 13-41540

Project / Site name: Wey Valley , Weymouth

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH1 (Soil)	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method	L064-PL	D	MCERTS
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Generic Assessment Criteria (GAC)
Residential Land Use

Determinand	Unit	GAC	Highest Recorded Value	Location of Highest Recorded Value	No. of values exceeding GAC	Source of GAC
Boron (water soluble)	mg/kg	291	2.6	TP01	0 of 15	LQM/ CIEH
Sulphate (2:1 extract)	g/l	1.2	0.85	TP03	0 of 30	BRE
Arsenic	mg/kg	32	14	WS2	0 of 15	SGV
Cadmium	mg/kg	10	0.5	WS2	0 of 15	SGV
Chromium	mg/kg	3000	32	TP03	0 of 15	LQM/ CIEH
Copper	mg/kg	2330	33	WS2	0 of 15	LQM/ CIEH
Mercury	mg/kg	1	<0.3	ALL	0 of 15	SGV
Nickel	mg/kg	130	26	WS2	0 of 15	SGV
Lead	mg/kg	450	100	WS2	0 of 15	SGV (OLD)
Selenium	mg/kg	350	<1	ALL	0 of 15	SGV
Zinc	mg/kg	3750	200	WS2	0 of 15	LQM/ CIEH
Total TPH	*mg/kg*	*10*	*1400*	*WS2*	*1 of 15*	*Screening Value*
Naphthalene	mg/kg	1% SOM 1.5 / 2.50% SOM 3.7 / 6% SOM 8.7	0.44	WS2	0 of 15	LQM/ CIEH
Acenaphthylene	mg/kg	1% SOM 170 / 2.50% SOM 400 / 6% SOM 850	0.39	WS2	0 of 15	LQM/ CIEH
Acenaphthene	mg/kg	1% SOM 210 / 2.50% SOM 480 / 6% SOM 1000	1.9	WS2	0 of 15	LQM/ CIEH
Fluorene	mg/kg	1% SOM 160 / 2.50% SOM 380 / 6% SOM 780	1.5	WS2	0 of 15	LQM/ CIEH
Phenanthrene	mg/kg	1% SOM 92 / 2.50% SOM 200 / 6% SOM 380	27	WS2	0 of 15	LQM/ CIEH
Anthracene	mg/kg	1% SOM 2300 / 2.50% SOM 4900 / 6% SOM 9200	10	WS2	0 of 15	LQM/ CIEH
Fluoranthene	mg/kg	1% SOM 260 / 2.50% SOM 460 / 6% SOM 670	130	WS2	0 of 15	LQM/ CIEH
Pyrene	mg/kg	1% SOM 560 / 2.50% SOM 1000 / 6% SOM 1600	120	WS2	0 of 15	LQM/ CIEH
Benzo(a)anthracene	*mg/kg*	*1% SOM 3.1 / 2.50% SOM 4.7 / 6% SOM 5.9*	*76*	*WS2*	*1 of 15*	*LQM/ CIEH*
Chrysene	*mg/kg*	*1% SOM 6 / 2.50% SOM 8 / 6% SOM 9.3*	*54*	*WS2*	*1 of 15*	*LQM/ CIEH*
Benzo(b)fluoranthene	*mg/kg*	*1% SOM 5.6 / 2.50% SOM 6.5 / 6% SOM 7*	*67*	*WS2*	*1 of 15*	*LQM/ CIEH*
Benzo(k)fluoranthene	*mg/kg*	*1% SOM 8.5 / 2.50% SOM 9.6 / 6% SOM 10*	*38*	*WS2*	*1 of 15*	*LQM/ CIEH*
Benzo(a)pyrene	*mg/kg*	*1% SOM 0.83 / 2.50% SOM 0.94 / 6% SOM 1*	*62*	*WS2*	*1 of 15*	*LQM/ CIEH*

