PRELIMINARY ENVIRONMENTAL INTRUSIVE SITE INVESTIGATION REPORT

Former Isolation Hospital and Council Depot, Main Road, Dovercourt

REC Report 50398/report 2.1
October 2006

Prepared for
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Client	Tendring District Council
Client Address	Town Hall Station Road Clacton-on-Sea Essex CO15 1SE
Report Title	Preliminary Intrusive Environmental Site Investigation Report, Former Isolation Hospital and Council Depot, Main Road, Dovercourt
Reference Number	50398 /report 2.1
Version	Final
Date	October 2006

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EXECUTIVE SUMMARY

Tendring District Council commissioned Resource and Environmental Consultants (REC) Ltd to undertaken an environmental intrusive site investigation of the site of the former isolation hospital site, Main Road, Dovercourt. The objective of this report is to determine any potential pollution linkages identified during the desk study were active should the site be re-developed and determine any contamination levels that may be a risk to human health and environmental receptors.

The site is generally "U" shaped, covers a land area of 0.4 hectares and is divided up into three portions. The north of the site is currently hard standing and used as a car park. The southern portion of the site is unoccupied and overgrown. A number of floor slabs of former buildings are present. The third portion of land, located adjacent to the western boundary is occupied by a mobile phone mast. The area surrounding the site is generally residential land use with Royal Oak Football Ground to the east.

The site walk-over, contact with the regulatory authorities and the clients and the review of the site information has identified the following potential sources of contamination:

- *Historical land use as hospital site (on site disposal of incinerator ash).*
- *Historical land use as council depot and ambulance station.*
- *Possible below ground storage tank in former council depot.*
- *Backfill in excavation for adjacent brickworks.*
- *Imported made ground.*
- *Onsite migration of hydrocarbons from a transformer substation.*

A review of the conceptual model in light of the investigation identified the following active pollution linkages.

A localised area of made ground that appears to be demolition material from the clearance of the former structures contained lead concentrations at levels that may present a significant risk to human health. The material also contained an arsenic concentration above the SGV and a fragment of floor tile that contained asbestos fibres. The risk assessment concluded the arsenic and the asbestos would not present a significant risk to human health.

Benzo(a)pyrene concentrations above the tier 1 screening level were identified in the made ground across most of the site. Due to the presence of tarmac and charcoal it was considered that the benzo(a)pyrene concentrations will be bound up in the tarmac and the charcoal and thus will not present a significant risk to human health, but this should be confirmed by further assessment.

The investigation identified the presence of carbon dioxide at levels that may present a significant risk to human health.

No risk to controlled waters, future planting or construction materials was identified.

The report recommended: remediation of the lead concentration a further assessment of the source of the PAH concentrations and the installation of gas protection measures.

1 INTRODUCTION

1.1 Background and Terms of Reference

Tendring Borough Council proposes to divest the site of the former isolation hospital on Main Road, Dovercourt at National Grid Reference 625050, 231330, with the potential for residential development of the site. The site location is presented in Figure 1.

An Environmental Desk Study previously undertaken identified potential pollution linkages that may be active. Tendring District Council commissioned Resource and Environmental Consultants (REC) Ltd to undertake an intrusive site investigation, the objective being to determine if any potential pollution linkages identified in the desk study are active, should the site be re-developed and to make recommendations for additional investigation works or remediation.

The desk study has generally been undertaken in accordance with British Standard BS 10175:2001 *Investigation of potentially contaminated sites – Code of Practice*.

1.2 Limitations and Constraints of the Study

For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.

Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed.

In addition to the above, REC Ltd note that when investigating, or developing, potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and also over time. The absence of certain ground, ground gas, and contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Due to the presence of existing buildings and structures access could not be obtained to all areas. Additional contamination may be identified following the removal of the buildings or hard standing.

Rather, this investigation has been undertaken to reasonably characterise existing sub-surface conditions and the findings of this study are our best interpretation of the data collected, within the scope of work and agreed budget. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

An outline of a remediation strategy has been presented in this report. However, additional investigation may be required for the preparation of a detailed site specific risk assessment and remediation method statement or to fully define the extent of remediation required.

1.3 Sources of Information

Background information relating to the site was acquired and referenced from the following sources:

- Report Prepared by REC Ltd, titled Environmental Desk Study Report, Former Isolation Hospital and Council Depot, Main Road, Dovercourt; dated August 2006, Ref 50398/report/1.1

A summary of the above report is enclosed.

2 SITE DESCRIPTION AND HISTORICAL LAND USE

2.1 Site Location and Surrounding Area

The site is located on Main Road, Dovercourt to the west of the Royal Oak Football Ground, Dovercourt, Essex CO12 3HJ at National Grid Reference 625050 231330. The site location is presented as Figure 1.

The area surrounding the site is general residential land use with housing to the north, beyond Main Road, south and west of the site. Hanover Court, a sheltered housing residence forms the southern boundary of the site. To the west are residential properties along Maple Close and Elm Drive. To the east lies the Royal Oak Football Ground. Adjacent to the north central part of the site lies an electricity sub station with a right of access across the site.

2.2 Site Descriptions and Observations

The site is generally "U" shaped and covers an area of 0.4 hectares and is divided up into three areas. The north of the site is currently hard standing and used as a car park and a market on Fridays. The southern portion of the site is unoccupied and overgrown. A number of floor slabs of former buildings are present. Black staining was noted on a former floor slab located adjacent to the eastern boundary. Two derelict buildings are present, one located near the eastern boundary and a possible bomb shelter adjacent to the western boundary. The area is fenced by a chain linked fence. The third portion of land, located adjacent to the western boundary is occupied by a mobile phone mast. The area is secured by a palisade security fence. During the site walk-over access could not be obtained in to this area. The general topography of the site is flat.

During the site walk-over no above ground or underground storage tanks or chemical storage were identified. No visual or olfactory evidence of contamination was noted during the site walkover, except for the staining of the former floor slab adjacent to the eastern boundary.

The site layout is presented in Figure 2.

2.3 Historical Land Use

The maps at scales of 1:10,000 and 1:2,500 from 1876 to present were reviewed to determine the history of the site. The maps indicate the site was developed as the Borough Infectious Hospital between 1876 and 1898. Land to the west was a brickworks. The site was further extended in 1923. By 1956 additional buildings had been erected in west, and an ambulance station was located in the south east. Land to the south of the site is identified as a council yard. The site layout remained uncharged until 2005.

Correspondence with the Petroleum Officer has shown a 2000 litre diesel tank was present on the east side of the site. The tank was taken out of use in June 1987 and permanently decommissioned by being filled with concrete slurry on 12 October 1987. Records show a second tank to have formally been present adjacent to the diesel tank above ground.

3 ENVIRONMENTAL AND INDUSTRIAL SETTING

3.1 Geology and Hydrogeology

No 1:50,000 British Geological Survey sheets exist for this location although borehole records for adjacent localities show the site to be underlain by clay down to pebble beds. This is likely to be the London Clay and the Harwich Beds. Groundwater is not considered likely to be present in the natural formation, although it may be present in the made ground, perched above the underlying clay.

The site is located over a Non Aquifer, due to the presence of the extremely low permeability potential of the London Clay.

3.2 Hydrology

The nearest surface water feature is Bobbit's Hole, located at its closest 110m from the site. The sea is located 446m to the north and 380m to the south; thus there is the potential for surface run off directly into the sea.

The database indicates there are no surface water abstractions within 1km of the site. The closest water abstraction to the site lies 1709m to the west for the irrigation of agriculture.

3.3 Environmental Sensitive Areas

The site is not located in an environmental sensitive area, the closest being 446m to the north west. A Site of Special Scientific Interest is located 418m to the north.

4 INITIAL CONCEPTUAL MODEL

In accordance with Environment Agency Guidance Document P66 (2000) and BS10175 (Code of Practice for Identification and Investigation of Potentially Contaminated Land), REC Ltd have developed a conceptual model to identify potential sources, migration pathways and receptors within the study area. The conceptual model is based on the findings of the desk study.

4.1 Potential Sources of Contamination

The site walk-over, contact with the regulatory authorities and the clients and the review of the site information has identified the following potential sources of contamination:

- Historical land use as hospital site (on site disposal of incinerator ash).
- Historical land use as council depot and ambulance station.
- Possible below and above ground storage tanks in former council depot.
- Backfill in excavation for adjacent brickworks.
- Imported made ground.
- Onsite migration of hydrocarbons from the transformer substation.

The locations of the potential sources of contamination are presented in Figure 2.

The potential receptors identified are as follows:

- Future users of the site.
- Groundwater (identified in historical wells).
- Surface water (Bobbin's Hole, North Sea).
- Construction materials.

The conceptual model for the site identifying the active pollution linkages is presented in Table 1.

Table 1 - Initial Conceptual Model and Risk Assessment

Source	Potential Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Magnitude of Occurrence	Risk Classification	Comment
Made ground	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Ingestion of contaminated soils and dust Inhalation of dust Contact with contaminated soils	Residents and construction workers	Medium	Medium	Medium Risk	
	Metals (Bo, Cu, Ni, Zn)	Uptake by plants	Planting and soft landscape areas	Medium	Medium	Medium Risk	
	Cyanide	Ingestion of contaminated soils and dust Inhalation of dust	Residents and construction workers	Low	Medium	Low Risk	
	PAH's	Contact with contaminated soils and dust Inhalation of dust Ingestion of contaminated soils and vegetables	Residents and construction workers	Low	Medium	Low Risk	
Historical use as isolation hospital and disposal of ash	Metals (As, Cd, Cr, Pb, Hg, Se, Ni)	Ingestion of contaminated soils and dust Inhalation of dust Contact with contaminated soils	Residents and construction workers	Medium	Medium	Medium Risk	

Source	Potential Contaminant	Potential migration pathway	Potential Receptors	Likelihood of Occurrence	Magnitude of Occurrence	Risk Classification	Comment
	PAH's	Contact with contaminated soils Inhalation of dust Ingestion of contaminated soils and vegetables	Residents and construction workers	Medium	Medium	Medium Risk	
Historical land use as council depot and ambulance station	Hydrocarbons (petrol, diesel and oils)	Ingestion of contaminated soils and dust Inhalation of dust Inhalation of vapours Contact with soils	Residents and construction workers	Medium d	Medium	Medium Risk	From tanks and general use of hydrocarbons
		Vertical and lateral migration	Controlled waters	Medium	Medium	Medium Risk	
		Contact with soils	Construction materials	Medium Likelihood	Medium	Medium Risk	
Organic matter in the made ground used in backfill brickworks	Soil gases (methane and carbon dioxide)	Migration of gas into buildings	Residents	Very low	Medium		Age of waste would generally not contain significant quantities of organic matter. If present full degradation would have occurred.
On site migration from transformer	Hydrocarbons (PCB containing oils)	Ingestion of contaminated soils and dust Inhalation of dust Contact with soils	Residents and construction workers	Medium	Medium	Medium Risk	Oils used in transformers

5 INTRUSIVE SITE INVESTIGATION

5.1 Exploratory Fieldwork

Six intrusive holes were drilled by window sampler on 20th September 2006 to a maximum depth of 3.0m below surface. The sample locations were determined to provide a general assessment of the ground quality beneath the site and the following potential source areas. The sampling locations are illustrated in Figure 3.

WS1 and WS2 – Assessment of made ground beneath the car park and disposal of ash from the hospital;

WS3 – Assessment of contamination originating from the transformer station and of made ground;

WS4 – Assessment of contamination originating from the diesel tank;

WS5 and WS6 – Assessment of made ground and historical use of the site.

Soil samples destined for chemical testing were collected in laboratory prepared jars. Samples for organic analysis were placed in amber glass jars and samples for inorganic analysis were placed in plastic tubs. Samples were transported to the laboratory in cool boxes with blue ice. During the site works recovered soils were geologically logged by an experienced geo-environmental engineer in accordance with BS5930. The geological logs are presented in Appendix II.

On completion of the drilling, window sample wells WS1,WS2, WS3 and WS4 were converted to monitoring wells using 50mm pvc solid and slotted casing and well screening.

To assess soil gas levels (methane, carbon dioxide and oxygen) each monitoring well was sealed and equipped with a gas valve and tap. Four gas monitoring visits were completed on 20th September 2006, 28th September 2006, 6th October 2006 and 13th October 2006 using a calibrated GA 2000 landfill gas analyser. Atmospheric pressure and temperature, differential pressure and flow rates were also recorded.

5.2 Laboratory Testing Programme

5.2.1 Chemical Laboratory Testing

Considering the historical evidence, soil samples were tested for a range of parameters generally consistent with those outlined in the Environment Agency and DoE guidance documentation and determined by the conceptual model and the previous investigation. The following analysis was completed.

Borehole	*Soil*
WS1	1 sample for metals, pH, sulphide, asbestos screen, speciated polyaromatic hydrocarbons (PAH).
WS2	2 samples for metals, pH, sulphide, asbestos screen, speciated polyaromatic hydrocarbons (PAH).
WS3	1 sample for metals, pH, sulphide, asbestos screen, speciated polyaromatic hydrocarbons (PAH), PCBs, banded total petroleum hydrocarbons (DRO).

Borehole	*Soil*
WS4	2 samples for metals, pH, sulphide, asbestos screen, speciated polyaromatic hydrocarbons (PAH), banded total petroleum hydrocarbons (PRO/DRO).
WS5	1 sample for metals, pH, sulphide, asbestos screen, speciated polyaromatic hydrocarbons (PAH), banded total petroleum hydrocarbons (PRO/DRO).
WS6	2 samples for metals, pH, sulphide, asbestos screen, speciated polyaromatic hydrocarbons (PAH), banded total petroleum hydrocarbons (PRO/DRO).

5.3 Summary of Site Investigation Observations

5.3.1 Ground Conditions

The window sample holes indicates the site is underlain by up to 1.3m of made ground consisting of silty clay with occasional gravels of sub-angular flints and tarmac fragments. The made ground beneath the southern portion of the site was thicker and contained fragments of concrete, brick and charcoal. In WS5 a 0.4m thick sandy horizon containing much brick charcoal, slate, ceramics and a floor tiles was identified.

The made ground is underlain by orange brown silty clay with occasion sandy laminations and carbonaceous inclusions. The silty clay becomes firm to stiff with depth. The base of the clay was not identified on the site.

The geological logs are presented in Appendix II

5.3.2 Visual and Olfactory Evidence of Contamination

A fragment of floor tile suspected to contain asbestos was identified in WS5 at 0.1m.

5.3.3 Groundwater Conditions

No groundwater or groundwater seepages were identified during the intrusive investigation. During the gas monitoring, groundwater was identified at approximately 2.0m bgl in WS1 and less than 1.0m bgl in WS2, WS3 and WS4.

5.4 Summary of Laboratory Results

5.4.1 Soil Analytical Results

The analytical work was undertaken by Scientific Analysis Laboratories Ltd of Braintree a MCERT/UKAS accredited laboratory. A summary of the results is presented below and the test certificates are included in Appendix III.