Dibenzo(a,h) anthracene	*mg/kg*	*1% SOM 0.76*	*2.50% SOM 0.86*	*6% SOM 0.9*	*7*	*WS2*	*1 of 15*	*LQM/ CIEH*
Indeno(1,2,3-cd)pyrene	*mg/kg*	*1% SOM 3.2*	*2.50% SOM 3.9*	*6% SOM 4.2*	*29*	*WS2*	*1 of 15*	*LQM/ CIEH*
Benzo(g,h,i)perylene	mg/kg	1% SOM 44	2.50% SOM 46	6% SOM 47	34	WS2	0 of 15	LQM/ CIEH
TPH (Aliphatic EC 5-6)	mg/kg	1% SOM 30	2.50% SOM 55	6% SOM 110	<0.1	ALL	0 of 1	LQM/ CIEH
TPH (Aliphatic EC >6-8)	mg/kg	1% SOM 73	2.50% SOM 160	6% SOM 370	<0.1	ALL	0 of 1	LQM/ CIEH
TPH (Aliphatic EC >8-10)	mg/kg	1% SOM 19	2.50% SOM 46	6% SOM 110	<0.1	ALL	0 of 1	LQM/ CIEH
TPH (Aliphatic EC >10-12)	mg/kg	1% SOM 93	2.50% SOM 230	6% SOM 540	1.1	WS2	0 of 1	LQM/ CIEH
TPH (Aliphatic EC >12-16)	mg/kg	1% SOM 740	2.50% SOM 1700	6% SOM 3000	20	WS2	0 of 1	LQM/ CIEH
TPH (Aliphatic EC >16-35)	mg/kg	1% SOM 45000	2.50% SOM 64000	6% SOM 76000	50	WS2	0 of 1	LQM/ CIEH
TPH (Aromatic EC 5-7)	mg/kg	1% SOM 65	2.50% SOM 130	6% SOM 280	<0.1	ALL	0 of 1	LQM/ CIEH
TPH (Aromatic EC >7-8)	mg/kg	1% SOM 120	2.50% SOM 270	6% SOM 611	<0.1	ALL	0 of 1	LQM/ CIEH
TPH (Aromatic EC >8-10)	mg/kg	1% SOM 27	2.50% SOM 65	6% SOM 151	<0.1	ALL	0 of 1	LQM/ CIEH
TPH (Aromatic EC >10-12)	mg/kg	1% SOM 69	2.50% SOM 160	6% SOM 346	2.5	WS2	0 of 1	LQM/ CIEH
TPH (Aromatic EC >12-16)	mg/kg	1% SOM 140	2.50% SOM 310	6% SOM 593	49	WS2	0 of 1	LQM/ CIEH
TPH (Aromatic EC >16-21)	mg/kg	1% SOM 250	2.50% SOM 480	6% SOM 770	410	WS2	0 of 1	LQM/ CIEH
TPH (Aromatic EC >21-35)	mg/kg	1% SOM 890	2.50% SOM 1100	6% SOM 1230	840	WS2	0 of 1	LQM/ CIEH
Phenols (total)	mg/kg	420			<2	ALL	0 of 15	SGV
pH (less than)	*-*	*5.5*			*4.3*	*TP03*	*4 of 30*	*BRE*

Generic Assessment Criteria (GAC) Notes:

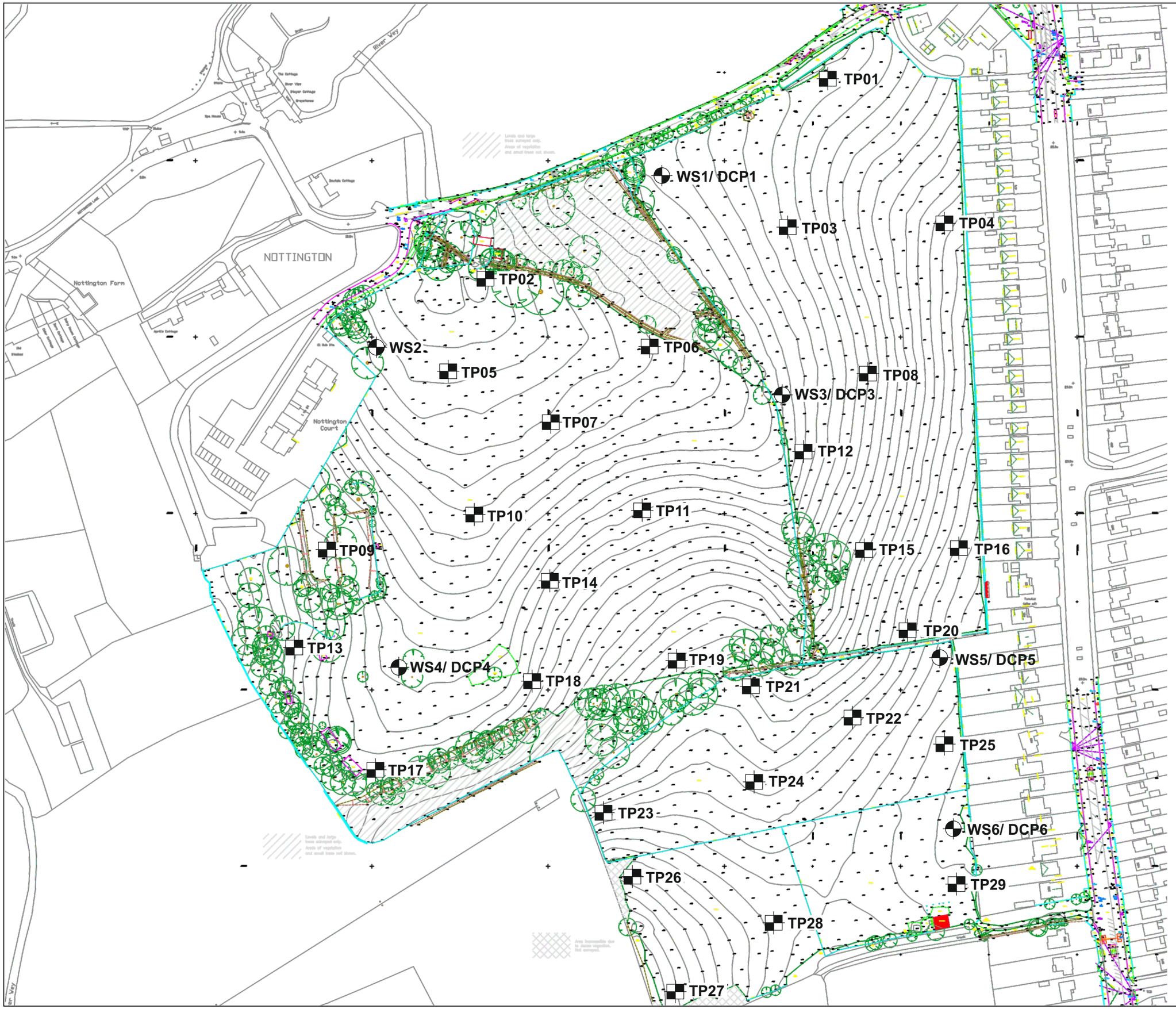
1. *Italic* entries indicate GAC exceeded.
2. Based on sandy loam soil and 6% SOM (unless otherwise stated), in accordance with Environment Agency guidance.
3. Values are rounded to one or two significant figures.
4. Where not detectable, the detection limit is reported as the highest value

Key:

1. SGV = Soil Guideline Value
2. SGV (OLD) = Old Soil Guideline Value (used in the absence of a replacement)
3. LQM/CIEH = Land Quality Management/ Chartered Institute of Environmental Health
4. BRE = Building Research Establishment (Special Digest 1)

APPENDIX D

EXPLORATORY HOLE LOCATION PLAN



LEGEND:

- Trial Pit
- Borehole

NOTES:

Drawn on plan supplied by client

Job Title:	WEY VALLEY DORCHESTER ROAD WEYMOUTH DORSET
Drawing Title:	EXPLORATORY HOLE LOCATION PLAN
Client:	C.G. FRY & SON

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Dwg No:	13107/03
Date:	May-13
Scale:	NTS