Determinand	Concentrations	Determinand	Concentrations
Total TPH	8.1 - 153 mg/kg	Arsenic	7 - 27mg/kg
DRO C10 – C12	<2 – 4mg/kg	Cadmium	0.1 - 0.9mg/kg
DRO C12 – C16	<2mg/kg	Chromium	14 - 24 mg/kg
DRO C16 – C21	<2 – 17mg/kg	Lead	17 - 908 mg/kg
DRO C21 – C35	<2 – 130mg/kg	Mercury	<0.5 - 1.4 mg/kg
PRO C6-C8	<0.1 mg/kg	Selenium	<1-1 mg/kg

PRO C8-C10	<0.01mg/kg	Nickel	10 40 mg/kg
Total PAH	0.16 – 42.8mg/kg	Zinc	54 - 451 mg/kg
Napthalene	<0.1 – 0.7mg/kg	Boron	<1 - 1 mg/kg
Benzo(a)pyrene	<0.1 – 4.2mg/kg	Copper	18 - 123 mg/kg
Phenols	0.5 - 0.8 mg/kg	Nickel	10 - 40 mg/kg
		Sulphate-Soluble	00.1 - 1.61 mg/kg
		pH	7.7 - 9.7 mg/kg

5.5 Gas Monitoring

Gas monitoring was carried out on the 20th September 2006, 28th September 2006, 6th October 2006 and 13th October 2006. The results indicate methane levels to be less than 0.1% v/v. Carbon dioxide levels ranged between less than 0.1%v/v and 11.9% v/v and oxygen levels ranged between 9.6%v/v – 21.1% v/v. The highest levels of carbon dioxide were detected beneath the northern and southern portions of the site with levels in WS1 up to 11.9% v/v and in WS4 up to 4.5% v/v. In the centre of the site carbon dioxide levels were less than 0.2% v/v. Depleted oxygen levels corresponded to the increased carbon dioxide levels.

Atmospheric pressure during the gas monitoring ranged from 1001 – 1030 mbar. No flows were detected.

The results of the gas monitoring are illustrated in Appendix IV.

6 TIER 1 RISK ASSESSMENT

6.1 Human Health

6.1.1 Soil

In accordance with Contaminated Land Reports (CLR) methodology, the hazards from soil contamination can be assessed against the Contaminated Land Exposure Assessment (CLEA), soil guidance values (SGV). As the layout of the proposed development is not know, it has been assumed the site will be developed as residential with private gardens. At generic assessment level, reference is made to the CLEA SGV values for residential with plant up-take. Where CLEA SGV are absent, REC policy is to make initial reference to the other Tier 1 non-statutory guidance available there include the US EPA medium specific threshold values and the Dutch soil intervention thresholds (Dutch). TPH concentrations have been screened against REC internal screening levels generated by the SNIFFER risk assessment with a maximum, total TPH's concentration of 500mg/kg. Neither US EPA nor the Dutch thresholds have any authority within the UK. See Appendix V for Tier 1 screening values.

The soil analysis results indicate that the following samples analysed are above the Tier 1 screening thresholds set for the site, all other results are below the screening thresholds.

Borehole	*Determinant*	*Concentration*	*Tier 1 threshold*
WS02 (0.2m)	Zinc Total PAH Benzo(a)Pyrene	451 mg/kg 42.8 mg/kg 3.4 mg/kg	300 mg/kg 40mg/kg 1.3mg/kg
WS03 (0.2m)	Benzo(a)Pyrene	2.5 mg/kg	1.3mg/kg
WS04 (0.10m)	Benzo(a)Pyrene	2.8 mg/kg	1.3mg/kg
WS05 (0.10m)	Sulphate (Soluble) Arsenic Lead Asbestos Benzo(a)Pyrene Total PAH	1.61 mg/kg 27mg/kg 908 mg/kg Present 4.2 mg/kg 40.1 mg/kg	1.2 mg/kg 20 mg/kg 450 mg/kg Present 1.3mg/kg 40mg/kg
WS06 (0.10m)	Sulphate (Soluble)	1.51 mg/kg	1.2 mg/kg

In accordance with CLR7, the 95%ile upper confidence level of the measured mean has been compared to the relevant CLEA Soil Guideline Value (SGV), or Tier 1 threshold, to determine whether the degree of contamination detected may be statistically significant. Statistical assessment has been undertaken for samples of the made ground. The result of the statistical assessment is presented in Appendix VI.

6.1.2 Metals

The results of the mean test indicate the 95%ile upper confidence level of the measured mean for the arsenic concentrations of 20.76mg/kg exceeds the SGV of 20mg/kg. The maximum test identified the samples are all from the same normal distribution. The SGV is set at the level at which there is significant probability that there is a significant risk to human health. In addition, the SGV is based on the assumption that 100% of the arsenic present will be bioaccessible and in the form of inorganic arsenic. Research work completed by the EA indicates that typical less than 50% of the arsenic present is usually bioaccessible. As a consequence it is considered the arsenic does not present a significant risk to human health.

The results of the mean test for the lead concentrations indicates the 95%ile upper confidence level of the measured mean of 478mg/kg exceeds the SGV of 450mg/kg. It would appear the samples do not form a normal distribution and as a consequence the use of the CLR 7 statistical analysis is not considered to be appropriate. A review of the results indicates the only sample to exceed the SGV is WS05 (0.1m), where a concentration of 908mg/kg was detected. Inspection of the sample indicates the made ground in this location is different from the other locations and consists of demolition rubble likely created during the clearance of the site. As a consequence it is considered this to be a localised hot spot.

The 95%ile upper confidence level of the measured mean for all other determinants were below their respective SGV or Tier 1 screening levels.

6.1.3 Hydrocarbons

Within the made ground the 95%ile upper confidence level (of the measured mean) does not exceed the relevant Tier 1 screening criteria for Total PAH. Statistical analysis shows the 95% ile as 28.67 mg/kg compared to a Tier 1 threshold of 40mg/kg.

For benzo(a)pyrene the 95% ile upper confidence level (of the measured mean) is 3.62 mg/kg compared to a Tier 1 screening threshold of 1.6 mg/kg. The investigation identified the presence of fragments of tarmac and charcoal in the made ground, both of which contain PAHs and are the likely source of the PAH concentrations. As a consequence it is considered that the PAH concentrations will be bound up in the tarmac and the charcoal and thus will not present a significant risk to human health, but this should be confirmed by further assessment.

TPH concentrations are below there screening levels.

6.1.4 Asbestos

A fragment of floor tile containing chrysotile was identified in WS05 (0.1m). The made ground in this location appears to be demolition rubble originating from the clearance of the buildings. As the asbestos fibres are held within a non-friable material it is likely fibres will not be released at concentrations that would present a risk to human health.

6.2 Soil Gas

The potential impact from biogenic gases has been assessed with reference to standards and guidelines published in CIRIA Report 149 "Protecting Development from Methane" (G.B. Card, 1995), The Building Regulations (1991) and Wilson & Card Reliability and Risk in Gas Protection Design, Ground Engineering, 1999 page 35 and 36.

For risk assessment purposes the maximum carbon dioxide concentration (11.9% v/v) has been used to characterise the soil gas conditions at the site.

Under the CIRIA classification system, the site would be Characteristic Situation 3. CIRIA 149 advised that, in 1995, industry practice included some, or all, of the following precautions in residential properties at Characteristic Situation 3 sites;

- Ventilation of confined spaces within a building,
- Well-constructed suspended or ground slab,
- Low-permeability gas membrane.

- Minimum penetration of ground slab by services
- Passive venting to building – granular filled void

However CIRIA 149 only reflected the range of industry practices in 1995. In a more recent paper Wilson & Card, Ground Engineering, 1999, the author of CIRIA 149 advised that CIRIA 149 was not intended to be applied as a definitive design tool.

Wilson and Card advised that sites where soil gas flux is low, are particularly prone to over designed precautions, if CIRIA 149 is applied as a design tool. Wilson and Card 1999 proposed a revised categorisation system based upon methane or carbon dioxide flow rates and under the revised classification scheme, this site would be Characteristic Situation , requiring:

- Ventilation of confined spaces within a building,
- Well-constructed suspended or ground slab,
- Low-permeability gas membrane.
- Minimum penetration of ground slab by services

6.3 Future Planting Risk Assessment

The results of the soil samples are all below the Tier 1 screening levels for future planting, therefore it is not considered the site will pose a significant risk to future planting.

6.4 Risk to Construction Materials

All concentrations of determinants are at levels that would not present a significant risk to construction materials.

7 REVIEW OF CONCEPTUAL MODEL

In light of the results of the site investigation a review of the initial conceptual model has been completed. A revised conceptual model indicating the active pathways is presented below.

Source	Contaminant	Migration pathway	Receptor
Made ground	Benzo(a)pyrene	Contact with contaminated soils Ingestion of contaminated soils Inhalation of dust	Future residents
	Lead	Contact with contaminated soils Ingestion of contaminated soils and vegetables Inhalation of dust	Future residents
Soil gases	Carbon dioxide	inhalation	Future residents

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

The site is generally "U" shaped and covers an area of 0.4 hectares and is divided up into three portions. The north of the site is currently hard standing and used as a car park. The southern portion of the site is unoccupied and overgrown. A number of floor slabs of former buildings are present. Black staining was noted on a former floor slab located adjacent to the eastern boundary. The third portion of land, located adjacent to the western boundary is occupied by a mobile phone mast. The area is secured by a palisade security fence. No visual or olfactory evidence of contamination was noted during the site walkover, except for the staining of the former floor slab adjacent to the eastern boundary.

The site was developed as the Borough Infectious Hospital between 1876 and 1898. Land to the west was a brickworks. The site was further extended in 1923. By 1956 additional buildings had been erected in west, and an ambulance station was located in the south east. Land to the south of the site is identified as a council yard. The site layout remained uncharged until 2005. Correspondence with the Petroleum Officer has shown a 2000 litre diesel tank was present on the east side of the site. The tank was taken out of use in June 1987 and permanently decommissioned by being filled with concrete slurry on 12 October 1987.

A review of the conceptual model in light of the investigation identified the following active pollution linkages.

A localised area of made ground that appears to be demolition material that is likely to have originated from the clearance of the former structures is present at the south end of the site. The material contained lead concentrations at levels that may present a significant risk to human health. The material also contained an arsenic concentration above the SGV and a fragment of floor tile that contained asbestos fibres. The risk assessment concluded the arsenic and the asbestos would not present a significant risk to human health.

Benzo(a)pyrene concentrations above the tier 1 screening level were identified in the made ground across most of the site. The investigation also identified the presence of fragments of tarmac and charcoal in the made ground, both of which contain PAHs and are the likely source of the PAH concentrations. As a consequence it is considered that the PAH concentrations will be bound up in the tarmac and the charcoal and thus will not present a significant risk to human health, but this should be confirmed by further assessment.

The investigation identified the presence of carbon dioxide at levels that may present a significant risk to human health.

No risk to controlled waters, future planting or construction materials were identified.

8.2 Recommendations

From the results of the investigation it is recommended that the demolition material identified in WS5, together with any other material identified during the development of the site should be remediated if there area is to form soft landscaping or private gardens. Remediation should consist of the excavation to the base of the demolition material and removal from site. Excavated soils should be disposed of to site licensed to accept this type of material. Other solutions may be the provision of a barrier of clean inert soils to ensure sufficient capping of the material is provided.

Due to the presence of the benzo(a)pyrene concentrations it is recommended further assessment is undertaken to ensure the concentrations are from the presence of the tarmac and charcoal. Should the assessment indicate the concentrations are not bound up and risk assessment indicates a risk remediation

made be required.

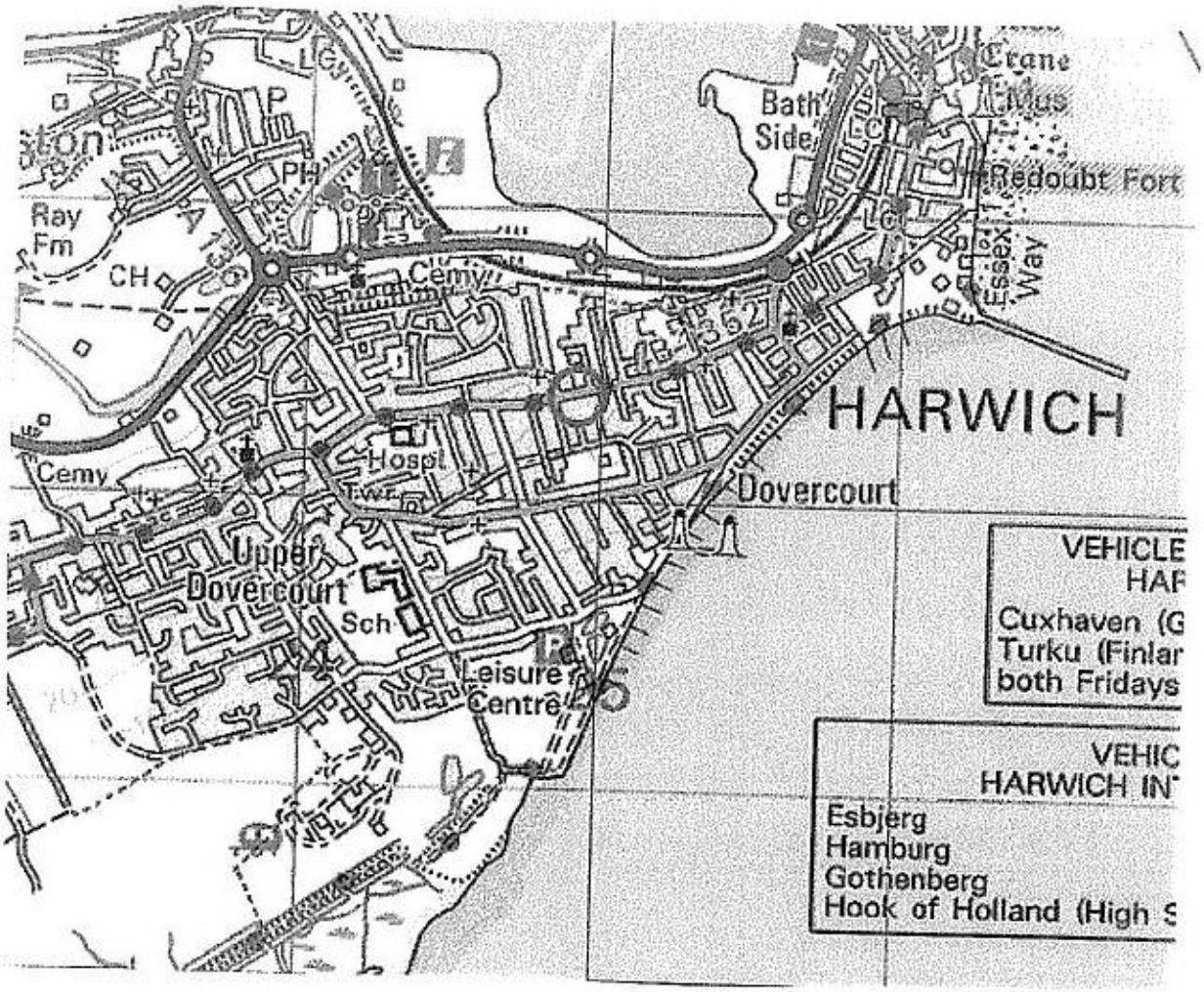
It is recommended the decommissioned underground storage tank should be removed. Following the removal of the tank, the excavation should be validated and backfilled with clean inert soils.

It is recommended the following gas protection measures are incorporated into the building on site in accordance with CIRIA 149;

- Ventilation of confined spaces within a building and any under floor voids,
- Well-constructed ground slab and minimum penetration of slab by services,
- Low-permeability gas membrane resistant to hydrocarbons sealed around services.
- Minimum penetration of ground slab by services.

During the development of the site, should evidence of contamination be identified, it is recommended that an environmental consultant be contacted.

FIGURES



Project Name: Former isolation hospital, Main Road, Dovercourt		
Project Number: 50398		
Title: Site Location Plan		
Figure No.: 1	Version No.: 1.1	Scale: NTS
Dwr No.: 50398/rpt1.1/F1	Date: Aug 2006	Drawn by: PM

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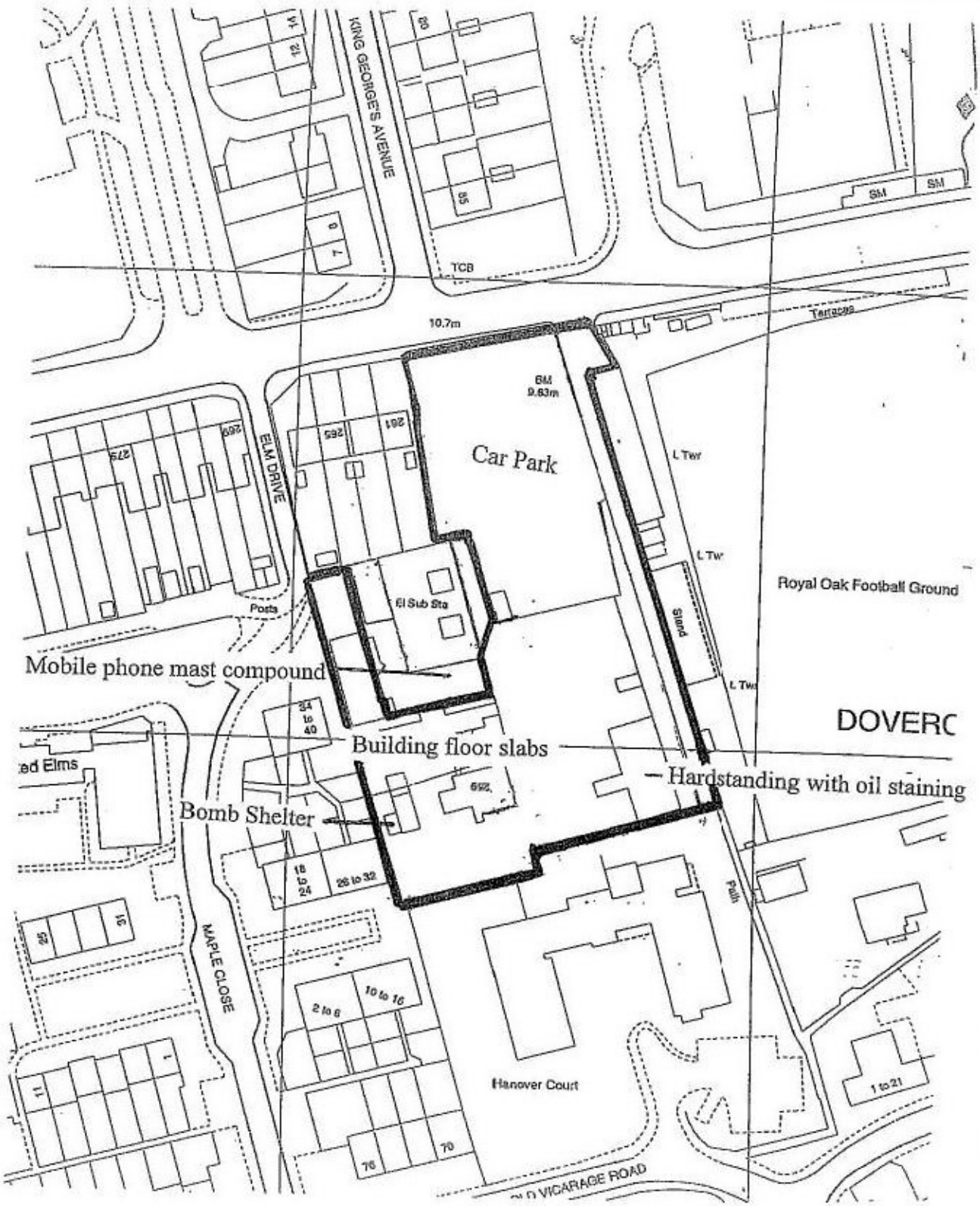

Project Name: Former Isolation Hospital, Main Road, Dovercourt		
Project Number: 50398		
Title: Site Layout Plan		
Figure No.: 2	Version No.: 1.1	Scale: NTS
Dwr No.: 50398/rpt1.1/F2	Date: Aug 2006	Drawn by: PM

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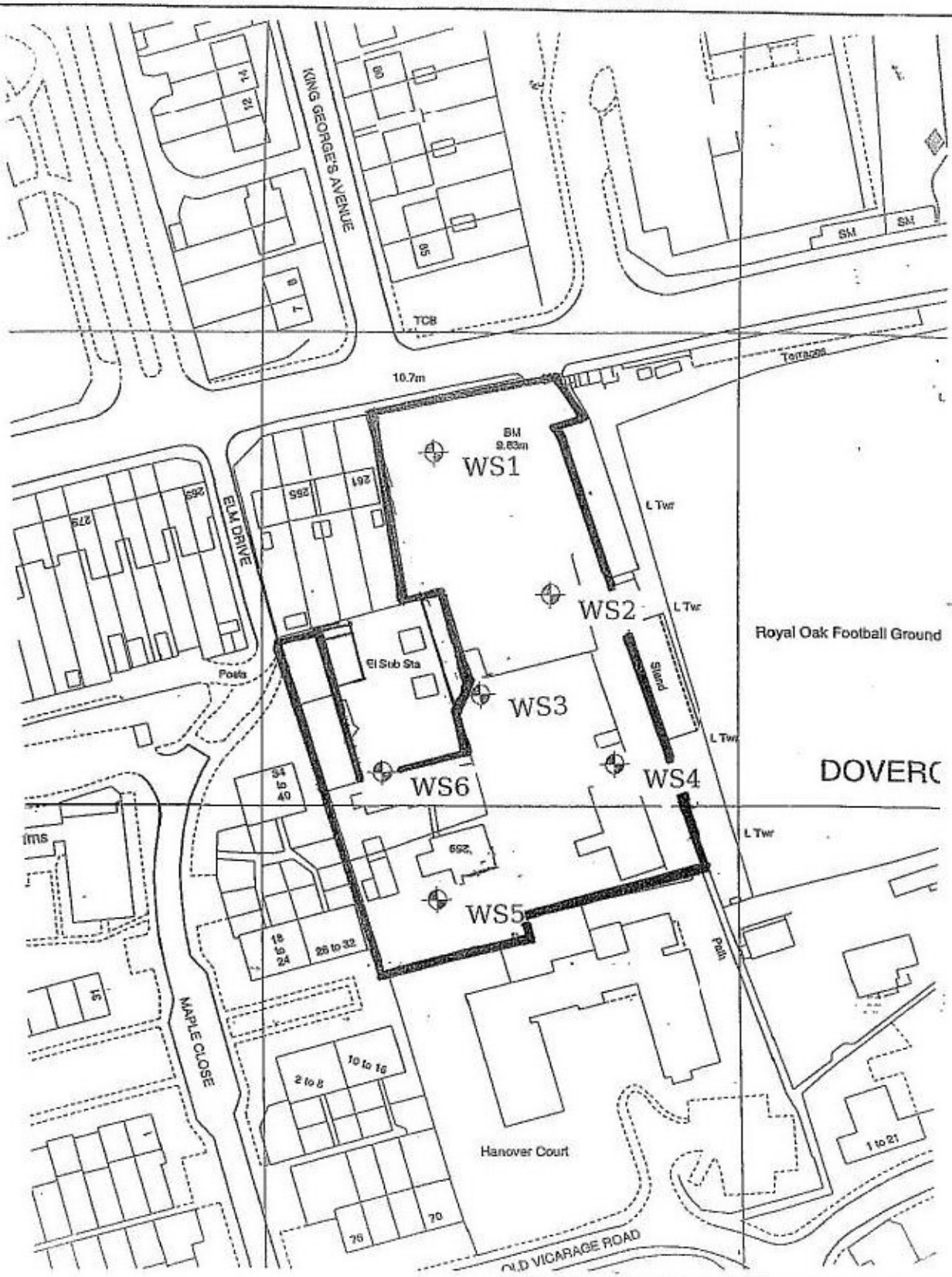


Project Name: Former Isolation Hospital, Main Road, Dovercourt		
Project Number: 50398		
Title: Sample Location Plan		
Figure No.: 3	Version No.: 1.1	Scale: NTS
Dwr No.: 50398/rpt2.1/F3	Date: Oct 2006	Drawn by: PM

RESOURCE & ENVIRONMENTAL CONSULTANTS
3 Crittall Drive
Springwood Industrial Estate
Braintree
Essex CM7 2RT
[redacted]

APPENDIX I

RISK CLASSIFICATION

Risk Classification

Classification of Consequence

Classification	Definition	Examples
Severe	Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA. Short term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. A short term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short term human health risk if buildings are occupied).
Medium	Chronic damage to human health ("significant harm" as defined in the DETR, 2000). Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem. (note: the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	Concentrations of a contaminant from site exceeds the generic, or site specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer. Death of a species within a designated nature reserve.
Mild	Pollution of non-sensitive water resource. Significant damage to buildings/structures and crops ("significant harm" as defined in the DETR, 2000). Damage to sensitive buildings/structures or the environment.	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as Personal Protective Clothing, etc). Easily repairable effects of damage to buildings/structures.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in landscaping scheme. Discolouration of concrete.

Classification of probability

Classification	Definition
High Likelihood	There is a pollution linkage and an event which would either appear very likely in the short term and almost inevitable over the long term, or, there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in thte short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long tenn,

Comparison of consequence against probability

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High Likelihood**	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

APPENDIX II

BOREHOLE RECORDS

REC
Resource & Environmental Consultants Ltd
3 Crittal Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01376 528980

Window Sample: WS1 | **Project Number:** 50398

Date: 20.09.2006 | **Logged By:** TM

Total Depth: 3.0m | **Client:** Tendring District Council

Project Location: Former Isolation Hospital, Main Road, Dovercourt

Elevation (m)	Depth (m)	Lithologic Symbol	Description/Classification of Materials	Sample Type	Sample Depth (m)	Remarks
0.0	0		Ground Surface			
			MADE GROUND Tarmac	G, D	0.2	
-0.4			MADE GROUND Dark brown silty clay with occasional gravel of sub-angular flint and tarmac fragments.	G, D	0.5	
			Silty CLAY Orange brown silty CLAY.	D	0.8	
-1.2	1					
			CLAY Firm to stiff orange brown CLAY. - Becoming stiff below 1.8m with occasional bands of orange brown sand.	D	1.5	
	2					
				D	2.5	
-3.0	3		End of Log			
	4					
	5					

B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes: Dry. 1m solid standpipe, 2m slotted standpipe with gas tap fitted.

REC
Resource & Environmental Consultants Ltd
3 Crittal Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01376 528980

Window Sample: WS2 | **Project Number:** 50398

Date: 20.09.2006 | **Logged By:** TM

Total Depth: 3.0m | **Client:** Tendring District Council

Project Location: Former Isolation Hospital, Main Road, Dovercourt

Elevation (m)	Depth (m)	Lithologic Symbol	Description/Classification of Materials	Sample Type	Sample Depth (m)	Remarks
0.0	0		Ground Surface			
-0.3			MADE GROUND Tarmac	G, D	0.2	
			MADE GROUND Dark brown very silty clay with occasional gravel of sub-angular flint and brick and tarmac fragments.	G, D	0.7	
	1		Silty CLAY Orange brown, silty CLAY with occasional carbonaceous inclusions and fine laminations. - Strong alluvial odour.	D	1.2	
-1.5			CLAY Firm to stiff orange brown CLAY. - Becoming stiffer to base.	D	1.6	
	2			D	2.6	
-3.0	3		End of Log			
	4					
	5					

B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes: Dry. 1m solid standpipe, 2m slotted standpipe with gas tap fitted.

REC
Resource & Environmental Consultants Ltd
3 Crittal Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01376 528980

Window Sample: WS3

Project Number: 50398

Date: 20.09.2006

Logged By: TM

Total Depth: 3.0m

Client: Tendring District Council

Project Location: Former Isolation Hospital, Main Road, Dovercourt

Elevation (m)	Depth (m)	Lithologic Symbol	Description/Classification of Materials	Sample Type	Sample Depth (m)	Remarks
0.0	0		Ground Surface			
			MADE GROUND Dark brown very silty subsoil with occasional gravel of sub-angular flint and tarmac fragments.	G, D	0.2	
-0.4			Silty CLAY Orange brown, silty CLAY with occasional carbonaceous inclusions and fine laminations. - Strong alluvial odour.	G, D	0.8	
-0.9	1		CLAY Firm to stiff orange brown CLAY. - Becoming stiffer to base. Sandy layer at 3.0m	D	1.5	
	2			D	2.5	
-3.0	3		End of Log	D	3.0	
	4					
	5					

B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes: Dry. 1m solid standpipe, 2m slotted standpipe with gas tap fitted.

REC
Resource & Environmental Consultants Ltd
3 Crittal Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01376 528980

Window Sample: WS4 | **Project Number:** 50398

Date: 20.09.2006 | **Logged By:** TM

Total Depth: 3.0m | **Client:** Tendring District Council

Project Location: Former Isolation Hospital, Main Road, Dovercourt

Elevation (m)	Depth (m)	Lithologic Symbol	Description/Classification of Materials	Sample Type	Sample Depth (m)	Remarks
0.0	0		Ground Surface			
			MADE GROUND Silty sand, many fragments of concrete, charcoal and brick and scrap metal (Aluminium) with some sub-angular to sub rounded gravels of flint	G, D	0.1	
-0.5			MADE GROUND Silty clayey sand with strong odour of concrete and carbonaceous material.	G, D	0.8	
-0.8	1		CLAY Orange brown, silty CLAY with occasional carbonaceous inclusions and fine laminations. - Strong alluvial odour.	D	1.4	
-1.6	2		CLAY Firm to stiff orange brown CLAY. - Becoming stiff at 2.2m. Occasional sandy pockets.	D	2.0	
				D	2.5	
-3.0	3		End of Log			
	4					
	5					

B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes: Dry. 1m solid standpipe, 2m slotted standpipe with gas tap fitted.

REC
Resource & Environmental Consultants Ltd
3 Crittal Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01376 528980

Window Sample: WS5 **Project Number:** 50398

Date: 20.09.2006 **Logged By:** TM

Total Depth: 3.0m **Client:** Tendring District Council

Project Location: Former Isolation Hospital, Main Road, Dovercourt

Elevation (m)	Depth (m)	Lithologic Symbol	Description/Classification of Materials	Sample Type	Sample Depth (m)	Remarks
0.0	0		Ground Surface			
			MADE GROUND Loose sand with much brick, charcoal, slate and ceramics, rootlets.	G, D	0.1	
-0.4			MADE GROUND Orange brown silty CLAY.	G, D	0.8	
-1.3	1		CLAY Orange brown firm to stiff CLAY with occasional laminations and layers of sand.	D	1.4	
	2			D	2.5	
-3.0	3		End of Log			
	4					
	5					

B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes: Dry. Back filled with arisings

REC
Resource & Environmental Consultants Ltd
3 Crittal Drive
Springwood Industrial
Estate
Braintree
Essex
CM7 2RT
Tel: 01376 554400
Fax: 01376 528980

Window Sample: WS6

Project Number: 50398

Date: 20.09.2006

Logged By: TM

Total Depth: 3.0m

Client: Tendring District Council

Project Location: Former Isolation Hospital, Main Road, Dovercourt

Elevation (m)	Depth (m)	Lithologic Symbol	Description/Classification of Materials	Sample Type	Sample Depth (m)	Remarks
0.0	0		Ground Surface			
			MADE GROUND Dark brown silty subsoil with frequent gravel of sub-angular brick, flint and tarmac fragments. - 50mm concrete at base.	G, D	0.1	
-0.5			Silty CLAY Orange brown silty CLAY.	D	0.6	
	1			G, D	1.3	
-1.5			CLAY Firm to stiff orange brown CLAY. - Becoming stiff below 1.8m with occasional bands of orange brown sand.	D	1.8	
	2			D	2.5	
-3.0	3		End of Log			
	4					
	5					

B. Bulk, D. Disturbed, W. Water, G. Glass Jar, PID. Photo Ionisation Detector (ppm), V. 40ml Vial

Notes: Dry. Back filled with arisings.

APPENDIX III

LABORATORY RESULTS AND CHAIN OF CUSTODY FORMS

Scientific Analysis Laboratories Ltd

Report Number:	85173
Date:	6 October 2006
Client:	Resource & Environmental Consultancy 3 Crittall Drive Springwood Industrial Estate Braintree Essex CM7 2RT
Client Contact:	Phil Miles
Client Job Reference:	Former Isolation Hospital – 50398
Date Samples Received at SAL:	21 September 2006
Date Analysis Started:	22 September 2006

The results reported relate to samples received at the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS or MCERTS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs

Key to symbols used in this report:
U: Analysis is UKAS accredited
N: Analysis is not UKAS accredited
W: Analysis was performed at another SAL Laboratory
S: Analysis was subcontracted
M: Analysis is MCERTS accredited

MCERTS 1650 UKAS TESTING 1650

Report Written By: -

[redacted]

Claire Brown
Project Manager

Report Checked & Authorised By: -

[redacted]

Ben Wilding
Laboratory Supervisor

Report Number: 85173

Client Job Reference: Former Isolation Hospital 50398

				SAL Ref.		85173/001	85173/006	85173/007	85173/011	85173/016	85173/018	85173/021	85173/025	85173/026
				Client Ref.		WS01	WS02	WS02	WS03	WS04	WS04	WS05	WS06	WS06
				Depth (m)		0.20	0.20	0.70	0.20	0.10	1.40	0.10	0.10	0.60
				Sample Type		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Determinand	Technique	Units	Analysis State	LOD	Symbol									
pH (2:1 water: soil extract)	ISE	units	AD	-	M	8.1	8.0	7.7	8.0	8.1	9.0	9.7	9.2	7.7
Total Cyanide	colorimetry	mg/kg	AD	1	M	<1	<1	<1	<1	<1	<1	<1	<1	<1
Monohydric Phenols	colorimetry	mg/kg	AD	0.5	M	<0.5	0.8	<0.5	0.5	<0.5	<0.5	0.6	0.6	0.5
Sulphate (water soluble, 2:1)	ICP	g/l	AD	0.01	M	0.50	0.17	0.03	0.20	0.01	0.12	1.61	1.51	0.17
Sulphide	colorimetry	mg/kg	AD	10	N	265	26	<10	<10	<10	53	<10	<10	<10
Copper ("Total")	ICP	mg/kg	AD	2	M	38	123	18	38	39	27	60	24	25
Zinc ("Total")	ICP	mg/kg	AD	2	M	87	451	56	62	141	54	287	133	54
Nickel ("Total")	ICP	mg/kg	AD	0.5	M	40	23	20	23	11	21	19	10	14
Arsenic ("Total")	ICP	mg/kg	AD	2	M	16	15	9	15	7	8	27	12	7
Mercury ("Total")	ICP	mg/kg	AD	0.5	U	0.5	1.4	0.5	0.5	<0.5	<0.5	<0.5	0.8	<0.5
Lead ("Total")	ICP	mg/kg	AD	2	M	98	447	17	81	289	27	908	68	32
Cadmium ("Total")	ICP	mg/kg	AD	0.1	M	0.4	0.9	0.2	0.2	0.5	0.1	0.4	0.8	0.4
Chromium ("Total")	ICP	mg/kg	AD	0.5	M	17	24	23	15	14	23	21	15	16
Selenium ("Total")	ICP	mg/kg	AD	1	U	1	<1	<1	<1	<1	<1	1	<1	<1
Boron (Water Soluble)	ICP	mg/kg	AD	1	N	1	1	1	1	<1	<1	<1	1	1
Asbestos Screen	Visual	-	AD	-	N	ND	ND	ND	ND	ND	ND	Positive	ND	ND

Notes: -

AD: Analysis carried out on air dried samples after removal of stones, and corrected for loss at 105 °C

"Total" metals determined on aqua-regia extract of soil

ND denotes None Detected

Report Number: 85173

Client Job Reference: Former Isolation Hospital – 50390

				SAL Ref.		85173/001	85173/006	85173/007	85173/011	85173/016	85173/018	85173/021	85173/025	85173/026
				Client Ref.		WS01	WS02	WS02	WS03	WS04	WS04	WS05	WS06	WS06
				Depth (m)		0.20	0.20	0.70	0.20	0.10	1.40	0.10	0.10	0.60
				Sample Type		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Determinand	Technique	Units	Analysis State	LOD	Symbol									
Naphthalene	GC MS	mg/kg	AR	0.1	W M	0.3	0.6	<0.1	0.7	0.3	<0.1	0.3	<0.1	<0.1
Acenaphthylene	GC MS	mg/kg	AR	0.1	W U	0.2	0.4	<0.1	0.3	0.4	<0.1	0.5	<0.1	<0.1
Acenaphthene	GC MS	mg/kg	AR	0.1	W M	<0.1	0.1	<0.1	0.3	0.5	<0.1	<0.1	<0.1	<0.1
Fluorene	GC MS	mg/kg	AR	0.1	W M	0.4	0.3	<0.1	0.3	0.6	<0.1	<0.1	<0.1	<0.1
Phenanthrene	GC MS	mg/kg	AR	0.1	W M	2.6	3.4	<0.1	0.6	3.5	1.1	1.8	0.3	<0.1
Anthracene	GC MS	mg/kg	AR	0.1	W U	1.1	0.8	<0.1	0.5	1.5	0.5	0.8	0.1	<0.1
Fluoranthene	GC MS	mg/kg	AR	0.1	W M	4.1	7.2	<0.1	1.9	7.0	2.1	5.1	0.7	<0.1
Pyrene	GC MS	mg/kg	AR	0.1	W M	3.8	6.3	<0.1	2.6	6.1	1.8	4.7	0.6	<0.1
Benzo(a)Anthracene	GC MS	mg/kg	AR	0.1	W M	2.0	3.9	<0.1	1.3	2.9	1.1	4.3	0.2	<0.1
Chrysene	GC MS	mg/kg	AR	0.1	W M	1.9	4.4	<0.1	1.5	2.8	0.9	4.3	0.3	<0.1
Benzo(b/k)Fluoranthene	GC MS	mg/kg	AR	0.1	W M	3.3	7.5	<0.1	5.0	5.4	1.7	8.6	0.3	<0.1
Benzo(a)Pyrene	GC MS	mg/kg	AR	0.1	W M	1.6	3.4	<0.1	2.5	2.8	0.8	4.2	0.1	<0.1
Indeno(123cd)pyene	GC MS	mg/kg	AR	0.1	W M	0.9	2.0	<0.1	1.6	1.7	0.4	2.4	0.1	<0.1
Dibenz(ah)anthracene	GC MS	mg/kg	AR	0.1	W M	0.3	0.1	<0.1	0.4	0.4	0.1	0.2	<0.1	<0.1
Benzo(ghi)perylene	GC MS	mg/kg	AR	0.1	W M	1.1	2.4	<0.1	1.8	2.2	0.5	2.7	0.1	<0.1

Notes: -

AR: Analysis carried out on sampes 'As Received'

Reported results are corrested to a 105°C dry weight basis

Report Number: 85173

Client Job Reference: Former Isolation Hospital – 50390

				SAL Ref.		85173/011	85173/016	85173/018	85173/021	85173/025	85173/026
				Client Ref.		WS03	WS04	WS04	WS05	WS06	WS06
				Depth (m)		0.20	0.10	1.40	0.10	0.10	0.60
				Sample Type		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Determinand	Technique	Units	Analysis State	LOD	Symbol						
Petrol Range Organics											
C6 - C8	GCMS	mg/kg	AR	0.01	W N	-	<0.01	<0.01	<0.01	<0.01	<0.01
C8 - C10	GCMS	mg/kg	AR	0.1	W N	-	<0.1	<0.1	<0.1	<0.1	<0.1
Diesel Range Organics											
C10-C12	GC/FID	mg/kg	AR	2	U	4	<2	<2	<2	<2	<2
C12-C16	GC/FID	mg/kg	AR	2	U	<2	<2	<2	<2	<2	<2
C16-C21	GC/FID	mg/kg	AR	2	U	17	13	<2	4	<2	<2
C21-C35	GC/FID	mg/kg	AR	2	U	130	29	<2	70	<2	<2
Total PCB's	GC MS	ug/kg	AR	0.05	W U	11	-	-	-	-	-

Notes: - AR: Analysis carried out on sampes 'As Received'

Report Number: 85173

Client Job Reference: Former Isolation Hospital – 50398

APPENDIX

Sample Location	Former Isolation Hospital – 50398
Date/ Time of Sampling	19th September 2006
On-site preservation/ stabilization	N/A

SAL Sample Ref	Client Sample Ref	Sample Description/ Texture	% Stones Removed (>2mm)
85173/001	*WS01 0.20m*	Silty Clay	5.1
85173/006	*WS02 0.20m*	Silty Clay	<5
85173/007	*WS02 0.70m*	Clay	<5
85173/011	*WS03 0.20m*	Sandy Silt	5.5
85173/016	*WS04 0.10m*	Silty Sand	<5
85173/018	*WS04 1.40m*	Clay	<5
85173/021	*WS05 0.10m*	Brick Fill	<5
85173/025	*WS06 0.10m*	Brick Fill	<5
85173/026	*WS06 0.60m*	Clay	<5

Subcontracted tests were performed by:	SAL Manchester

Scientific Analysis Laboratories Ltd

Report Number : 85173/A

Date: 24 October 2006

Client:
Resource & Environmental Consultancy
3 Crittall Drive
Springwood Industrial Estate
Braintree
Essex
CM7 2RT

Client Contact: Phil Miles
Client Job Reference: Former Isolation Hospital – 50398

Date Samples Received at SAL: 21 September 2006
Date Analysis Started: 24 October 2006

The results reported relate to samples received at the Laboratory
The identification of non asbestos fibres, opinions and interpretations expressed herein are all Outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the Laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs
Identification by optical microscopy in accordance with documented in-house method ASB/I1, In accordance with HSG248 The Analyst Guide.

NAD - No Asbestos Detected
T - Trace As Defined in HSG248

For information the following table gives MDHS 100 Percentage contents for typical asbestos Containing materials:-

Asbestos Cement	10-25%
Asbestos Insulating Board	15-40%
Insulation	Up to 100%
Textured Coating	3-5%
Asbestos Coating	55-85%
Asbestos Binded Product	1-10%
Floor Tile	7%
Thermoplastic Floor Tile	Up to 25%
Millboard	37-97%

UKAS TESTING
1650

Report Written By:
[redacted]
Sarah Bell
Asbestos Technician

Report Checked & Authorised By: -
[redacted]
Dave Smith
Laboratory Manager

Report Number: 85173/A
Client Job Reference: Former Isolation Hospital – 50398

Sample Number	Client Reference	Location	Element	Asbestos Identification Type	Comments & other fibres
85173/021	WS05 @ 0.10m	N/A	Floor Tile Ex Soil sample 85173/021	Chrysotile	Both in Tile & Adhesive Weight of Soil 557.5g Weight of Floor Tile 8.0g

Scientific Analysis Laboratories Ltd

3 Crittall Drive, springwood Industrial Estate, Braintree, Essex, CM7 2RT.

Sampling and Chain of Custody Form

Client name and address:
REC (Braintree)

REC

tel:
Fax:

Analysis Requested

Date Sampled	Client ID	Depth (m)	Sample Matrix (s w l)	SAL Ref:	REC SUITE 1	SPEC PAH	Asb. Scr.	Bonded TPM DRO	Bonded TPM PRO/DRO	PCB's						Comments / soil description
19/9/06	WS01	0.2	S		✓	✓	✓									D + G
		0.5	S													D + G
		0.8	S													D
		1.5	S													D
		2.5	S													D
	WS02	0.2	S		✓	✓	✓									D + G
		0.7	S		✓	✓	✓									D + G
		1.2	S													D
		1.6	S													D
		2.6	S													D
	WS03	0.2	S		✓	✓	✓	✓	✓							D + G
		0.8	S													D + G
		1.5	S													D
		2.5	S													D
		3.0	S													D
	WS04	0.1	S		✓	✓	✓	✓								D+G
		0.8	S													D+G
		1.4	S		✓	✓	✓	✓								D
		2.0	S													D
		2.5	S													D

Turnaround required: (10day) 5day 3day
other turnaround (specify)

Accreditation Requirements (circle below)
non-UKAS UKAS (MCERTS)

Project Name: FORMER ISOLATION HOSPITAL
Project Code: 503998
PO Number:
Project Manager: P. MILES

Date received at SAL: 21/9/06 (Lab use only)
Time received:
Date entered:
Samples accepted by:
Prepared by:
Soil sampled by:
Storage box:

Drying requirements: (Lab use only)
LAB Subcontract
OSAR
30
75

lp/worksheet LER/PREP - requirements
issue-2- 08/07/05

Tel: 01376 328646
Fax: 01376 552923

Scientific Analysis Laboratories Ltd

3 Crittall Drive, springwood Industrial Estate, Braintree, Essex, CM7 2RT.

Sampling and Chain of Custody Form

Page 2 of 2

Client name and address:
REC (Braintree)

REC

tel:
Fax:

Date Sampled	Client ID	Depth (m)	Sample Matrix (s w l)	SAL Ref:	REC Suite 1	SPEC PAH	Asb. Scr.	Banded TPH DRO	Banded TPH PRO/DRO
19/9/06	WS05	0.1	S		✓	✓	✓		✓
↓	↓	0.7	S						
↓	↓	1.4	S						
↓	↓	2.5	S						
↓	WS06	0.1	S		✓	✓	✓		✓
↓	↓	0.6	S		✓	✓	✓		✓
↓	↓	1.3	S						
↓	↓	1.8	S						
	↓	2.5	S						

Turnaround required: (1day) 5day 3day
other turnaround (specify)

Accreditation Requirements (circle below)
non-UKAS UKAS (MCERTS)

Comments / soil description

Project Name: FORMER ISOLATION HOSPITAL
Project Code: 502398
PO Number:
Project Manager: D. MILES

Date received at SAL: 21/9/06 (Lab use only)
time received:
Date entered:
Samples accepted by:
Prepared by:
Subsampled by:
Storage box:

Drying requirements: (Lab use only)
LAB Subcontract
OSAR
30
75

lp/worksheet LER/PREP - requirements
issue-2- 08/07/05

Tel: 01376 328646
Fax: 01376 552923

APPENDIX IV

GAS MONITORING RESULTS

REPORT NO. 50398

Client	Tendring Borough Council
Location	Former Isolation Hospital, Dovercourt
Date of Sampling	20th September 2006
Temperature	22 C
Weather	Sunny
Wind	Moderate

SAMPLE LOCATION	APPROX. DEPTH (m)	Gas Readings % Volume CH4	CO2	O2	MAX DEPTH OF BOREHOLE (M)	MAX DEPTH TO WATER (m)	BAROMETRIC PRESSURE	FLOW (m/sec)	DRY OR WATER
WS1	MAX	<0.1	7.9	14.7					
	STEADY	<0.1	7.9	14.7	2.78	-	1010	<0.01	DRY
WS2	GL	<0.1	<0.1	20.4					
	0.5	<0.1	<0.1	20.4					
	1.0	<0.1	0.1	20.4					
	1.5	0.3	3.8	19.3					
	2.0	0.3	3.6	19.4					
	2.5	0.3	2.6	19.7					
	3.0	0.2	2.3	19.8	3.0	-	1010	<0.01	Damp at base
WS3	MAX	<0.1	0.3	20.8					
	STEADY	<0.1	0.3	20.8	2.855	-	1009	<0.01	DRY
WS4	MAX	<0.1	0.9	17.0					
	STEADY	<0.1	0.9	17.0	2.776	-	1009	<0.01	DRY
WS5	GL	<0.1	<0.1	20.3					
	0.5	<0.1	0.7	19.9					
	1	<0.1	0.7	19.9	3.0	-	1010	<0.01	DRY
WS6	GL	<0.1	<0.1	20.7					
	0.5	<0.1	<0.1	20.7					
	1	<0.1	<0.1	20.7	1.06	-	1010	<0.01	DRY

Gas readings performed using Analox 1200 infra red gas analyser.
CH4 - Methane.
CO2 - Carbon dioxide.
O2 - Oxygen. < denotes less than.

Report checked and authorised by:

Philip Miles
Associate Director

[redacted]

Tim Mitchell
Consultant

[redacted]

REPORT NO. 50398

Client	Tendring Borough Council
Location	Former Isolation Hospital, Dovercourt
Date of Sampling	28th September 2006
Temperature	22 C
Weather	Sunny
Wind	Moderate

SAMPLE LOCATION	APPROX. DEPTH (m)	Gas Readings % Volume			MAX DEPTH OF BOREHOLE (M)	MAX DEPTH TO WATER (m)	BAROMETRIC PRESSURE	FLOW (m/sec)	DRY OR WATER
		CH4	CO2	O2					
WS1	MAX	<0.1	11.9	10.1					
	STEADY	<0.1	11.9	10.1	2.75	-	1007	<0.01	DRY
WS2	MAX	<0.1	0.1	21.0					
	STEADY	<0.1	0.1	21.0	2.78	0.77	1007	<0.01	WET
WS3	MAX	<0.1	<0.1	21.0					
	STEADY	<0.1	<0.1	21.0	2.08	0.57	1007	<0.01	WET
WS4	MAX	<0.1	1.4	19.1					
	STEADY	<0.1	1.4	19.1	2.74	0.80	1007	<0.01	WET

Gas readings performed using Analox 1200 infra red gas analyser.
CH4 - Methane.
CO2 - Carbon dioxide.
O2 - Oxygen.
< denotes less than.

Report checked
and authorised by:

[redacted]

Philip Miles
Associate Director

[redacted]

Tim Mitchell
Consultant

REPORT NO. 50398

Client	Tendring Borough Council
Location	Former Isolation Hospital, Dovercourt
Date of Sampling	6th October 2006
Temperature	16C
Weather	Rainy & Overcast
Wind	Low

SAMPLE LOCATION	APPROX. DEPTH (m)	Gas Readings % Volume CH4	CO2	O2	MAX DEPTH OF BOREHOLE (M)	MAX DEPTH TO WATER (m)	BAROMETRIC PRESSURE	FLOW (m/sec)	DRY OR WATER
WS1	MAX	<0.1	11.0	9.6					
	STEADY	<0.1	11.0	9.6	2.76	2.55	1001	<0.01	WET
WS2	MAX	<0.1	0.1	20.9					
	STEADY	<0.1	0.1	20.9	2.78	0.75	1001	<0.01	WET
WS3	MAX	<0.1	0.1	21.1					
	STEADY	<0.1	0.1	21.1	2.86	0.74	1001	<0.01	WET
WS4	MAX	<0.1	4.5	14.7					
	STEADY	<0.1	4.5	14.7	2.74	0.99	1001	<0.01	WET

Gas readings performed using Analox 1200 infra red gas analyser.
CH4 - Methane.
CO2 - Carbon dioxide.
O2 - Oxygen.
< denotes less than.

Report checked
and authorised by:

[redacted]
Philip Miles
Associate Director

[redacted]
Tim Mitchell
Consultant

REPORT NO. 50398

Client	Tendring Borough Council
Location	Former Isolation Hospital, Dovercourt
Date of Sampling	13th October 2006
Temperature	17C
Weather	Sunny
Wind	Low

SAMPLE LOCATION	APPROX. DEPTH (m)	Gas Readings % Volume CH4	CO2	O2	MAX DEPTH OF BOREHOLE (M)	MAX DEPTH TO WATER (m)	BAROMETRIC PRESSURE	FLOW (m/sec)	DRY OR WATER
WS1	MAX	<0.1	8.3	12.9					
	STEADY	<0.1	8.3	12.9	2.76	2.30	1030	<0.01	WET
WS2	MAX	<0.1	0.1	20.7					
	STEADY	<0.1	0.1	20.7	2.77	0.80	1030	<0.01	WET
WS3	MAX	<0.1	0.1	20.8					
	STEADY	<0.1	0.1	20.8	2.86	0.83	1030	<0.01	WET
WS4	MAX	<0.1	0.1	21.0					
	STEADY	<0.1	0.1	21.0	2.75	0.98	1030	<0.01	WET

Gas readings performed using Analox 1200 infra red gas analyser.
CH4 - Methane.
CO2 - Carbon dioxide.
O2 - Oxygen.
< denotes less than.

Report checked
and authorised by:

[redacted]
Philip Miles
Associate Director

[redacted]
Tim Mitchell
Consultant

APPENDIX V

TIER 1 SCREENING VALUES

Tier 1 Soil Toxicity Assessment Criteria - Residential with Plant Uptake

Analyte	Units	Tier 1 Value	Source Of Tier 1 Value
Arsenic	mg/kg	20	Soil guideline value (residential with plant uptake), Environment Agency
Cadmium	mg/kg	1(pH6) 2(pH7) 8(pH8)	Soil guideline value (residential with plant uptake), Environment Agency
Chromium	mg/kg	130	Soil guideline value (residential with plant uptake), Environment Agency
Lead	mg/kg	450	Soil guideline value (residential with plant uptake), Environment Agency
Mercury	mg/kg	8	Soil guideline value (residential with plant uptake), Environment Agency
Selenium	mg/kg	35	Soil guideline value (residential with plant uptake), Environment Agency
Nickel	mg/kg	50	Soil guideline value (residential with plant uptake), Environment Agency
Boron (Water Sol)	mg/kg	1	USEPA for residential soils
Copper	mg/kg	130	Dutch Intervention Limit (Serious Risk Criteria Human)
Zinc	mg/kg	300	Dutch Intervention Limit (Serious Risk Criteria Human)
Phenols	mg/kg	150	Soil guideline value (residential with plant uptake), Environment Agency (2.5% SOM)
PAH	mg/kg	40	Dutch Intervention Value
Benzo(a)pyrene	mg/kg	1.6	CLEA UK - Residential without plant up-take
Naphthalene	mg/kg	17	Soil guideline value (residential with plant uptake), Environment Agency (2.5% SOM)
TPH	mg/kg	500	EA classification of soils as inert for waste disposal purposes.

Tier 1 Soil Toxicity Assessment Criteria for Future Planting

Analyte	Units	Tier 1 Value	Source Of Tier 1 Value
Nickel	mg/kg	210	Dutch Intervention Limit (Serious Risk Criteria ecotoxicological)
Boron (Water Sol)	mg/kg	3	Former ICRCL
Copper	mg/kg	190	Dutch Intervention Limit (Serious Risk Criteria ecotoxicological)
Zinc	mg/kg	720	Dutch Intervention Limit (Serious Risk Criteria ecotoxicological)

Tier 1 Soil Toxicity Assessment Criteria for Building Materials and Potable Water Supply Pipe

Analyte	Units	Tier 1 Value	Source Of Tier 1 Value
Sulphate - Soluble	g/l	1.2	BRE, Special Digest 1:2005 Third Edition, Concrete in aggressive Ground
pH		>6.5	BRE, Special Digest 1:2005 Third Edition, Concrete in aggressive Ground
PAH	mg/kg	50	Water Regulations Advisory Scheme, Information and Guidance Note No 9-04-03, The Selection of materials for Water Supply Pipes to be Laid in Contaminated Land
Phenol	mg/kg	5	Water Regulations Advisory Scheme, Information and Guidance Note No 9-04-03, The Selection of materials for Water Supply Pipes to be Laid in Contaminated Land

* Assumptions made in SNIFFER risk assessment
Soil properties sand as per P13
TOM – 2%
Width of contamination – 10m
Depth to contamination – 1m

APPENDIX VI

STATISTICAL ASSESSMENT

Contract Name: Former Isolation Hospital Dovercourt
Contract No.: 50398
Data Input By: TM
Data Checked By: XXX

Made Ground

		SGV	x mean	Sx	n	t	US95	y max	y mean	Sy	T	T crit	Outliers	Assessment	Estimate of Distribution based on CV
Arsenic	mg/kg	20	15.33	6.59	6	2.015	20.76	1.431	1.152	0.1905	1.47	1.73	No Outliers	Further Assessment Required	Normal Distribution
Cadmium	mg/kg	1	0.53	0.27	6	2.015	0.75	-0.046	-0.323	0.2371	1.17	1.73	No Outliers	No Action Required	Normal Distribution
Chromium	mg/kg	130	17.67	3.98	6	2.015	20.94	1.380	1.239	0.0933	1.52	1.73	No Outliers	No Action Required	Normal Distribution
Mercury	mg/kg	8	0.70	0.36	6	2.015	1.00	0.146	-0.192	0.1849	1.83	1.73	Outliers Present	No Action Required	Normal Distribution
Nickel	mg/kg	50	21.00	10.90	6	2.015	29.97	1.602	1.274	0.2246	1.46	1.73	No Outliers	No Action Required	Normal Distribution
Selenium	mg/kg	35	1.00	0.00	6	2.015	1.00	0.000	0.000	0.0000	No Dev	1.73	Outliers Present	No Action Required	Normal Distribution
		log SGV	x mean	Sx	n	t	US95y	y max	y mean	Sy	T	T crit	Outliers	Assessment	
Lead	mg/kg	2.65	315.17	326.37	6	2.015	2.68	2.958	2.300	0.4580	1.44	1.73	No Outliers	Further Assessment Required	Non Normal Distribution
		Tier 1	x mean	Sx	n	t	US95	y max	y mean	Sy	T	T crit	Outliers	Assessment	
Boron - Water Sol.	mg/kg	3	1.00	0.00	6	2.015	1.00	0.000	0.000	0.0000	No Dev	1.73	Outliers Present	No Action Required	Normal Distribution
Copper	mg/kg	500	53.67	35.87	6	2.015	83.17	2.090	1.666	0.2427	1.74	1.73	Outliers Present	No Action Required	Normal Distribution
Zinc	mg/kg	300	193.50	146.39	6	2.015	315.57	1.602	1.274	0.2246	1.46	1.73	No Outliers	Further Assessment Required	Normal Distribution
Cyanide - Total	mg/kg	250	1.00	0.00	6	2.015	1.00	0.000	0.000	0.0000	No Dev	1.73	Outliers Present	No Action Required	Normal Distribution
Phenols - Total Mono.	mg/kg	78	0.77	0.26	6	2.015	0.98	0.000	-0.137	0.1532	0.90	1.73	No Outliers	No Action Required	Normal Distribution
PAH - Total	mg/kg	40	16.51	14.78	6	2.015	28.67	1.581	0.778	1.0216	0.79	1.73	No Outliers	No Action Required	Normal Distribution
Naphthalene	mg/kg	7	0.38	0.22	6	2.015	0.57	-0.155	-0.491	0.2992	1.12	1.73	No Outliers	No Action Required	Normal Distribution
Benzo(a)Pyrene	mg/kg	2	2.43	1.44	6	2.015	3.62	0.623	0.201	0.6049	0.70	1.73	No Outliers	Further Assessment Required	Normal Distribution

Abbreviations:

SGV	Soil guideline value
x mean	The arithmetic mean of measured concentrations for a determinant
Sx	The unbiased sample standard deviation
n	The number of samples
t	Variable for a 95th percentile confidence limit dependant on the number of samples
US95	The upper 95th percentile bound of the samples
US95y	The upper 95th percentile bound of the sample log values
y max	The log of the maximum measured concentration for a determinant
y mean	The log of the arithmetic mean of measured concentrations for a determinant
Sy	The unbiased standard deviation of log values
T	The outlier test statistic
T crit	The critical T value dependant on the number of samples

APPENDIX VII

UTILITY PLANS

Tim Mitchell
REC
3 Crittall Drive
Springwood Industrial Estate
Braintree
Essex
CM7 2RT

Our Ref: 2006/1960415
Your Ref: 50398/ELEC

Dear Sir/Madam

Former Isolation Hospital, MAIN ROAD, HARWICH, CO124AJ

Thank you for your letter of 25/08/2006 in which you asked if there are any electric lines and/or electrical plant belonging to EDF Energy (EPN) plc ("EDF Energy") within the land identified by your enquiry.

EDF Energy operates the electricity distribution system in three regions: London, the South East, and the East. The map affixed to this letter shows the extent of these regions.

I am able to provide you with records from the London and Eastern areas. Where your enquiry relates to land in or partly in the South Eastern areas, I have passed your enquiry to the South Eastern Cablewatch team, whose details are provided below.

Subject to the above, I enclose a copy of EDF Energy's record of its electric lines and/or electrical plant at the site. If the records provided do not relate to the land to which you had intended to refer please resubmit your enquiry.

This information is made available to you on the terms set out in the numbered paragraphs below.

1. **EDF Energy does not warrant that the information provided to you is correct. You rely upon it at your own risk.**

2. EDF Energy does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.

3. **Subject to paragraph 2 EDF Energy has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise how for any loss, damage, costs, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.**

4. The information about EDF Energy's electrical plant and/or electric lines provided to you belongs to and remains EDF Energy's property. You must not alter it in any respect.

5. **The information provided to you about the electrical plant and/or electric lines depicted on the plans may NOT be a complete record of such apparatus belonging to EDF Energy. The information provided relates to electric lines and/or electrical plant belonging to EDF Energy that it believes to be present but the plans are NOT definitive: other electric lines and/or electrical plant may be present and that may or may not belong to EDF Energy.**

6. **Other apparatus not belonging to EDF Energy is not shown on the plan. It is your responsibility to make your own enquiries elsewhere to discover whether apparatus belonging to others is present. It would be prudent to assume that other apparatus is present.**

7. You are responsible for ensuring:

   that the information made available to you is passed to those acting on your behalf and that all such persons are made aware of the contents of this letter.

8. Because the information provided to you may **NOT** be accurate, you are recommended to ascertain the presence of EDF Energy's electric lines and/or electrical plant by the digging of trial holes. **Trial holes should be dug by hand only. Excavations must be carried out in line with the Health and Safety Executive guidance document HSG 47. We will not undertake this work.**

   All electric lines discovered must be considered LIVE and DANGEROUS at all times and must not be cut, resited, suspended, bent or interfered with unless specially authorised by EDF Energy.

Where your works are likely to affect our electric lines and/or electrical plant an estimate of the price of any protective /diversionary works can be prepared by EDF Energy Networks Branch at Metropolitan House, Darkes Lane, Potters Bar, Herts. , EN6 1AG, telephone no. 0845 234 0040

The electric line and electrical plant belonging to EDF Energy remains so even when made dead and abandoned and any such electric line and/or electrical plant exposed shall be reported to EDF Energy.

9 **Any work near to any overhead electric lines must be carried out by you in accordance with the Health and Safety Executive guidance document GS6 and the Electricity at Work Regulations.**

The GS6 Recommendations may be purchased from HSE Books or downloaded from the Energy Networks Association's website www.hse.gov.uk

If given a reasonable period of prior notice EDF Energy will attend on site without charge to advise how and where "goal posts" should be erected. If you wish to avail yourself of this service, in the first instance please telephone: 08701 963090 between 08:30 and 17:00 Monday to Friday, Public and bank holidays excepted.

General Enquires Team
C/o EDF Energy
Fore Hamlet
Ipswich
Suffolk
IP3 8AA

10. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

11. If in carrying out work on land in, on, under or over which is installed an electric line and/or electrical plant that belongs to EDF Energy you and/or anyone working on your behalf damages (however slightly) that apparatus you must inform immediately EDF Energy by telephone at the number below providing:

    - your name, address and telephone number; and
    - the date, time and place at which such damage was caused; and
    - a description of the electric line and/or electrical plant to which damage was caused; and
    - the name of the person whom it appears to you is responsible for that damage; and
    - the nature of the damage

In the East of England and London 0800 780078 (24 Hours).

In the South East of England 0800 0963766 (24 Hours).

12. The expression "EDF Energy" includes EDF Energy Networks (EPN) plc, EDF Energy Networks (LPN) plc, EDF Energy Networks (SPN) plc, EDF Energy Networks Ltd and any of their successors and predecessors in title.

    IF YOU DO **NOT** ACCEPT AND/OR **DO NOT** UNDERSTAND THE TERMS OF USE SET OUT IN PARAGRAPHS 1 TO 12 INCLUSIVE ABOVE YOU MUST RETURN THE PLANS TO ME.

EDF Energy Contact Numbers and Addresses for London, the East of England & the South East of England

Disconnection	0845 6500247 Metropolitan House, Darkes Lane, Potters Bar, Herts, EN6 1AG
Diversion/protection of cables	08701 964599 Metropolitan House, Darkes Lane, Potters Bar, Herts, EN6 1AG
General network enquiries for the East of England, including East Anglia, Essex, Hertfordshire and Cambridgeshire. (Previously known as Eastern Electricity area)	08701 963090 (8:30 to 5:00pm, Monday to Friday) Fore Hamlet, Ipswich, Suffolk, IP3 8AA
General network enquiries for London (Previously known as London Electricity area)	08701 961056 (8:30 to 5:00pm, Monday to Friday) Doxford Hylton (BRC), Unit F, Colima Ave, Sunderland Enterprise Park, SR5 3XD
General network enquiries for the South East of England (Previously known as Seeboard area)	08456 014516 (8:30 to 5:00pm, Monday to Friday) or by minicom on 08000 153312 (text phone only) Wealden House, Lewes Road, East Grinstead, West Sussex, RH19 3WE
Load enquiries. If you want to increase the amount of load that you use, it will be necessary to FAX your proposal to the number on the right. You will be informed about any work that will be required by EDF Energy and given any necessary quotations.	**FAX ONLY** 0845 6500248 Contact your supplier first.
New connections	0845 2340040 Metropolitan House, Darkes Lane, Potters Bar, Herts, EN6 1AG
Wayleaves London. For information about substations etc. which are sited on your property and owned by EDF Energy in the London area.	0208 298 8675 or 8676 or 8777 Operational Property and Consents 255 Broadway, Bexleyheath, DA6 8ET
Wayleaves East of England. For information about substations etc. which are sited on your property and owned by EDF Energy in the East of England area.	08701 963777 Operational Property and Consents Barton Road, Bury St Edmunds, Suffolk, IP32 7BG
Wayleaves South East of England. For information about substations etc. which are sited on your property and owned by EDF Energy in the South East of England area.	01239 590100 Operational Property and Consents Stephanson Way Crawley, West Sussex RH10 1TN

I would remind you that work adjacent to electric lines and/or electrical plant represents a serious risk to health and safety and as such should feature amongst the items you have assessed in your workplace risk assessment.

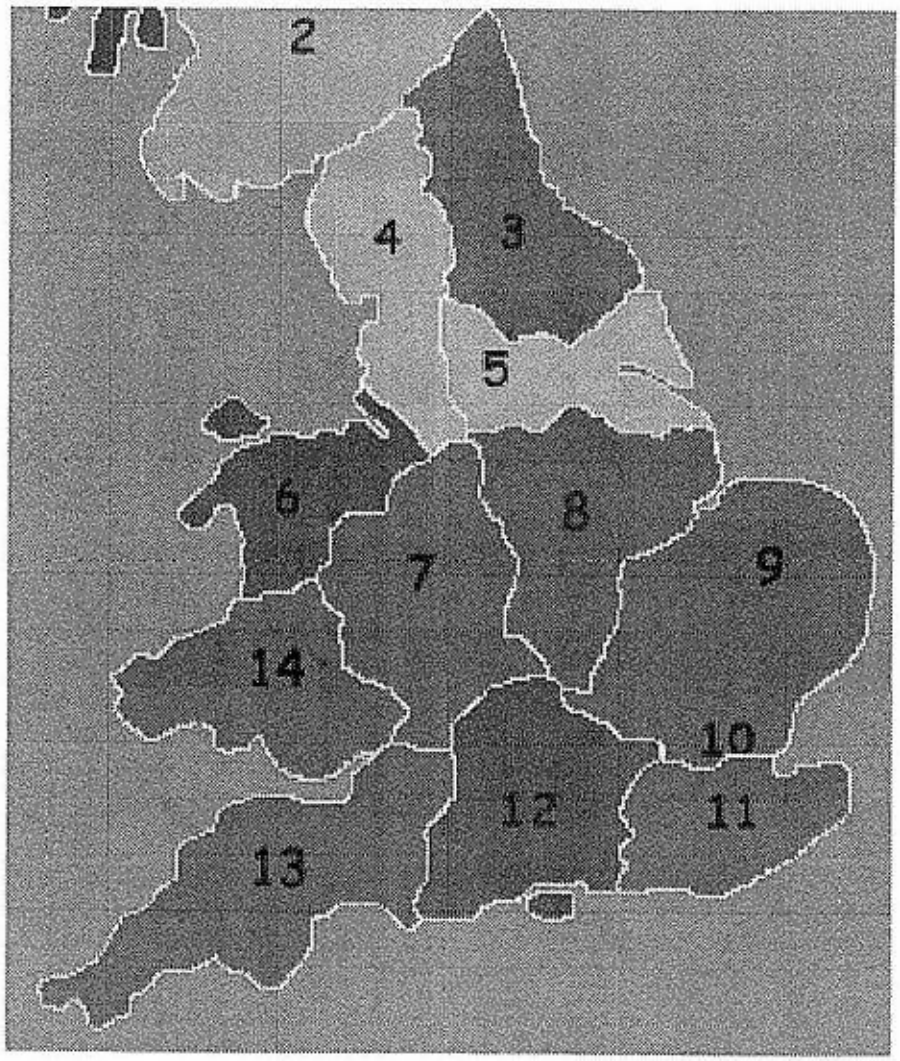
I shall be pleased to supply you with further assistance if you require it.

Yours sincerely

[redacted]

Lynn Thorne - Direct Line: 08701 963797
Plan Provision

Number	Owner	Website
2	Scottish Power	http://www.scottishpower.com
3	CE Electric UK	http://www.ce-electricuk.com
4	United Utilities	http://unitedutilities.com
5	CE Electric UK	http://www.ce-electricuk.com
6	Scottish Power	http://www.scottishpower.com
7	Central Networks	http://www.central-networks.co.uk
8	Central Networks	http://www.central-networks.co.uk
9	EDF East of England	http://www.edfenergy.com
10	EDF London (Central)	http://www.edfenergy.com
11	EDF South East of England	http://www.edfenergy.com
12	Scottish & Southern	http://www.scottish-southern.co.uk
13	Western Power	http://www.westernpower.co.uk/
14	Western Power	http://www.westernpower.co.uk/



EDF Energy, Plan Provision, Fore Hamlet, Ipswich, IP3 8AA. [redacted]
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Registered office: 40 Grosvenor Place, Victoria, London, SW1X 7EN

Advice to Civil Contractors on Avoiding Danger from Buried Electricity Services

EDF ENERGY

The New Roads and Street Works Act 1991 has required since August 1997 that at least one accredited person be present on a street works site while work is in progress. This information sheet is not meant as a substitute for proper accreditation, but does however provide guidance and simple precautions that should be adopted before any work is carried out on the public footpath or highway.

Please note: At least one member of the working party should be streetworks accredited and have this accreditation available for inspection, if required to produce it.

Many accidents occur when underground cables are damaged during the course of excavation. Damage to 'Live' electricity cables can result in an explosion, which can cause serious injury or even death.

Nearly every footpath in major towns and cities has one or more electricity cables beneath it. Therefore your attention is drawn to the following points:

1. Have cable drawings with you on site and check them before you start the excavation work. Remember: Some cables may not belong to EDF Energy and therefore will not be shown on the drawings. All records are a guide only and may not be accurate due to geographical changes e.g. footpath level being increased/decreased for example.

2. Have a cable location device on site e.g. CAT (Cable Avoidance Tool), and use this to help you survey the site before you start digging. If you don't know how to use a Cable Avoidance Tool, then please refer to your supervisor or supplier/manufacturer, in order to gain training in the competent use of cable avoidance tools before using them. Furthermore, if you have not received adequate training, cable detection should be referred to trained colleagues before work commences rather than cable detection being abandoned.

3. Mark out the location of electricity cables in accordance with the signals that are obtained from the location tool. Remember that:

   - *The cable locator, in the 'power' mode will not always detect the presence of all cables - especially if they are not carrying any current at the time;*
   - *When the cable locator is used along with the signal generator, or in the 'radio' mode, it is more likely that cables not carrying current will be detected.*

4. Look around you to see if there is anything nearby that would have an electricity service, such as lamp columns, phone boxes, bus shelters, traffic light control boxes etc. These all will have a small service cable running to them, which can be easily damaged.

5. Continue to use the locator during the entire excavation process - you may be only inches away from a live cable!

6. Do Not use a mechanical excavator within 0.5m of the known presence of an electricity cable, and if one is used at any time keep everyone clear of the bucket while it is digging.

7. Use spades and shovels with insulated handles in preference to other tools such as forks and picks and *never* throw or spike tools forcibly into the ground.

8. If forks and picks have to be used, then tools with short blunted chisel ended tines should be used. This may be the case if the ground is very hard and the surface needs to be broken up first.

9. If any cables are suspected of being embedded in the concrete that you need to excavate, do not start work until:

   - The cables have been made dead, (*likely to require EDF Energy attendance to site)*

   OR

   - A representative of EDF Energy has established and communicated to you, an agreed alternative safe system of work

10. Never assume that cables follow a straight line or that they run at the same depth.

11. Never disturb electricity cables and joints or their protective covers.

12. Always ensure that all exposed cables are adequately supported, e.g. house brick etc, and *never* use cables or joints as hand holds or steps for gaining entry/exit to an excavation. If necessary protect cables using sandbags, timber shuttering etc.

In the event that a cable is damaged, or that you suspect a cable is damaged *(No matter how slight):*

- Mark the location
- Keep people at a safe distance
- Telephone EDF Energy using one of the following number:
- 0800 - 780078

When calling, you will need to describe the incident and its exact location, giving the Name, address and telephone number of your company. No charge will be made for cable damage site visits where cable repairs are not required.

Emergencies & Electricity supply faults including cable damage up-dates & estimated times of repair in the East of England EDF Energy area:

[redacted]

Requests for Mains Plans should be sent to:
Plan Provision
EDF Energy
Fore Hamlet
Ipswich
Suffolk
IP3 8AA
Fax: 08701 963782
Tel: 08701 963797

Please note that service cables and cables to street furniture etc. are not usually shown.

Low voltage cables

High voltage cables
11,000 volt cables

High voltage cables
33.000 volts

High voltage cables
132,000 volt cables

Joints

Link boxes

Substations

Ducts/pipes

Underground box

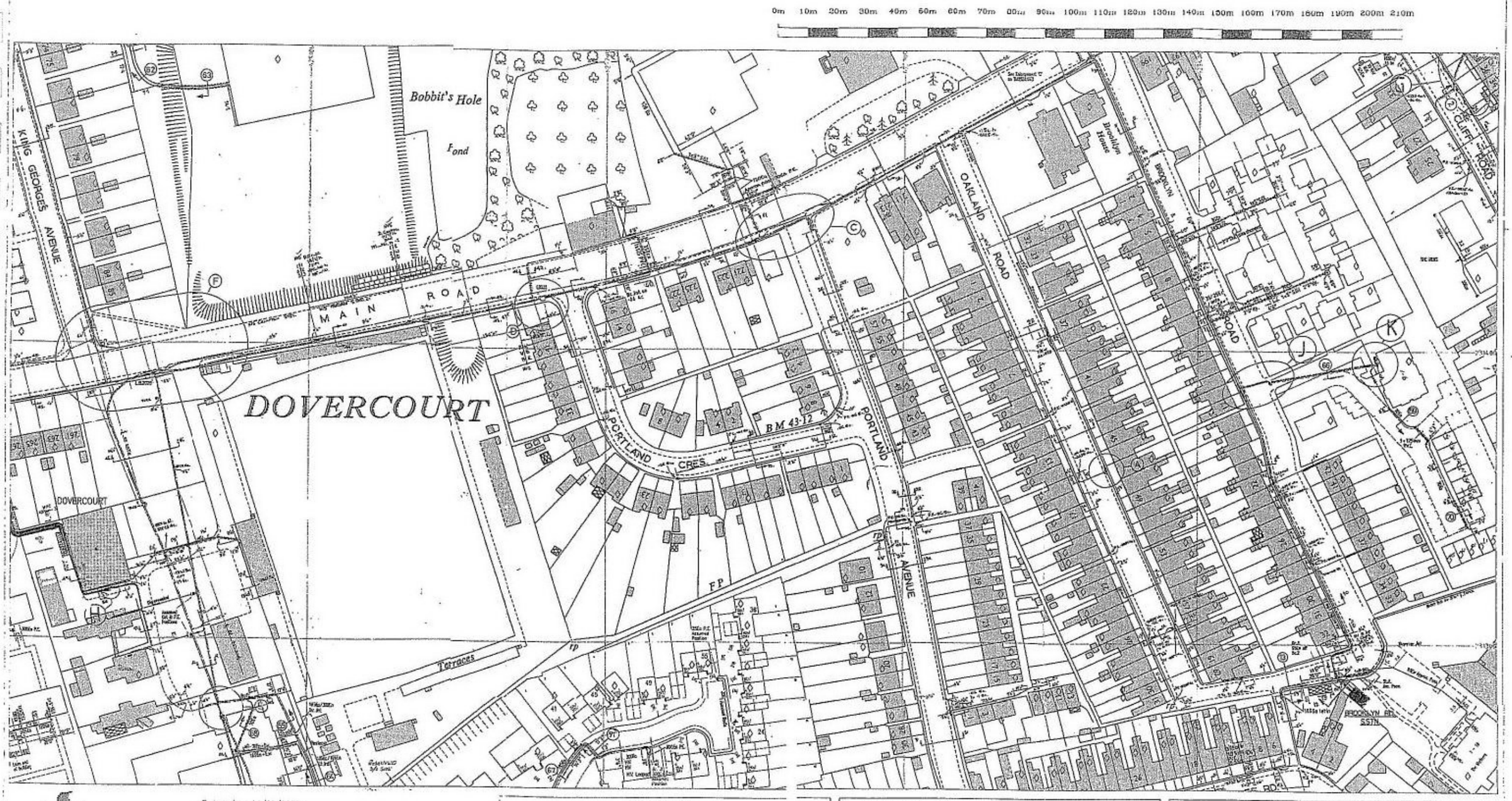
Feeder pillar F.P

Service turret

Cross sections show number of cables, ducts and approximate depths.

Please Note: The basic precautions and advice given here are explained in more detail in the Health and Safety Executive publication, HS(G) 47 - 'Avoiding Danger from Underground Services' priced £7.50 (ISBN 0-7176-1744-0) - available from HSE books and HMSO. ISBN

Please report every cable damage to the Damage Help Line on [redacted] Open 24 hours.



EDF ENERGY networks

Plotted On : 14/08/2006

Plotted By : Martin Johnson

Plot Description : Contents of plot menu line title_line_1

Contents of plot menu line title_line_2

Map Centre : TM2531SW

EDF Energy
Plan Provision
Fore Homes
IPSWICH
Suffolk
IP1 2AA
[redacted]

N
W
E

For details of the symbology please refer to www.edfenergy.com/core/symbols

PRIMARY CABLES
EXTRA HIGH VOLTAGE CABLES (EHV) 22,000 TO 132,000 Volts

Depth normally 750mm cover in carriageway & 600mm cover in footway.

Before digging within one metre of these cable routes Telephone 08701 963797 in order that the Company's apparatus may be located on site and any necessary protection works agreed.

N.B. THRUST BORERS OR MOLES MUST NOT BE USED WITHIN THE VICINITY C ANY CABLES BELONGING TO EDF ENERGY WITHOUT FIRST CONTACTING THIS COMP ANY.

SAFETY

The position of the apparatus shown on this drawing is believed to be corr ct but the original landmarks may have been altered since the apparatus was ins alled. The exact position of the apparatus should be verified by the use of a suit able cable location device prior to excavation using suitable hand tools.
It must be assumed that there is a service cable into each property, lamp column and street sign, etc.
All cables must be treated as being live unless proved otherwise by a EDF Energy Supervisor.
The information provided must be given to all people working near EDF Ene gy apparatus.

IF IN DOUBT – ASK! PHONE 08701 963797

1. EDF Energy does not warrant that the information provided to you is correct. You rely upon it at your own risk.

2. EDF Energy does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.

3. Subject to paragraph 2 EDF Energy has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise howsoever for any loss, damage, costs, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.

ADVICE TO CONTRACTORS ON AVOIDING DANGER FROM BURIED ELECTRICITY CABLES

1) Do have cable drawings with you on site and check them before you start the excavation.
2) Do have a cable locator tool on site and use it to help you.
3) Mark out the location of electricity cables.
4) Do not use a mechanical excavator within 0.5m of electricity cables.
5) Use spades and shovels in preference to other tools.
6) Never disturb electricity cables and joints or their protective covers.

REPORTING DAMAGED CABLES
EDF Energy [redacted]

These basic safety precautions are explained in detail in the HSE booklet HS(G)47 – Avoiding Danger from Underground Services, a copy of which may be obtained from your supervisor or HMSO.

Please be aware that electric lines belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

0m 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m 110m 120m 130m 140m 150m 160m 170m 180m 190m 200m 210m

1549
·61
Bobbit's Hole
0947
2·43
Playing Field
Pond
Playground
Playground
The Royal Oak (P H)
rp
TCB
DOVERCOURT
Royal Oak 1234
Football Ground 3·26
WEST CENTRAL WARD
Ambulance Station
FB
Pond
FP
Old Vicarage
Dovercourt Methodist Church
Brooklyn House
Lyndhurst
Builder's Yard
Cliff Road Congl Ch
Laundry
30

EDF ENERGY networks

Plotted On : 08/09/2006

Plotted By : Lynn Thorne

Plot Description : Contents of plot menu line title_line_1

Contents of plot menu line title_line_2

Map Centre : TL4756NW

EDF Energy
Plan Provision
Fore Hamlet
IPSWICH
Suffolk
IP3 8AA
[redacted]

N
W E
S

For details of the symbology please refer to www.edfenergy.com/core/symbols

PRIMARY CABLES
EXTRA HIGH VOLTAGE CABLES (EHV) 22,000 TO 132,000 Volts

Depth normally 750mm cover in carriageway & 600mm cover in footway.

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N.B. THRUST BORERS OR MOLES MUST NOT BE USED WITHIN THE VICINITY OF CABLES BELONGING TO EDF ENERGY WITHOUT FIRST CONTACTING THIS COMPANY

SAFETY

The position of the apparatus shown on this drawing is believed to be correct from the original landmarks may have been altered since the apparatus was installed. The exact position of the apparatus should be verified by the use of a suitable cable location device prior to excavation using suitable hand tools.
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The information provided must be given to all people working near EDF Energy apparatus.

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1. EDF Energy does not warrant that the information provided to you is correct. You rely upon it at your own risk.

2. EDF Energy does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.

3. Subject to paragraph 2 EDF Energy has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise howsoever for any loss, damage, costs, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.

ADVICE TO CONTRACTORS ON AVOIDING DANGER FROM BURIED ELECTRICITY CABLES.

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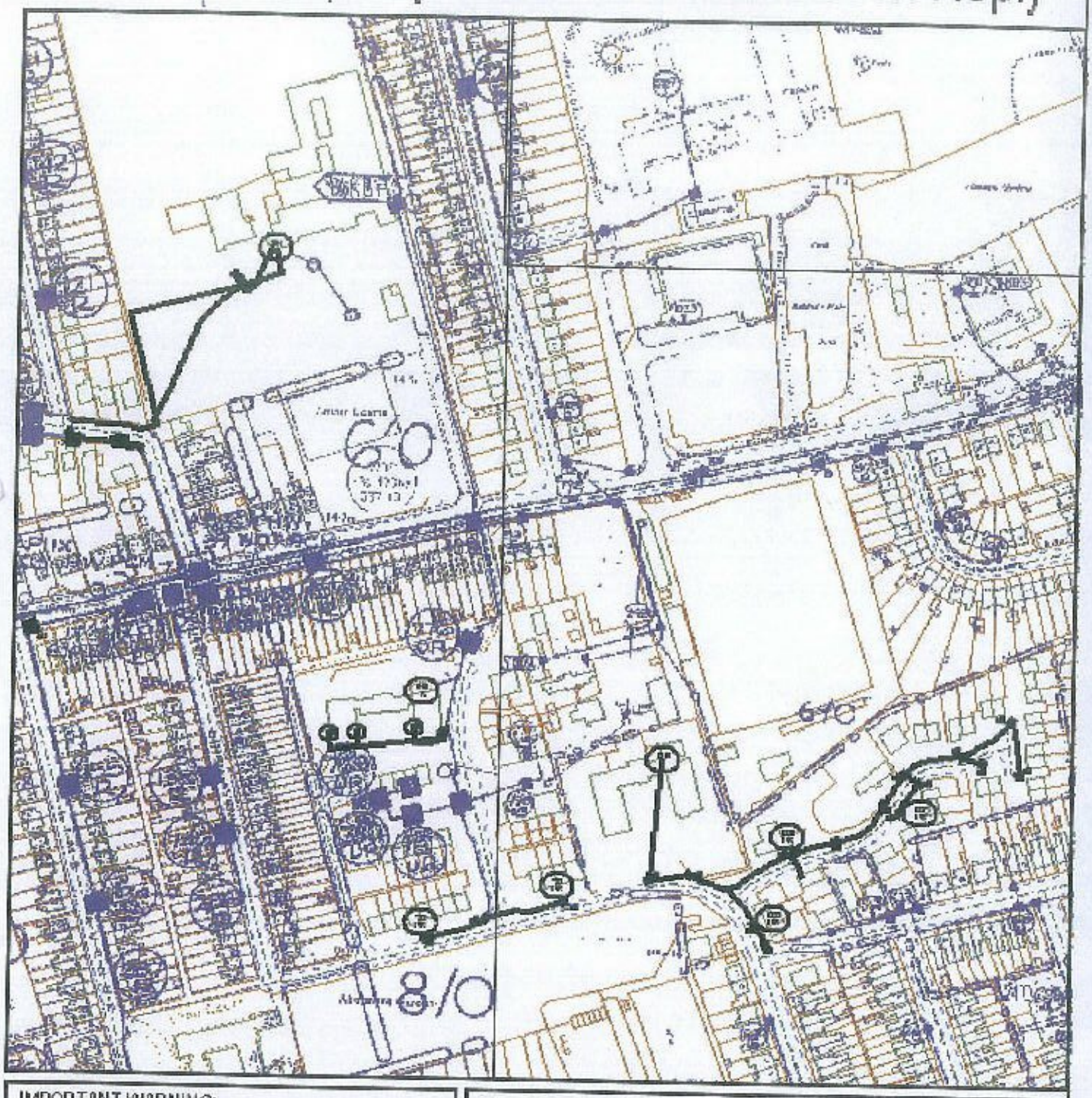
2) Do have a cable locator tool on site and use it to help you.
3) Mark out the location of electricity cables.
4) Do not use a mechanical excavator within 0.5m of electricity cables.
5) Use spades and shovels in preference to other tools.
6) Never disturb electricity cables and joints or their protective covers.

REPORTING DAMAGED CABLES
EDF Energy [redacted]

These basic safety precautions are explained in detail in the HSE booklet HS(G)47 – Avoiding Danger from Underground Services, a copy of which may be obtained from your supervisor or HMSO.

Please be aware that electric lines belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

BT Maps by email Plant Information Reply



IMPORTANT WARNING:
Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

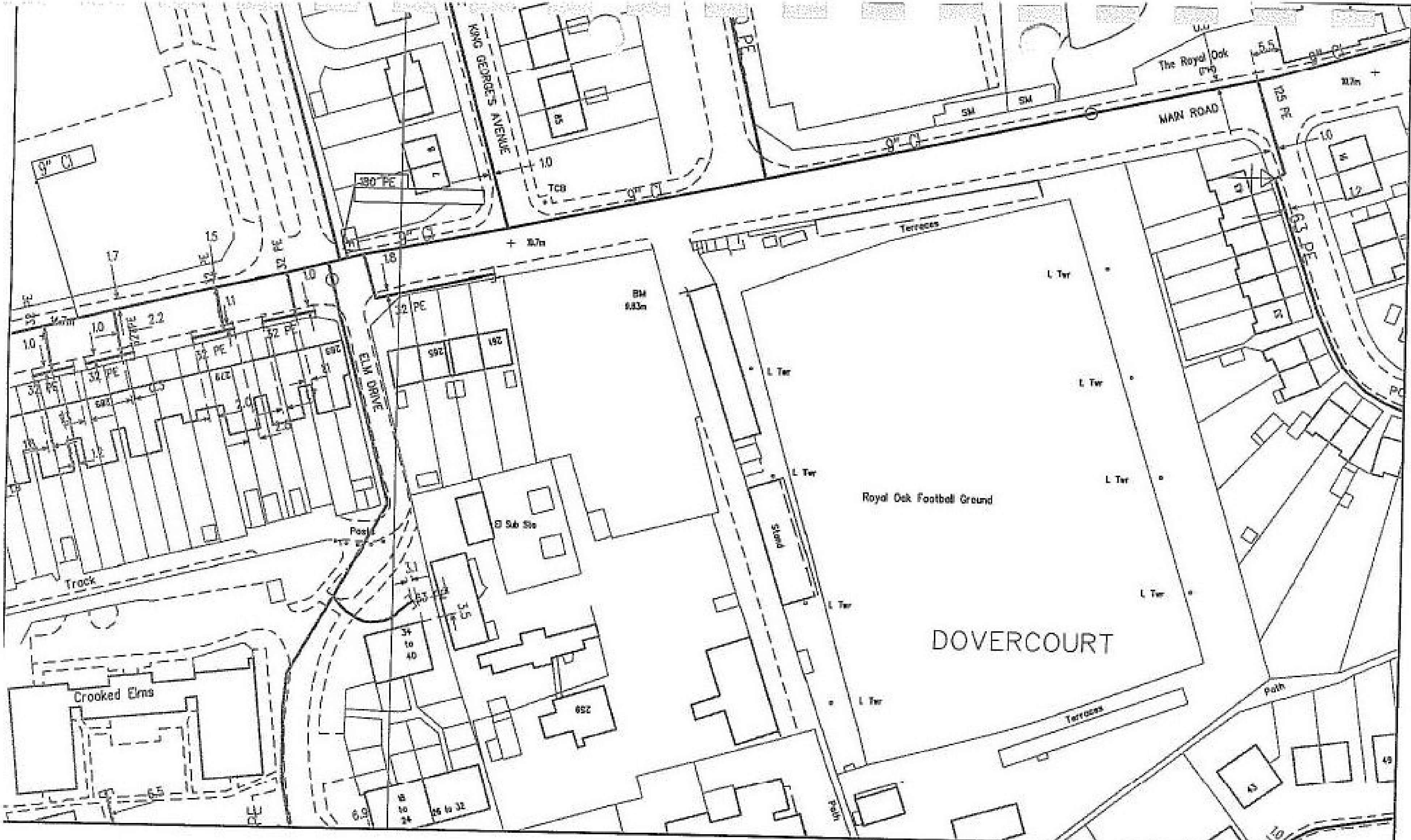
FOR ON-SITE LOCATION & MARKING SERVICE
CALL DIAL BEFORE YOU DIG 0800 917 3993

KEY TO BT SYMBOLS

- UNDERGROUND PLANT (BC, D, W or M)
- OVERHEAD PLANT
- JOINT BOX
- DISTRIB'N POINT
- MANHOLE
- POLE
- CABINET
- BURIED JOINT
- JOINTING POST
- PROPOSED U/G (BC, D, W or M)
- PROPOSED O/H
- PROPOSED BOX

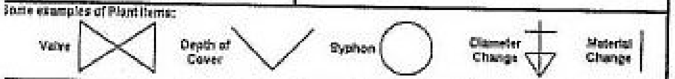
Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

BT ref: UYM14189K
Map reference (centre): TM2502031365
Issued: 05/09/06 14:19:50



SCALE: Not to scale	LP MAINS	
USER ID: timm	MP MAINS	
DATE: 05/09/2006	IP MAINS	
EXTRACT DATE: 09/06/2006	LHP MAINS	
MAP REF: TM2531	NHP MAINS	
CENTRE: 625066, 231355		

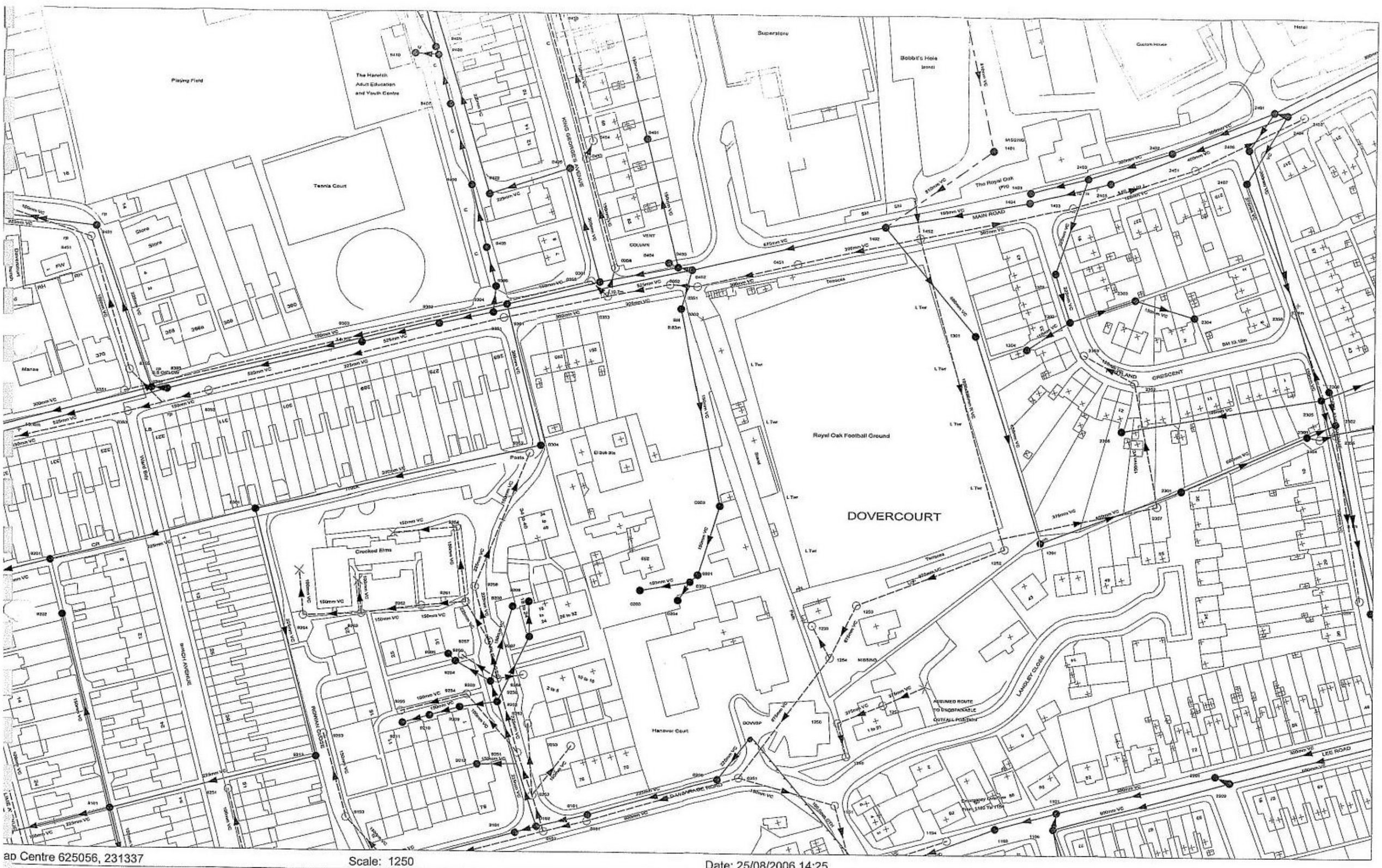
Some examples of Plant Items:



This plan shows those pipes owned by National Grid Gas plc or the relevant Gas Distribution Network in their roles as Licensed Gas Transporters (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by National Grid Gas plc, the relevant Gas Distribution Network, or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

MAPS Viewer Version 5.0.12.0

Local Machine



ap Centre 625056, 231337

Scale: 1250

Date: 25/08/2006 14:25

information on this drawing is based on the best available rmation but the actual position of all apparatus must be garded as approximate and MUST be established by trial ples. No liability whatsoever is accepted for any error or ission. Reproduced from the Ordnance Survey map by Anglian er Services by permission of Ordnance Survey on behalf of Controller of Her Majesty's Stationary Office Crown pyright Anglian Water Services WU 298492.

ata updated: May 2006

anglian

Asset Information Team
Geodesys
PO Box 486
Huntingdon
PE29 6YN

Sewerage Asset Legend

- Surface Water Sewer
- S104/Private Sewer
- Foul Sewer
- Combined Sewer
- Decommisioned Sewer
- Rising Main
- Vacuum Sewer
- Gravity Sewer
- Vent Column
- Manhole (Non Surface Water)
- Manhole (Surface Water)

Property Address: Site at, Former Isolation Hospital, Harwich, Essex, CO12 4AJ

Customer:

Title: A510018(1) ()

Origin			Downstream sewer			
Manhole Number	Cover Level (m AOD)	Depth to Invert (m)	Upstream Invert Level (m AOD)	Length (m)	Downstream Invert Level (m AOD)	Downstream Manhole Number
0101	8.826	2.47	6.35	50.10	5.41	0206
0102	9.134	2.46	6.67	19.55	6.35	0101
0151	8.887	1.64	7.24	56.70	6.55	0251
152	9.087	1.65	7.43	16.61	7.24	0151
201	9.532	0.81	8.72	27.32	8.41	0303
0202	9.533	0.73	8.80	3.94	8.72	0201
0203	9.557	0.46	9.09	19.00	8.80	0202
204	9.232	0.46	8.77	8.36	8.80	0202
206	8.181	2.77	5.41	20.51	7.42	
0251	8.068	1.51	6.55	56.43	-99.00	1254
0252	9.107	1.47	7.63	14.19	7.43	0152
253	9.061	1	8.06	23.41	7.63	0252
301	10.518	2.05	8.46	29.68	7.84	0403
0302	9.595	1.71	7.88	15.25	7.33	0402
0303	9.597	1.18	8.41	75.40	7.88	0302
304	11.694	1.82	9.87	54.47	9.32	9301
351	9.965	0.99	8.97	38.31	8.36	0451
0352	10.194	0.97	9.22	10.43	8.97	0351
0353	10.523	1	9.52	23.68	9.22	0352
8354	10.466	0.58	9.88	10.94	9.52	0353
355	10.51	0.61	9.90	8.36	9.52	0353
401	11.123	2.07	9.05	49.12	7.84	0403
0402	10.186	2.85	7.33	73.93	4.63	1402
0403	10.166	2.32	7.84	5.51	7.33	0402
404	-99	-99	-99.00	3.83	7.84	0403
405	11.771	2.68	9.09	43.91	8.46	0301
0451	9.902	1.54	8.36	46.81	5.39	1452
0452	11.893	1.38	10.51	42.15	9.88	0354
454	12.026	1.11	10.91	7.09	10.51	0452
455	14.26	1.81	12.45	49.48	10.91	0454
1101	9.947	1.12	8.82	6.27	8.81	1106
1103	9.869	1.26	8.60	23.88	8.82	1101
1106	9.971	1.154	8.81	67.93	7.68	2202
1251	8.534	1.34	7.19	37.59	6.55	0251
1254	9.806	1.09	8.71	34.90	8.35	1153
1301	6.942	1.62	5.32	61.67	4.98	1301
1252	7.285	1.35	5.93	4.41	-99.00	
1253	7.853	1.67	6.18	58.96	5.93	1252
1254	-99	-99	-99.00	22.23	6.18	1253
1255	8.204	0.91	7.29	13.84	-99.00	1254
1257	-99	-99	-99.00	17.06	-99.00	
1258	7.444	0.89	6.55	18.06	-99.00	1257
1259	7.518	1.07	6.44	13.03	6.55	1258
1301	7.492	-99	4.98	52.72	4.63	1402
1302	10.116	2.59	7.52	37.33	7.14	2403
1303	10.034	2.35	7.68	18.79	7.52	1302
1304	9.185	1.18	8.00	19.32	7.68	1303
1401	-99	-99	-99.00	58.42	3.56	1502
1402	9.788	5.15	6.63	54.51	6.42	1404
1403	10.094	3.02	7.07	22.36	7.14	2403
1404	10.142	3.72	6.42	31.18	6.28	2405
1452	9.818	4.42	5.39	15.19	5.22	
1453	10.64	1.62	9.02	58.23	5.39	1452
2001	10.667	2.33	8.33	70.73	7.77	3202
2002	10.762	3.08	7.68	68.85	7.36	3204
2201	8.183	2.58	5.60	56.08	5.32	1201
2302	9.755	3.91	5.84	11.70	-99.00	2309
2303	11.536	1.86	9.67	25.70	7.68	1303
2304	11.108	11.11	-99.00	23.11	9.67	2303
2305	10.671	3.22	7.45	96.80	7.26	2406
2306	10.697	4.23	6.46	83.40	6.06	2407
2308	9.265	0.41	8.85	75.54	7.45	2305
2309	-99	-99	-99.00	51.19	5.60	2301
2352	9.76	0.54	9.22	47.20	-99.00	2357
2353	9.874	0.33	9.54	21.61	9.22	2352
2354	17.21	9.715	-99.00	4.83	5.84	2309
2355	9.671	2.12	7.55	6.15	7.49	2354
2356	12.64	0.87	11.77	47.58	7.55	2355
2357	-99	-99	-99.00	59.52	-99.00	

Origin			Downstream sewer			
Manhole Number	Cover Level (m AOD)	Depth to Invert (m)	Upstream Invert Level (m AOD)	Length (m)	Downstream Invert Level (m AOD)	Downstream Manhole Number
2401	15.609	8.56	7.04	89.28	6.87	3502
2402	12.908	5.74	7.16	41.02	7.04	2401
2403	10.815	3.67	7.14	32.70	7.16	2402
2404	21.81	15.78	6.03	89.61	6.14	3503
2405	10.985	4.7	6.28	70.62	6.03	2404
2406	14.956	7.69	7.26	16.82	7.04	2401
2407	14.871	8.81	6.06	29.31	6.03	2404
2451	13.36	1.46	11.90	47.67	9.02	1453
2452	15.975	1.11	14.86	45.08	11.90	2451
3203	9.307	2.27	7.03	72.28	6.86	2302
3251	9.112	0.68	8.43	63.28	7.55	2355
8101	15.158	3.13	12.02	79.29	11.45	9213
8102	16.566	3.83	12.73	17.33	-99.00	
8160	12.464	0.78	11.70	21.33	9.46	
8201	19.276	2.38	16.92	79.01	14.37	8301
8202	18.614	2.9	15.71	74.96	12.06	8101
8251	12.852	0.61	12.42	24.40	11.68	8160
8301	16.553	5.96	10.59	108.48	9.87	0304
8302	17.907	5.93	12.00	5.86	10.83	8303
8303	17.863	7.05	11.76	74.64	11.48	9303
8351	18.32	1.05	17.27	178.40	9.90	0355
8352	17.122	2.5	14.62	112.91	9.86	9351
8353	18.343	2.12	16.22	13.15	-99.00	
8355	18.101	1.67	16.43	17.51	14.69	
8401	18.339	5.85	12.48	63.81	12.16	8302
8451	18.411	1.64	16.77	51.64	16.46	8355
9101	9.23	2.4	6.83	8.17	6.67	0102
9153	10.844	1.35	9.49	27.31	8.60	9151
9202	9.433	1.98	7.45	24.38	6.83	
9203	9.529	1.96	7.56	8.10	7.48	9202
9204	11.202	1.94	9.26	15.03	7.72	9203
9205	11.375	1.48	9.89	3.75	9.28	9204
9206	10.481	1.62	8.86	29.39	7.73	9203
9207	10.237	1.91	8.32	27.27	7.58	9202
9208	10.202	1.56	8.64	13.26	8.33	9207
9209	10.067	1.28	8.78	14.00	7.58	9202
9210	10.622	1.4	9.22	11.64	8.78	9209
9212	9.665	1.33	8.33	14.60	6.83	
9213	11.976	0.55	11.42	95.79	10.67	8301
9251	9.269	1.41	7.85	16.98	7.63	0252
9252	9.575	1.17	8.40	27.00	7.63	0252
9253	12.096	1.65	10.44	32.55	9.52	9153
9254	10.034	1.5	8.53	28.85	7.98	9251
9255	11.329	1.49	9.83	25.27	8.54	9254
9256	9.566	1.52	8.04	28.77	7.88	9251
9257	10.157	1.91	8.24	14.57	8.06	9256
9258	11.152	1.45	9.70	21.15	8.27	9257
9259	9.805	1.53	8.27	9.78	8.21	9256
9260	11.099	1.13	9.96	15.74	8.20	9256
9261	11.366	1.11	10.25	17.07	8.37	9257
9262	11.979	1.31	10.66	16.51	10.28	9261
9263	12.539	1.07	11.46	22.57	10.69	9262
9264	13.008	0.95	12.05	21.50	11.47	9263
9301	11.737	2.41	9.32	35.38	8.46	0301
9302	14.413	4	10.41	20.51	-99.00	9304
9303	16.281	4.83	11.45	29.61	10.46	9302
9304	-99	3.91	-99.00	75.81	7.42	0402
9305	12.325	0.98	11.34	9.71	7.42	9304
9351	11.668	1.84	9.82	39.35	9.52	0353
9352	11.682	1.06	10.62	27.06	-99.00	
9354	11.984	0.94	11.04	28.36	10.38	9261
9402	12.954	3.17	9.78	16.64	-99.00	
9404	15.95	3.91	12.04	72.73	9.82	9402
9405	-99	-99	-99.00	14.91	11.34	9305
9406	-99	-99	-99.00	23.80	-99.00	9405
9407	-99	-99	-99.00	31.02	-99.00	9406
9408	-99	-99	-99.00	19.48	-99.00	9407
9409	-99	-99	-99.00	3.14	-99.00	9408

Origin			Downstream sewer			
Manhole Number	Cover Level (m AOD)	Depth to Invert (m)	Upstream Invert Level (m AOD)	Length (m)	Downstream Invert Level (m AOD)	Downstream Manhole Number
9410	-99	-99	-99.00	8.65	-99.00	9408

Map Centre 625056, 231337

Scale: 1250

Date: 25/08/2006 14:25

ata updated: May 2006

anglian

Asset Information Team
Geodesys
PO Box 486
Huntingdon
PE29 6YN

Sewerage Asset Legend

- Surface Water Sewer
- S104/Private Sewer
- Foul Sewer
- Combined Sewer
- Decommisioned Sewer
- Rising Main
- Vacuum Sewer
- Gravity Sewer
- Vent Column
- Manhole (Non Surface Water)
- Manhole (Surface Water)

Property Address: Site at, Former Isolation Hospital, Harwich, Essex, CO12 4AJ

Customer:

Title: A510018(1) ()